

CHAPTER 1

Financial Accounting and Accounting Standards

ASSIGNMENT CLASSIFICATION TABLE

Topics	Questions	Cases
1. Subject matter of accounting.	1	1
2. Environment of accounting.	2, 3, 4	3, 4
3. Role of principles, objectives, standards, and accounting theory.	5, 6, 7	2
4. Historical development of accounting standards.	8, 9, 10, 11, 12	5, 16
5. Authoritative pronouncements and standards-setting bodies.	13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	6, 7, 8, 9, 10, 11, 12, 15, 16
6. Role of pressure groups.	25, 26, 27, 28, 29	17, 18
7. International accounting.	30	14
8. Ethical issues.	31	13

ASSIGNMENT CHARACTERISTICS TABLE

Item	Description	Level of Difficulty	Time (minutes)
C1-1	Financial accounting.	Simple	15-20
C1-2	Objectives of financial reporting.	Moderate	20-25
C1-3	Accounting numbers and the environment.	Simple	10-15
C1-4	Need for accounting standards.	Simple	15-20
C1-5	AICPA's role in standards setting.	Simple	20-25
C1-6	FASB role in standards setting.	Simple	20-25
C1-7	Government role in standards setting.	Simple	10-15
C1-8	Politicalization of standards setting.	Complex	30-40
C1-9	Models for setting accounting standards.	Simple	15-20
C1-10	Standards-setting terminology.	Moderate	30-40
C1-11	Accounting organizations and documents issued.	Simple	15-20
C1-12	Accounting pronouncements.	Simple	10-15
C1-13	Issues involving standards setting.	Complex	20-25
C1-14	Securities and Exchange Commission.	Moderate	30-40
C1-15	Standards-setting process.	Moderate	25-35
C1-16	History of standards-setting organizations.	Moderate	25-35
C1-17	Economic Consequences.	Moderate	25-35
C1-18	Standards-setting process, economic consequences.	Moderate	25-35

ANSWERS TO QUESTIONS

1. Financial accounting measures, classifies, and summarizes in report form those activities and that information which relate to the enterprise as a whole for use by parties both internal and external to a business enterprise. Managerial accounting also measures, classifies, and summarizes in report form enterprise activities, but the communication is for the use of internal, managerial parties, and relates more to subsystems of the entity. Managerial accounting is management decision oriented and directed more toward product line, division, and profit center reporting.
2. Financial statements generally refer to the four basic financial statements: balance sheet, income statement, statement of cash flows, and statement of changes in owners' or stockholders' equity. Financial reporting is a broader concept; it includes the basic financial statements and any other means of communicating financial and economic data to interested external parties. Examples of financial reporting other than financial reports are annual reports, prospectuses, reports filed with the government, news releases, management forecasts or plans, and descriptions of an enterprise's social or environmental impact.
3. If a company's financial performance is measured accurately, fairly, and on a timely basis, the right managers and companies are able to attract investment capital. To provide unreliable and irrelevant information leads to poor capital allocation which adversely affects the securities market.
4. Some major challenges facing the accounting profession relate to the following items:
 - Non-financial measurement – how to report significant key performance measurements such as customer satisfaction indexes, backlog information and reject rates on goods purchased.
 - Forward-looking information – how to report more future oriented information.
 - Soft assets – how to report on intangible assets, such as market know-how, market dominance, and well-trained employees.
 - Timeliness – how to report more real-time information.
5. In general, the objectives of financial reporting are to provide (1) information that is useful in investment and credit decisions, (2) information that is useful in assessing cash flow prospects, and (3) information about enterprise resources, claims to those resources, and changes in them. More specifically these objectives state that financial reporting should provide information:
 - a. that is useful to present and potential investors and creditors and other users in making rational investment, credit, and similar decisions. The information should be comprehensible to those who have a reasonable understanding of business and economic activities and are willing to study the information with reasonable diligence.
 - b. to help present and potential investors and creditors and other users in assessing the amounts, timing, and uncertainty of prospective cash receipts from dividends or interest and the proceeds from the sale, redemption, or maturity of securities or loans. Since investors and creditors' cash flows are related to enterprise cash flows, financial reporting should provide information to help investors, creditors, and other users assess the amounts, timing, and uncertainty of prospective net cash inflows to the related enterprise.
 - c. about the economic resources of an enterprise, the claims to those resources (obligations of the enterprise to transfer resources to other entities), owners' equity, and the effects of transactions, events, and circumstances that change its resources and claims to those resources.
6. A common set of standards applied by all businesses and entities provides financial statements which are reasonably comparable. Without a common set of standards, each enterprise could, and would, develop its own theory structure and set of practices, resulting in noncomparability among enterprises.

Questions Chapter 1 (Continued)

7. General-purpose financial statements are not likely to satisfy the specific needs of all interested parties. Since the needs of interested parties such as creditors, managers, owners, governmental agencies, and financial analysts vary considerably, it is unlikely that one set of financial statements is equally appropriate for these varied uses.
8. Accounting was affected and changed between 1900 and 1930 by the newly developed corporate form of enterprise with its absentee ownership, the imposition of tax on business and individual income, and the stock market crash and subsequent great depression.
9. The SEC has the power to prescribe, in whatever detail it desires, the accounting practices and principles to be employed by the companies that fall within its jurisdiction. Because the SEC receives audited financial statements from nearly all companies that issue securities to the public or are listed on the stock exchanges, it is greatly interested in the content, accuracy, and credibility of the statements. For many years the SEC relied on the AICPA to regulate the profession and develop and enforce accounting principles. Lately, the SEC has assumed a more active role in the development of accounting standards, especially in the area of disclosure requirements. In December 1973, in ASR No. 150, the SEC said the FASB's statements would be presumed to carry substantial authoritative support and anything contrary to them to lack such support. It thereby supports the development of accounting principles in the private sector.
10. The Committee on Accounting Procedure was a special committee of the American Institute of CPAs that, between the years of 1939 and 1959, issued 51 **Accounting Research Bulletins** dealing with a wide variety of timely accounting problems. These bulletins provided solutions to immediate problems and narrowed the range of alternative practices. But, the Committee's problem-by-problem approach failed to provide a well-defined and well-structured body of accounting theory that was so badly needed. The Committee on Accounting Procedure was replaced in 1959 by the Accounting Principles Board.
11. The creation of the Accounting Principles Board was intended to advance the written expression of accounting principles, to determine appropriate practices, and to narrow the differences and inconsistencies in practice. To achieve its basic objectives, its mission was to develop an overall conceptual framework to assist in the resolution of problems as they became evident and to do substantive research on individual issues before pronouncements were issued.
12. **Accounting Research Bulletins** were pronouncements on accounting practice issued by the Committee on Accounting Procedure between 1939 and 1959; since 1964 they have been recognized as accepted accounting practice unless superseded in part or in whole by an opinion of the APB or an FASB standard. **APB Opinions** were issued by the Accounting Principles Board during the years 1959 through 1973 and, unless superseded by FASB Statements, are recognized as accepted practice and constitute the requirements to be followed by all business enterprises. **FASB Statements** are pronouncements of the Financial Accounting Standards Board and currently represent the accounting profession's authoritative pronouncements on financial accounting and reporting practices.
13. The explanation should note that generally accepted accounting principles or standards have "substantial authoritative support." They consist of accounting practices, procedures, theories, concepts, and methods which are recognized by a large majority of practicing accountants as well as other members of the business and financial community. Bulletins issued by the Committee on Accounting Procedure, opinions rendered by the Accounting Principles Board, and statements issued by the Financial Accounting Standards Board constitute "substantial authoritative support."
14. It was believed that FASB Statements would carry greater weight than APB Opinions because of significant differences between the FASB and the APB, namely: (1) The FASB has a smaller membership of full-time compensated members; (2) the FASB has greater autonomy and increased independence; and (3) the FASB has broader representation than the APB.

Questions Chapter 1 (Continued)

15. The technical staff of the FASB conducts research on an identified accounting topic and prepares a “discussion memorandum” that is released by the Board for public reaction. The Board analyzes and evaluates the public response to the discussion memorandum, deliberates on the issues, and issues an “exposure draft” for public comment. The discussion memorandum merely presents all facts and alternatives related to a specific topic or problem, whereas the exposure draft is a tentative “statement.” After studying the public’s reaction to the exposure draft, the Board may reevaluate its position, revise the draft, and vote on the issuance of a final statement.
16. Statements of financial accounting **standards** constitute generally accepted accounting principles and dictate acceptable financial accounting and reporting practices as promulgated by the FASB. The first standards statement was issued by the FASB in 1973.

Statements of financial accounting **concepts** do not establish generally accepted accounting principles. Rather, the concepts statements set forth fundamental objectives and concepts that the FASB intends to use as a basis for developing future standards. The concepts serve as guidelines in solving existing and emerging accounting problems in a consistent, sound manner. Both the standards statements and the concepts statements may develop through the same process from discussion memorandum, to exposure draft, to a final approved statement.

17. Rule 203 of the Code of Professional Conduct prohibits a member of the AICPA from expressing an opinion that financial statements conform with GAAP if those statements contain a material departure from an accounting principle promulgated by the FASB, or its predecessors, the APB and the CAP, unless the member can demonstrate that because of unusual circumstances the financial statements would otherwise have been misleading. Failure to follow Rule 203 can lead to a loss of a CPA’s license to practice. This rule is extremely important because it requires auditors to follow FASB standards.
18. FASB Standards, FASB Technical Bulletins, AICPA Practice Bulletins.
19. The chairman of the FASB was indicating that too much attention is put on the bottom line and not enough on the development of quality products. Managers should be less concerned with short-term results and be more concerned with the long-term results. In addition, short-term tax benefits often lead to long-term problems.

The second part of his comment relates to accountants being overly concerned with following a set of rules, so that if litigation ensues, they will be able to argue that they followed the rules exactly. The problem with this approach is that accountants want more and more rules with less reliance on professional judgment. Less professional judgment leads to inappropriate use of accounting procedures in difficult situations.

In the accountants’ defense, recent legal decisions have imposed vast new liability on accountants. The concept of accountant’s liability that has emerged in these cases is broad and expansive; the number of classes of people to whom the accountant is held responsible are almost limitless.

20. FASB Technical Bulletins provide guidance on financial accounting and reporting problems, and are designed to provide prompt responses to specific questions. They are interpretive in nature and do not establish new financial accounting standards or amend existing standards. Unlike FASB Interpretations, FASB Technical Bulletins are not written by members of the FASB but by members of its staff. They are not formally voted upon by members of the FASB, and they are not enforceable under the AICPA’s Code of Professional Conduct.
21. The Emerging Issues Task Force often arrives at consensus conclusions on certain financial reporting issues. These consensus conclusions are then looked upon as GAAP by practitioners

Questions Chapter 1 (Continued)

because the SEC has indicated that it will view consensus solutions as preferred accounting and will require persuasive justification for departing from them. Thus, at least for public companies which are subject to SEC oversight, consensus solutions developed by the Emerging Issues Task Force are followed unless subsequently overturned by the FASB in a FASB Statement, Interpretation, or Technical Bulletin.

22. The Governmental Accounting Standards Board, under the oversight of the Financial Accounting Foundation, was created in 1984 to address state and local governmental reporting issues. The new board has replaced a number of organizations that set rules for government accounting. The National Council on Governmental Accounting, a voluntary body affiliated with the Municipal Finance Officers Association, was the primary standard setter for about 100,000 government units. But many other organizations also offered guidance for government accounting. The new GASB will consolidate the rules into one body.
23. Possible reasons might be:
 1. The objectives of financial reporting for other types of enterprises (government, railroads, etc.) are not sufficiently different from those established by the FASB to warrant a separate standard-setting structure.
 2. The existence of competing standard-setting bodies would create serious jurisdictional conflicts.
 3. The framework is already in place within the existing structure to enforce the standards promulgated by the FASB.
 4. The FASB already has significant support from user groups of external financial reports. Uncertainty exists concerning the ability of any other standard-setting body to gain such support.
24. AcSEC is the senior technical committee within the Accounting Standards Division of the AICPA and is authorized to speak for the AICPA in the area of financial accounting and reporting. AcSEC issues Statements of Position on accounting matters, Practices Bulletins, and Industry Accounting Guides. It is not related to the FASB in any way. Its membership consists of appointed practitioners and professors who meet for several days monthly and are unpaid for their services.

Because of AcSEC's proliferation of pronouncements, the FASB in late 1978 publicly expressed concerns that the AICPA (through AcSEC) was becoming a competing standards-setting body. In its most recent proposal, the FASB had labeled the specialized accounting and reporting principles and practices contained in designated AICPA Industry Accounting Guides, Industry Audit Guides, and Statements of Position as "preferable accounting principles for purposes of justifying a change in accounting principle."

25. The sources of pressure are innumerable, but the most intense and continuous pressure to change or influence accounting principles or standards come from individual companies, industry associations, governmental agencies, practicing accountants, academicians, professional accounting organizations, and public opinion.
26. Economic consequences means the impact of accounting reports on the wealth positions of issuers and users of financial information and the decision-making behavior resulting from that impact. In other words, accounting information impacts various users in many different ways which leads to wealth transfers among these various groups.

If politics plays an important role in the development of accounting standards, standards will be subject to manipulation for the purpose of furthering whatever policy prevails at the moment. No matter how well intentioned the standards setter may be, if information is designed to indicate that investing in a particular enterprise involves less risk than it actually does, or is designed to encourage investment in a particular segment of the economy, financial reporting will suffer an irreplaceable loss of credibility.

Questions Chapter 1 (Continued)

27. No one particular proposal is expected in answer to this question. The students' proposals, however, should be defensible relative to the following criteria:
1. The method must be efficient, responsive, and expeditious.
 2. The method must be free of bias and be above or insulated from pressure groups.
 3. The method must command widespread support if it does not have legislative authority.
 4. The method must produce sound yet practicable accounting principles or standards.
- The students' proposals might take the form of alterations of the existing methodology, an accounting court (as proposed by Leonard Spacek), or governmental device.
28. Concern exists about fraudulent financial reporting because it can undermine the entire financial reporting process. Failure to provide information to users that is accurate can lead to inappropriate allocations of resources in our economy. In addition, failure to detect massive fraud can lead to additional governmental oversight of the accounting profession.
29. The expectations gap is the difference between what people think accountants should be doing and what accountants think they can do. It is a difficult gap to close. The accounting profession recognizes it must play an important role in narrowing this gap. To meet the needs of society, the profession is continuing its efforts in developing accounting standards, such as numerous pronouncements issued by the FASB, to serve as guidelines for recording and processing business transactions in the changing economic environment.
30. Some of the reasons for difference are:
1. The objectives of financial reporting are often different in foreign countries.
 2. The institutional structures are often not comparable.
 3. Strong national tendencies are pervasive and therefore there is reluctance to adopt any one country's approach.
31. Accountants must perceive the moral dimensions of some situations because GAAP does not define or cover all specific features that are to be reported in financial statements. In these instances accountants must choose among alternatives. These accounting choices influence whether particular stakeholders may be harmed or benefited. Moral decision-making involves awareness of potential harm or benefit and taking responsibility for the choices.

TIME AND PURPOSE OF CASES

Case 1-1 (Time 15-20 minutes)

Purpose—to provide the student with an opportunity to distinguish between financial accounting and managerial accounting, identify major financial statements, and differentiate financial statements and financial reporting.

Case 1-2 (Time 20-25 minutes)

Purpose—to provide the student with an opportunity to explain the basic objectives of financial reporting.

Case 1-3 (Time 10-15 minutes)

Purpose—to provide the student with an opportunity to describe how reported accounting numbers might affect an individual's perceptions and actions.

Case 1-4 (Time 15-20 minutes)

Purpose—to provide the student with an opportunity to evaluate the viewpoint of removing mandatory accounting standards and allowing each company to voluntarily disclose the information it desired.

Case 1-5 (Time 20-25 minutes)

Purpose—to provide the student with an opportunity to explain the evolution of accounting standards-setting organizations and the role of the AICPA in the standards-setting environment.

Case 1-6 (Time 20-25 minutes)

Purpose—to provide the student with an opportunity to identify the sponsoring organization of the FASB, the method by which the FASB arrives at a decision, and the types and the purposes of documents issued by the FASB.

Case 1-7 (Time 10-15 minutes)

Purpose—to provide the student with an opportunity to identify the governmental entity that oversees the FASB and indicate its role in the standards-setting process.

Case 1-8 (Time 30-40 minutes)

Purpose—to provide the student with an opportunity to focus on the types of organizations involved in the standards-setting process, what impact accounting has on the environment, and the environment's influence on accounting.

Case 1-9 (Time 15-20 minutes)

Purpose—to provide the student with an opportunity to focus on what type of standards-setting environment exists in the United States. In addition, this case explores why user groups are interested in the nature of financial reporting standards and why some groups wish to issue their own standards.

Case 1-10 (Time 30-40 minutes)

Purpose—to provide the student with an opportunity to identify and define acronyms appearing in the first chapter. Some are self-evident, others are not so.

Case 1-11 (Time 15-20 minutes)

Purpose—to provide the student with an opportunity to identify the various documents issued by different accounting organizations. The case should help the student to better focus on the more important documents issued in the financial reporting area.

Case 1-12 (Time 10-15 minutes)

Purpose—to provide the student with an opportunity to match the descriptions of a number of authoritative pronouncements issued by standards-setting bodies to the pronouncements.

Time and Purpose of Cases (Continued)

Case 1-13 (Time 20-25 minutes)

Purpose—to provide the student with an opportunity to consider the ethic dimensions of implementation of a new accounting standard.

Case 1-14 (Time 30-40 minutes)

Purpose—to provide the student with an assignment that explores the role and function of the Securities and Exchange Commission.

Case 1-15 (Time 25-35 minutes)

Purpose—to provide the student with an assignment that explores the role of the FASB and the standards-setting process.

Case 1-16 (Time 25-35 minutes)

Purpose—to provide the student with a writing assignment on the evolution of accounting standards-setting organizations.

Case 1-17 (Time 25-35 minutes)

Purpose—to provide the student with the opportunity to discuss the role of Congress in accounting standards-setting as well as to discuss the core standards project related to international accounting.

Case 1-18 (Time 25-35 minutes)

Purpose—to provide the student with an opportunity to comment on a letter sent by business executives to the FASB and Congress on the accounting for derivatives.

SOLUTIONS TO CASES

CASE 1-1

- (a) Financial accounting is the process that culminates in the preparation of financial reports relative to the enterprise as a whole for use by parties both internal and external to the enterprise. In contrast, managerial accounting is the process of identification, measurement, accumulation, analysis, preparation, interpretation, and communication of financial information used by the management to plan, evaluate, and control within an organization and to assure appropriate use of, and accountability for, its resources.
- (b) The financial statements most frequently provided are the balance sheet, the income statement, the statement of cash flows, and the statement of changes in owners' or stockholders' equity.
- (c) Financial statements are the principal means through which financial information is communicated to those outside an enterprise. As indicated in (b), there are four major financial statements. However, some financial information is better provided, or can be provided only, by means of financial reporting other than formal financial statements. Financial reporting (other than financial statements and related notes) may take various forms. Examples include the company president's letter or supplementary schedules in the corporate annual reports, prospectuses, reports filed with government agencies, news releases, management's forecasts, and descriptions of an enterprise's social or environmental impact.

CASE 1-2

- (a) In accordance with **Statement of Financial Accounting Concepts No. 1**, "Objectives of Financial Reporting by Business Enterprises," the objectives of financial reporting are to provide information to investors, creditors, and others
 1. that is useful to present and potential investors and creditors and other users in making rational investment, credit, and similar decisions. The information should be comprehensible to those who have a reasonable understanding of business and economic activities and are willing to study the information with reasonable diligence.
 2. to help present and potential investors and creditors and other users in assessing the amounts, timing, and uncertainty of prospective cash receipts from dividends or interest and the proceeds from the sale, redemption, or maturity of securities or loans. Since investors' and creditors' cash flows are related to enterprise cash flows, financial reporting should provide information to help investors, creditors, and others assess the amounts, timing, and uncertainty of prospective net cash inflows to the related enterprise.
 3. about the economic resources of an enterprise, the claims to those resources (obligations of the enterprise to transfer resources to other entities and owners' equity), and the effects of transactions, events, and circumstances that change its resources and claims to those resources.
- (b) **Statement of Financial Accounting Concepts No. 1** established standards to meet the information needs of large groups of external users such as investors, creditors, and their representatives. Although the level of sophistication related to business and financial accounting matters varies both within and between these user groups, users are expected to possess a reasonable understanding of accounting concepts, financial statements, and business and economic activities and are expected to be willing to study and interpret the information with reasonable diligence.

CASE 1-3

Accounting numbers affect investing decisions. Investors, for example, use the financial statements of different companies to enhance their understanding of each company's financial strength and operating results. Because these statements follow generally accepted accounting principles, investors can make meaningful comparisons of different financial statements to assist their investment decisions.

Accounting numbers also influence creditors' decisions. A commercial bank usually looks into a company's financial statements and past credit history before deciding whether to grant a loan and in what amount. The financial statements provide a fair picture of the company's financial strength (for example, short-term liquidity and long-term solvency) and operating performance for the current period and over a period of time. The information is essential for the bank to ensure that the loan is safe and sound.

CASE 1-4

It is not appropriate to abandon mandatory accounting standards and allow each company to voluntarily disclose the type of information it considered important. Without a coherent body of accounting theory and standards, each accountant or enterprise would have to develop its own theory structure and set of practices, and readers of financial statements would have to familiarize themselves with every company's peculiar accounting and reporting practices. As a result, it would be almost impossible to prepare statements that could be compared.

In addition, voluntary disclosure may not be an efficient way of disseminating information. A company is likely to disclose less information if it has the discretion to do so. Thus, the company can reduce its cost of assembling and disseminating information. However, an investor wishing additional information has to pay to receive additional information desired. Different investors may be interested in different types of information. Since the company may not be equipped to provide the requested information, it would have to spend additional resources to fulfill such needs; or the company may refuse to furnish such information if it's too costly to do so. As a result, investors may not get the desired information or they may have to pay a significant amount of money for it. Furthermore, redundancy in gathering and distributing information occurs when different investors ask for the same information at different points in time. To the society as a whole, this would not be an efficient way of utilizing resources.

CASE 1-5

- (a) One of the committees that the AICPA established prior to the establishment of the FASB was the Committee on Accounting Procedures (CAP). The CAP, during its existence from 1939 to 1959, issued 51 Accounting Research Bulletins (ARB). In 1959, the AICPA created the Accounting Principles Board (APB) to replace the CAP. Before being replaced by the FASB, the APB released 31 official pronouncements, called APB Opinions.
- (b) Although the ARBs issued by the CAP helped to narrow the range of alternative practices to some extent, the CAP's problem-by-problem approach failed to provide the well-defined, structured body of accounting principles that was both needed and desired. As a result, the CAP was replaced by the APB.

The APB had more authority and responsibility than did the CAP. Unfortunately, the APB was beleaguered throughout its 14-year existence. It came under fire early, charged with lack of productivity and failing to act promptly to correct alleged accounting abuses. The APB also met a lot of industry and CPA firm opposition and occasional governmental interference when tackling numerous thorny accounting issues. In fear of governmental rule-making, the accounting profession investigated the ineffectiveness of the APB and replaced it with the FASB.

CASE 1-5 (Continued)

Learning from prior experiences, the FASB has several significant differences from the APB. The FASB has: (1) smaller membership, (2) full-time, compensated membership, (3) greater autonomy, (4) increased independence, and (5) broader representation. In addition, the FASB has its own research staff and relies on the expertise of various task force groups formed for various projects. These features form the bases for the expectations of success and support from the public. In addition, the due process taken by the FASB in establishing financial accounting standards gives interested persons ample opportunity to make their views known. Thus, the FASB is responsive to the needs and viewpoints of the entire economic community, not just the public accounting profession.

- (c) The AICPA supplements the FASB's efforts in the present standard-setting environment. The issue papers, which are prepared by the Accounting Standards Executive Committee (AcSEC), identify current financial reporting problems for specific industries and present alternative treatments of the issue. These papers provide the FASB with an early warning device to insure timely issuance of FASB standards, Interpretations, and Technical Bulletins. In situations where the FASB avoids the subject of an issue paper, AcSEC may issue a Statement of Position to provide guidance for the reporting issue. AcSEC also issues Practice Bulletins which indicate how the AICPA believes a given transaction should be reported.

In addition, the AICPA is still the leader in developing auditing standards through its Auditing Standards Board. These standards are the guidelines for regulating auditing practice and for developing and enforcing professional ethics.

CASE 1-6

- (a) The Financial Accounting Foundation (FAF) is the sponsoring organization of the FASB. The FAF selects the members of the FASB and its Advisory Council, funds their activities, and generally oversees the FASB's activities.

The FASB follows a due process in establishing a typical FASB Statement of Financial Accounting Standards. The following steps are usually taken: (1) A topic or project is identified and placed on the Board's agenda. (2) A task force of experts from various sectors is assembled to define problems, issues, and alternatives related to the topic. (3) Research and analysis are conducted by the FASB technical staff. (4) A discussion memorandum is drafted and released. (5) A public hearing is often held, usually 60 days after the release of the memorandum. (6) The Board analyzes and evaluates the public response. (7) The Board deliberates on the issues and prepares an exposure draft for release. (8) After a 30-day (minimum) exposure period for public comment, the Board evaluates all of the responses received. (9) A committee studies the exposure draft in relation to the public responses, reevaluates its position, and revises the draft if necessary. (10) The full Board gives the revised draft final consideration and votes on issuance of a Standards Statement. The passage of a new accounting standard in the form of an FASB Statement requires the support of five of the seven Board members.

- (b) The FASB issues three major types of pronouncements: Standards and Interpretations, Financial Accounting Concepts, and Technical Bulletins. Financial accounting standards issued by the FASB are considered GAAP. In addition, the FASB also issues interpretations that represent modifications or extensions of existing standards and APB Opinions. These interpretations have the same authority as standards and APB Opinions in guiding current accounting practices.

The Statements of Financial Accounting Concepts (SFAC) help the FASB to avoid the "problem-by-problem approach." These statements set forth fundamental objectives and concepts that the Board will use in developing future standards of financial accounting and reporting. They are intended to form a cohesive set of interrelated concepts, a body of theory or a conceptual frame-

CASE 1-6 (Continued)

work, that will serve as tools for solving existing and emerging problems in a consistent, sound manner.

The FASB may issue a technical bulletin when there is a need for guidelines on implementing or applying FASB Standards or Interpretations, APB Opinions, Accounting Research Bulletins, or emerging issues. A technical bulletin is issued only when (1) it is not expected to cause a major change in accounting practice for a number of enterprises, (2) its cost of implementation is low, and (3) the guidance provided by the bulletin does not conflict with any broad fundamental accounting principle.

In addition, the FASB's Emerging Issues Task Force (EITF) issues statements to provide guidance on how to account for new and unusual financial transactions that have the potential for creating diversity in reporting practices. The EITF identifies controversial accounting problems as they arise and determines whether they can be quickly resolved or whether the FASB should become involved in solving them. In essence, it becomes a "problem filter" for the FASB. Thus, it is hoped that the FASB will be able to work on more pervasive long-term problems, while the EITF deals with short-term emerging issues.

CASE 1-7

The Securities and Exchange Commission (SEC) is the governmental entity that provides oversight over the accounting standards-setting process. Until the 1960s, the SEC acted with remarkable restraint in the area of developing accounting standards. Generally, it relied on the AICPA to regulate the accounting profession and develop and enforce accounting standards.

During the APB era, however, the SEC took a more active interest in the development of accounting standards, pressing for quicker action, specific pronouncements, and eventually for the demise of the APB. Recently, the SEC has interacted with the FASB as both a supporter and a prodder. Because it confronts the financial accounting and reporting practices of U.S. business on a daily basis, the SEC frequently identifies emerging problems for the FASB to address. The Commission communicates these problems to the FASB, responds to FASB drafts and exposures, and provides the FASB with counsel and advice upon request.

The SEC has reaffirmed its support for the FASB, indicating that "financial statements conforming to standards set by the FASB will be presumed to have authoritative support." In short, the SEC requires public companies to adhere to GAAP.

CASE 1-8

- (a) **CAP.** The Committee on Accounting Procedure, CAP, which was in existence from 1939 to 1959, was a natural outgrowth of AICPA committees which were in existence during the period 1933 to 1938. The committee was formed in direct response to the criticism received by the accounting profession during the financial crisis of 1929 and the years thereafter. The authorization to issue pronouncements on matters of accounting principles and procedures was based on the belief that the AICPA had the responsibility to establish practices that would become generally accepted by the profession and by corporate management.

As a general rule, the CAP directed its attention, almost entirely, to resolving specific accounting problems and topics rather than to the development of generally accepted accounting principles. The committee voted on the acceptance of specific Accounting Research Bulletins published by the committee. A two-thirds majority was required to issue a particular research bulletin. The CAP did not have the authority to require acceptance of the issued bulletins by the general membership

CASE 1-8 (Continued)

of the AICPA, but rather received its authority only upon general acceptance of the pronouncement by the members. That is, the bulletins set forth normative accounting procedures that "should be" followed by the accounting profession, but were not "required" to be followed.

It was not until well after the demise of the CAP, in 1964, that the Council of the AICPA adopted recommendations that departures from effective CAP Bulletins should be disclosed in financial statements or in audit reports of members of the AICPA. The demise of the CAP could probably be traced to four distinct factors: (1) the narrow nature of the subjects covered by the bulletins issued by the CAP, (2) the lack of any theoretical groundwork in establishing the procedures presented in the bulletins, (3) the lack of any real authority by the CAP in prescribing adherence to the procedures described by the bulletins, and (4) the lack of any formal representation on the CAP of interest groups such as corporate managers, governmental agencies, and security analysts.

APB. The objectives of the APB were formulated mainly to correct the deficiencies of the CAP as described above. The APB was thus charged with the responsibility of developing written expression of generally accepted accounting principles through consideration of the research done by other members of the AICPA in preparing Accounting Research Studies. The committee was in turn given substantial authoritative standing in that all opinions of the APB were to constitute substantial authoritative support for generally accepted accounting principles. If an individual member of the AICPA decided that a principle or procedure outside of the official pronouncements of the APB had substantial authoritative support, the member had to disclose the departure from the official APB opinion in the financial statements of the firm in question.

The membership of the committee comprising the APB was also extended to include representation from industry, government, and academe. The opinions were also designed to include minority dissents by members of the board. Exposure drafts of the proposed opinions were readily distributed.

The demise of the APB occurred primarily because the purposes for which it was created were not being accomplished. Broad generally accepted accounting principles were not being developed. The research studies supposedly being undertaken in support of subsequent opinions to be expressed by the APB were often ignored. The committee in essence became a simple extension of the original CAP in that only very specific problem areas were being addressed. Interest groups outside of the accounting profession questioned the appropriateness and desirability of having the AICPA directly responsible for the establishment of GAAP. Politicization of the establishment of GAAP had become a reality because of the far-reaching effects involved in the questions being resolved.

FASB. The formal organization of the FASB represents an attempt to vest the responsibility of establishing GAAP in an organization representing the diverse interest groups affected by the use of GAAP. The FASB is independent of the AICPA. It is independent, in fact, of any private or governmental organization. Individual CPAs, firms of CPAs, accounting educators, and representatives of private industry will now have an opportunity to make known their views to the FASB through their membership on the Board. Independence is facilitated through the funding of the organization and payment of the members of the Board. Full-time members are paid by the organization and the organization itself is funded solely through contributions. Thus, no one interest group has a vested interest in the FASB.

Conclusion. The evolution of the current FASB certainly does represent "increasing politicization of accounting standards setting." Many of the efforts extended by the AICPA can be directly attributed to the desire to satisfy the interests of many groups within our society. The FASB represents, perhaps, just another step in this evolutionary process.

CASE 1-8 (Continued)

- (b) Arguments for politicalization of the accounting rule-making process:
1. Accounting depends in large part on public confidence for its success. Consequently, the critical issues are not solely technical, so all those having a bona fide interest in the output of accounting should have some influence on that output.
 2. There are numerous conflicts between the various interest groups. In the face of this, compromise is necessary, particularly since the critical issues in accounting are value judgments, not the type which are solvable, as we have traditionally assumed, using deterministic models. Only in this way (reasonable compromise) will the financial community have confidence in the fairness and objectivity of accounting rule-making.
 3. Over the years, accountants have been unable to establish, on the basis of technical accounting elements, rules which would bring about the desired uniformity and acceptability. This inability itself indicates rule-setting is primarily consensual in nature.
 4. The public accounting profession, through bodies such as the Accounting Principles Board, made rules which business enterprises and individuals "had" to follow. For many years, these businesses and individuals had little say as to what the rules would be, in spite of the fact that their economic well-being was influenced to a substantial degree by those rules. It is only natural that they would try to influence or control the factors that determine their economic well-being.
- (c) Arguments against the politicalization of the accounting rule-making process:
1. Many accountants feel that accounting is primarily technical in nature. Consequently, they feel that substantive, basic research by objective, independent and fair-minded researchers ultimately will result in the best solutions to critical issues, such as the concepts of income and capital, even if it is accepted that there isn't necessarily a single "right" solution.
 2. Even if it is accepted that there are no "absolute truths" as far as critical issues are concerned, many feel that professional accountants, taking into account the diverse interests of the various groups using accounting information, are in the best position, because of their independence, education, training, and objectivity, to decide what generally accepted accounting principles ought to be.
 3. The complex situations that arise in the business world require that trained accountants develop the appropriate accounting principles.
 4. The use of consensus to develop accounting principles would decrease the professional status of the accountant.
 5. This approach would lead to "lobbying" by various parties to influence the establishment of accounting principles.

CASE 1-9

- (a) The public/private mixed approach appears to be the way standards are established in the United States. In many respects, the FASB is a quasi-governmental agency in that its standards are required to be followed because the SEC has provided support for this approach. The SEC has the ultimate power to establish standards but has chosen to permit the private sector to develop these standards. By accepting the standards established by the FASB as authoritative, it has granted much power to the FASB. (It might be useful to inform the students that not all countries follow this model. For example, the purely political approach is used in France and West Germany. The private, professional approach is employed in Australia, Canada, and the United Kingdom.)
- (b) Publicly reported accounting numbers influence the distribution of scarce resources. Resources are channeled where needed at returns commensurate with perceived risk. Thus, reported accounting numbers have economic effects in that resources are transferred among entities and individuals as a consequence of these numbers. It is not surprising then that individuals affected by these numbers will be extremely interested in any proposed changes in the financial reporting environment.

CASE 1-9 (Continued)

- (c) The Accounting Standards Executive Committee (AcSEC of the AICPA), among other groups, has presented a potential challenge to the exclusive right of the FASB to establish accounting principles. Also, Congress has been attempting to legislate certain accounting practices, particularly to help struggling industries.

Some possible reasons why other groups might wish to establish standards are:

1. As indicated in the previous answer, standards have economic effects and therefore certain groups would prefer to make their own standards to ensure that they receive just treatment.
2. Some believe the FASB does not act quickly to resolve accounting matters, either because it is not that interested in the subject area or because it lacks the resources to do so.
3. Some argue that the FASB does not have the competence to legislate standards in certain areas. For example, many have argued that the FASB should not legislate standards for not-for-profit enterprises because the problems are unique and not well known by the FASB.

CASE 1-10

- (a) **AICPA.** American Institute of Certified Public Accountants. The national organization of practicing certified public accountants.
- (b) **CAP.** Committee on Accounting Procedure. A committee of practicing CPAs which issued 51 Accounting Research Bulletins between 1939 and 1959 and is a predecessor of the FASB.
- (c) **ARB.** Accounting Research Bulletins. Official pronouncements of the Committee on Accounting Procedure which, unless superseded, remain a primary source of GAAP.
- (d) **APB.** Accounting Principles Board. A committee of public accountants, industry accountants and academicians which issued 31 Opinions between 1959 and 1973. The APB replaced the CAP and was itself replaced by the FASB. Its opinions, unless superseded, remain a primary source of GAAP.
- (e) **FAF.** Financial Accounting Foundation. An organization whose purpose is to select members of the FASB and its Advisory Councils, fund their activities, and exercise general oversight.
- (f) **FASAC.** Financial Accounting Standards Advisory Council. An organization whose purpose is to consult with the FASB on issues, project priorities, and select task forces.
- (g) **SOP.** Statements of Position. Statements issued by the AICPA (through the Accounting Standards Executive Committee of its Accounting Standards Division) which are generally devoted to emerging problems not addressed by the FASB or the SEC.
- (h) **GAAP.** Generally accepted accounting principles. A common set of standards, principles, and procedures which have substantial authoritative support and have been accepted as appropriate because of universal application.
- (i) **CPA.** Certified public accountant. An accountant who has fulfilled certain education and experience requirements and passed a rigorous examination. Most CPAs offer auditing, tax, and management consulting services to the general public.
- (j) **FASB.** Financial Accounting Standards Board. The primary body which currently establishes and improves financial accounting and reporting standards for the guidance of issuers, auditors, users, and others.
- (k) **SEC.** Securities and Exchange Commission. An independent regulatory agency of the United States government which administers the Securities Acts of 1933 and 1934 and other acts.

CASE 1-10 (Continued)

- (l) **IASB.** International Accounting Standards Board. An international group, formed in 1973, that is actively developing and issuing accounting standards that will have international appeal and hopefully support.
- (m) **GASB.** Governmental Accounting Standards Board. The primary body that currently establishes accounting and reporting standards for state and local governments.

CASE 1-11

- 1. (d)
- 2. (b), (f)
- 3. (a)
- 4. (c)
- 5. (e), (g)

CASE 1-12

- 1. (d)
- 2. (f)
- 3. (c)
- 4. (e)
- 5. (a)
- 6. (b)

CASE 1-13

- (a) Inclusion or omission of information that materially affects net income harms particular stakeholders. Accountants must recognize that their decision to implement (or delay) reporting requirements will have immediate consequences for some stakeholders.
- (b) Yes. Because the FASB standard results in a fairer representation, it should be implemented as soon as possible—regardless of its impact on net income. SEC Staff Bulletin No. 74 (December 30, 1987) requires a statement as to what the expected impact of the standard will be.
- (c) The accountant's responsibility is to provide financial statements that present fairly the financial condition of the company. By advocating early implementation, Popovich fulfills this task.
- (d) Potential lenders and investors, who read the financial statements and rely on their fair representation of the financial condition of the company, have the most to gain by early implementation. A stockholder who is considering the sale of stock may be harmed by early implementation that lowers net income (and may lower the value of the stock).

CASE 1-14

- (a) The Securities and Exchange Commission (SEC) is an independent federal agency that receives its authority from federal legislation enacted by Congress. The Securities and Exchange Act of 1934 created the SEC.
- (b) As a result of the Securities and Exchange Act of 1934, the SEC has legal authority relative to accounting practices. The U.S. Congress has given the SEC broad regulatory power to control accounting principles and procedures in order to fulfill its goal of full and fair disclosure.

CASE 1-14 (Continued)

- (c) There is no direct relationship as the SEC was created by Congress and the Financial Accounting Standards Board (FASB) was created by the private sector. However, the SEC historically has followed a policy of relying on the private sector to establish financial accounting and reporting standards known as generally accepted accounting principles (GAAP). The SEC does not necessarily agree with all of the pronouncements of the FASB. In cases of unresolved differences, the SEC rules take precedence over FASB rules for companies within SEC jurisdiction.

CASE 1-15

- (a) The process by which a topic is selected or identified as appropriate for study by the Financial Accounting Standards Board (FASB) is described below.

- Problems or issues come to the attention of the FASB from
 - the Emerging Issues Task Force which may identify significant emerging accounting issues that it feels the FASB should address.
 - the Financial Accounting Standards Advisory Council which addresses the FASB on the priority of problems and encourages the FASB to undertake new projects.
 - the Research and Technical Activities Staff of the FASB, which monitors business periodicals for stories concerning unusual transactions or events and may detect an emerging problem.
 - the close contact it maintains with various business, industry, government, professional financial groups, and the SEC.
 - its staff which may learn of emerging problems as it responds to technical inquiries received from preparers and auditors.
- Topics are then placed on the FASB agenda.
- The plan for major technical agenda projects is given prompt public notice in the FASB's newsletter "Status Report."
- A task force of experts from various sectors is assembled to define problems, issues, and alternatives related to the topic.
- The task force inputs are submitted to the FASB's Technical Activities Division for research and analysis.

- (b) Once a topic is considered appropriate for consideration by the FASB, major steps in the process leading to the issuance of a **Statement of Financial Accounting Standards** include the following:

- Research and analysis is conducted by the FASB Technical Staff.
- A discussion memorandum is drafted and released for written comments.
- Written comments are submitted and a public hearing is held approximately 60 days after the memorandum is released.
- The Board analyzes and evaluates the public responses.

CASE 1-15 (Continued)

- The Board deliberates on the issues and prepares an exposure draft which is released for public comment.
 - After a 30-day (minimum) exposure period and possible public hearings from industry groups, the Board evaluates all comments received.
 - A committee studies the exposure draft in relation to the public responses, reevaluates its position, and revises the draft if necessary.
 - The full Board gives the revised final draft consideration and votes on the issuance of a **Standards Statement**.
- (c) At least three other organizations who can influence the setting of generally accepted accounting principles include the
- American Institute of Certified Public Accountants.
 - Securities and Exchange Commission.
 - Financial Executives Institute.

CASE 1-16

Before the turn of this century, because most businesses were privately owned, the need for accurate financial statements was limited. Financial reports were used to help a company analyze its profitability and to allow lending institutions such as banks to determine whether or not the company was worthy of credit. Early in the twentieth century, the institution of income tax as well as the increasing number of large corporations created greater reasons for companies to report their financial positions more carefully.

The stock market crash of 1929 further convinced the federal government as well as the accounting profession of the need to develop generally accepted standards by which all financial statements could be prepared. In an attempt to address this problem, the American Institute of Certified Public Accountants first created the Committee on Accounting Procedures (CAP). Taking a problem-by-problem approach to creating standards, CAP issued 51 **Accounting Research Bulletins** before the AICPA decided to abandon it and establish the Accounting Principles Board (APB).

Created in 1959, the APB attempted to provide a more well-defined, structured approach to the development of financial accounting principles. Its purpose was to develop written accounting principles which would determine practice by narrowing any existing inconsistencies in practice. The Board had 18 to 21 members and issued 31 **APB Opinions** before it was disbanded in 1973. Unfortunately, it received much opposition from industry, CPA firms, and the government.

In 1973, the Financial Accounting Standards Board (FASB) was created to replace the APB. This Board has enjoyed a great deal of success, owing to its structure. First, the board has only seven members, allowing it to achieve consensus more easily than its predecessor. Second, unlike the APB, the FASB considers membership a full-time job, so its members are more likely to devote the time necessary to deal with tough, ongoing accounting problems. Third, the FASB is independent of the AICPA. Fourth, because members cannot work for private entities, they are more independent and will thus not allow problems associated with certain industries to skew their decisions. Finally, the FASB membership is not limited to CPAs, giving it a broader perspective on important issues.

CASE 1-16 (Continued)

Since its inception, the FASB has issued over 140 Statements of Financial Accounting Standards which establish GAAP. In addition, it has also issued a series of Statements of Financial Accounting Concepts whose purpose is to create a conceptual framework that will enable the profession to address future accounting problems.

Still going strong, the FASB continues to be the United States' standards setter in the world of public accounting. With hope, its present success will accompany it through the turn of the century, as it determines accounting policy for the ever-changing, ever-challenging business environment.

CASE 1-17

- a. Considering the economic consequences of many accounting standards, it is not surprising that special interest groups become vocal and critical (some supporting, some opposing) when standards are being formulated. The FASB's derivative accounting standard is no exception. Many from the banking industry, for example, criticized the standard as too complex and leading to unnecessary earnings volatility. They also indicated that the proposal may discourage prudent risk management activities and in some cases could present misleading financial information.

As a result, Congress is often approached to put pressure on the FASB to change its rulings. In the stock option controversy, industry was quite effective in going to Congress to force the FASB to change its conclusions. In the derivative controversy, Rep. Richard Baker introduced a bill which would force the SEC to formally approve each standard issued by the FASB. Not only would this process delay adoption, but could lead to additional politicalization of the standards-setting process. Dingell commented that Congress should stay out of the standards-setting process and defended the FASB's approach to establishing generally accepted accounting standards.

- b. Attempting to set standards by a political process will probably lead to the following consequences:
- (a) Too many alternatives.
 - (b) Lack of clarity that will lead to inconsistent application.
 - (c) Lack of disclosure that reduces transparency.
 - (d) Not comprehensive in scope.

Without an independent process, standards will be based on political compromise. A classic illustration is what happened in the savings and loan industry. Applying generally accepted accounting principles to the S&L industry would have forced regulators to restrict activities of many S&Ls. Unfortunately, accounting principles were overridden by regulatory rules and the resulting lack of transparency masked the problems. William Siedman, former FDIC Chairman noted later that it was "the worst mistake in the history of government."

Another indication of the problem of government intervention is shown in the accounting standards used by many countries around the world. Completeness and transparency of information needed by investors and creditors is not available in order to meet or achieve other objectives.

CASE 1-18

- (a) The "due process" system involves the following:
- (1) Identifying topics and placing them on the Board's agenda.
 - (2) Research and analysis is conducted and discussion memorandum of pros and cons issued.
 - (3) A public hearing is often held.
 - (4) Board evaluates research and public responses and issues exposure draft.
 - (5) Board evaluates responses and changes exposure draft, if necessary. Final statement is then issued.

CASE 1-18 (Continued)

- (b) Economic consequences mean the impact of accounting reports on the wealth positions of issuers and users of financial information and the decision-making behavior resulting from that impact.
- (c) Economic consequences indicated in the letter are: (1) concerns related to the potential impact on the capital markets, the weakening of companies' ability to manage risk, and the adverse control implications of implementing costly and complex new rules imposed at the same time as other major initiatives, including the Year 2000 issues and a single European currency.
- (d) The principal point of this letter is to delay the finalization of the derivatives standard. As indicated in the letter, the authors of this letter urge the FASB to expose its new proposal for public comment, following the established due process procedures that are essential to acceptance of its standards and providing sufficient time for affected parties to understand and assess the new approach. (Authors note: The FASB indicated in a follow-up letter that all due process procedures had been followed and all affected parties had more than ample time to comment. In addition, the FASB issued a follow-up standard, which delayed the effective date of the standard, in part to give companies more time to develop the information systems needed for implementation of the standard.)
- (e) The reason why the letter was sent to Congress was to put additional pressure on the FASB to delay or drop the issuance of a standard on derivatives. Unfortunately, in too many cases, when the business community does not like the answer proposed by the FASB, it resorts to lobbying members of Congress. The lobbying efforts usually involve developing some type of legislation that will negate the standard. In some cases, efforts involve challenging the FASB's authority to develop rules in certain areas with additional Congressional oversight.

FINANCIAL REPORTING PROBLEM

(a) The key organizations involved in standard setting in the U.S. are the AICPA, FASB, and SEC. See also (c).

(b) Different authoritative literature pertaining to methods recording accounting transactions exists today. Some authoritative literature has received more support from the profession than other literature. The literature that has substantial authoritative support is the one most supported by the profession and should be followed when recording accounting transactions. These standards and procedures are called generally accepted accounting principles (GAAP). There are three different levels, and the first level is the one with the most authoritative support. It consists of FASB Standards and Interpretations, APB Opinions and Interpretations, and CAP Accounting Research Bulletins. The second level consists of AICPA Accounting and Auditing Guides, AICPA Statements of Position, and FASB Technical Bulletins. The third level consists of AICPA Issues Papers and Practice Bulletins, FASB Concepts Statements, and other authoritative pronouncements.

Note that a level between the second and the third level is also sometimes identified which consists of practices or pronouncements that are widely recognized as being generally accepted because they represent prevalent practice in a particular industry or the knowledgeable application to specific circumstances of pronouncements that are generally accepted.

(c) Standards setting in the U.S. has evolved through the work of the following organizations:

1. American Institute of Certified Public Accountants (AICPA)—it is the national professional organization of practicing Certified Public

FINANCIAL REPORTING PROBLEM (Continued)

Accountants (CPAs). Outgrowths of the AICPA have been the Committee on Accounting Procedure (CAP) which issued Accounting Research Bulletins and the Accounting Principles Board (APB) whose major purposes were to advance written expression of accounting principles, determine appropriate practices, and narrow the areas of difference and inconsistency in practice.

2. Financial Accounting Standards Board (FASB)—the mission of the FASB is to establish and improve standards of financial accounting and reporting for the guidance and education of the public, which includes issuers, auditors, and users of the financial information.

3. Securities and Exchange Commission (SEC)—the SEC is an independent regulatory agency of the United States government which administers the Securities Act of 1933, the Securities Exchange Act of 1934, and several other acts. The SEC has broad power to prescribe the accounting practices and standards to be employed by companies that fall within its jurisdiction.

(d) The SEC and the AICPA have been the authority for compliance with GAAP. The SEC has indicated that financial statements conforming to standards set by the FASB will be presumed to have authoritative support. The AICPA, in Rule 203 of the Code of Professional Ethics, requires that members prepare financial statements in accordance with GAAP. Failure to follow Rule 203 can lead to the loss of a CPA's license to practice.

INTERNATIONAL REPORTING PROBLEM

(Note to instructor: The answer to this question is very complete. Students will not be able to answer it as completely unless they are required to do additional research. The answer should provide material for additional discussion in class. Instructors may wish to direct students to the international discussion on the *Take-Action!CD*.)

- (a) Eliminating significant differences in international accounting and reporting practices to result in more useful information for international investors is the goal of current standards-setting efforts. The major bodies involved in the United States are the FASB and the SEC. In the international arena, two parties of considerable power are the International Accounting Standards Board (IASB) and the International Organization of Securities Commissions (IOSCO). We describe these two major international groups next.

IASB

The International Accounting Standards Board is an independent, privately funded accounting standards setter based in London, UK. Board Members come from nine countries and have a variety of functional backgrounds. The Board is committed to developing, in the public interest, a single set of high quality, understandable and enforceable global accounting standards that require transparent and comparable information in general purpose financial statements. In addition, the Board cooperates with national accounting standards setters to achieve convergence in accounting standards around the world.

The IASB replaces the International Accounting Standards Committee (IASC), which developed standards through 2000. The IASC, newly restructured, therefore is no longer involved directly in the development of standards. The new IASC provides oversight (selecting members for the IASB, helping with funding, and developing overall policy).

INTERNATIONAL REPORTING PROBLEM (Continued)

Restructuring of the IASC

Ed Jenkins, chair of the FASB, recently noted: “We have reached a historic milestone for the future of financial reporting that will benefit investors around the world. The FASB is pleased that the IASC—a standards setting organization based in London—has accepted the recommendations of its Strategy Working Party to restructure the IASC. When it is in place, the proposed restructuring would provide an independent, objective international standards setter whose standards could meet the needs of the global capital markets.”

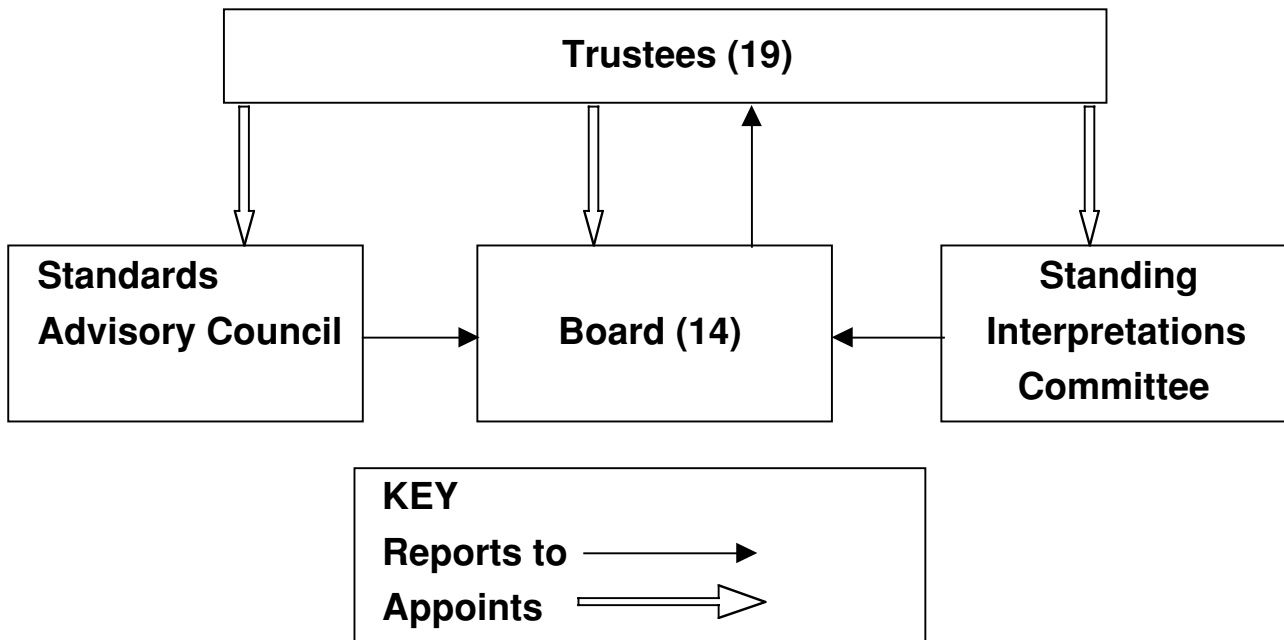
The new structure is very similar in nature to the way the present FASB works. It remains to be seen whether the IASB will issue standards of high quality. The IASB’s objectives specified in the report on restructuring are:

- 1. to develop in the public interest, a single set of high quality, understandable and enforceable global accounting standards that require high quality, transparent and comparable information in financial statements to help participants in the world’s capital markets make sound economic decisions;**
- 2. to promote the use and rigorous application of these standards; and**
- 3. to bring about convergence of national accounting standards and International Accounting Standards to high quality solutions.**

The IASB is established as an independent organization such as a foundation; it has two main bodies, the Trustees and the Board, as well as a Standing Interpretations Committee and Standards Advisory Coun-

INTERNATIONAL REPORTING PROBLEM (Continued)

cil. The trustees appoint the Board members, exercise oversight, and raise funds, whereas the Board has sole responsibility for setting accounting standards. Hopefully this new structure will work and successfully accomplish the objectives established by the IASB. A diagram of the structure is shown below.



Because it is a private organization, the IASB has no regulatory mandate and, therefore, no enforcement mechanism in place. In other words, unlike the U.S. setting, there is no SEC to enforce the use of IASB standards. Their use is completely voluntary.

IOSCO

IOSCO stands for International Organization of Securities Commissions. This organization is dedicated to ensuring that the global markets will be able to operate in an efficient and effective basis.

INTERNATIONAL REPORTING PROBLEM (Continued)

IOSCO comprises securities regulators who are cooperating to accomplish this objective. The SEC, for example, is a member of IOSCO.

(b) In summary, the following groups might gain most from harmonization of financial reporting:

- Investors, investment analysts and stockbrokers: to facilitate international comparisons for investment decisions.**
- Credit grantors: for similar reasons to bullet point above.**
- Multinational companies: as preparers, investors, appraisers of products or staff, and as movers of staff around the globe; also, as raisers of finance on international markets (this also applies to some companies that are not multinationals).**
- Governments: as tax collectors and hosts of multinationals; also interested are securities markets regulators and governmental and nongovernmental rule makers.**

(c) The fundamental argument against harmonization is that, to the extent that international differences in accounting practices result from underlying economic, legal, social, and other environmental factors, harmonization may not be justified. Different accounting has grown up to serve the different needs of different users; this might suggest that the existing accounting practice is "correct" for a given nation and should not be changed merely to simplify the work of multinational companies or auditors. There does seem to be strength in this point particularly for smaller companies with no significant multinational activities or connections. To foist upon a small private family company in Luxembourg lavish disclosure requirements and the need to report a "true and fair" view may be an expensive and unnecessary piece of harmonization.

INTERNATIONAL REPORTING PROBLEM (Continued)

The most obvious obstacle to harmonization is the sheer size and deep-rootedness of the differences in accounting. These differences have grown up over the previous century because of differences in users, legal systems, and so on. Thus, the differences are structural rather than cosmetic, and require revolutionary action to remove them.

Another facet of this is that professional bodies are strong in certain countries such as the U.S. and U.K., but weak in other countries such as Italy, Japan, and Switzerland. This means that it is difficult for professional bodies directly to achieve international harmonization throughout the developed western world. Thus, although the professional bodies may be able to make some progress, government intervention would be necessary for a wider harmonization. This brings us to a consideration of the obstacle of nationalism, which may show itself in an unwillingness to accept compromises which involve changing accounting practices towards those of other countries. This unwillingness may be on the part of accountants and companies or on the part of states who may not wish to lose their sovereignty. Another manifestation of nationalism may be the lack of knowledge of or interest in accounting elsewhere. A rather more subtle and acceptable variety of this is the concern that it would be difficult to alter internationally set standards in response to a change of mind or a change of circumstances.

PROFESSIONAL SIMULATION

- (a) The term "accounting principles" in the auditor's report includes not only accounting principles but also the practices and the methods of applying them. Although the term quite naturally emphasizes the primary or fundamental character of some principles, it includes general rules adopted or professed as guides to action in practice. The term does not connote, however, rules from which there can be no deviation. In some cases the question is which of several partially relevant principles has determining applicability. Neither is the term "accounting principles" necessarily synonymous with accounting theory. Accounting theory is the broad area of inquiry devoted to the definition of objectives to be served by accounting, the development and elaboration of relevant concepts, the promotion of consistency through logic, the elimination of faulty reasoning, and the evaluation of accounting practice.
- (b) Generally accepted accounting principles are those principles (whether or not they have only limited usage) that have substantial authoritative support. Whether a given principle has authoritative support is a question of fact and a matter of judgment. The CPA is responsible for collecting the available evidence of authoritative support and judging whether it is sufficient to bring the practice within the bounds of generally accepted accounting principles.

Opinions of the Accounting Principles Board, pronouncements of the American Institute of CPAs, statements of the Financial Accounting Standards Board, and releases of the Securities and Exchange Commission (if there are any on the subject in question) would be given greater weight than other single sources. Opinions of the Accounting Principles Board and statements and interpretations of the FASB constitute substantial authoritative support, and the evidence would tend to be conclusive if the Securities and Exchange Commission has issued an affirmative opinion on the same subject. However, substantial authoritative support also can exist for accounting principles that differ from those recommended in the opinions of the Accounting Principles Board or statements of the Financial Accounting Standards Board.

Other support for generally accepted accounting principles can come from AICPA Accounting and Auditing Guides, AICPA Statements of Position, and FASB Technical Bulletins (Level Two). In addition, AICPA Practice Bulletins and FASB Emerging Issues Task Force Statements are identified as Level Three type documents.

Note that other evidence of authoritative support may be found in the published opinions of the committees of the American Accounting Association and the affirmative opinions of practitioners and academicians in articles, textbooks, and expert testimony. Similarly, the views of stock exchanges, commercial and investment bankers, and regulatory commissions influence the general acceptance of accounting principles and, hence, are considered in determining whether an accounting principle has substantial authoritative support. Business practice also is a source of evidence. Finally, because they influence business practice, the tax code and state laws are sources of evidence too.

CHAPTER 2

Conceptual Framework Underlying Financial Accounting

ASSIGNMENT CLASSIFICATION TABLE

Topics	Questions	Brief Exercises	Exercises	Cases
1. Conceptual framework—general.	1, 21			1, 2
2. Objectives of financial reporting.	2, 5			3
3. Qualitative characteristics of accounting.	3, 4, 6, 24	1, 2	1, 2	4
4. Elements of financial statements.	7, 8, 9	3, 9, 10	3	
5. Basic assumptions.	10, 11, 12	4	4, 5	
6. Basic principles:				
a. Historical cost.	13, 14, 15	5	4, 5	5, 6
b. Revenue recognition.	16, 17, 18		5	
c. Expense matching.	19		4, 5	5, 6, 7, 8, 9, 10, 11
d. Full disclosure.	20, 21, 22		4, 5, 6	
7. Accounting principles—comprehensive.			7, 8	
8. Constraints.	23, 24, 25, 26	6, 7	1	
9. Comprehensive assignments on assumptions, principles, and constraints.		8	4, 5	

ASSIGNMENT CHARACTERISTICS TABLE

Item	Description	Level of Difficulty	Time (minutes)
E2-1	Qualitative characteristics.	Moderate	25-30
E2-2	Qualitative characteristics.	Simple	15-20
E2-3	Elements of financial statements.	Simple	15-20
E2-4	Assumptions, principles, and constraints.	Simple	15-20
E2-5	Assumptions, principles, and constraints.	Moderate	20-25
E2-6	Full disclosure principle.	Complex	20-25
E2-7	Accounting principles—comprehensive.	Moderate	20-25
E2-8	Accounting principles—comprehensive.	Moderate	20-25
C2-1	Conceptual framework—general.	Simple	20-25
C2-2	Conceptual framework—general.	Simple	25-35
C2-3	Objectives of financial reporting.	Moderate	25-35
C2-4	Qualitative characteristics.	Moderate	30-35
C2-5	Revenue recognition and matching principle.	Complex	25-30
C2-6	Revenue recognition and matching principle.	Moderate	30-35
C2-7	Matching principle.	Complex	20-25
C2-8	Matching principle.	Moderate	20-25
C2-9	Matching principle.	Moderate	20-30
C2-10	Qualitative characteristics.	Moderate	20-30
C2-11	Matching—ethics	Moderate	20-25

ANSWERS TO QUESTIONS

1. A conceptual framework is a coherent system of interrelated objectives and fundamentals that can lead to consistent standards and that prescribes the nature, function, and limits of financial accounting and financial statements. A conceptual framework is necessary in financial accounting for the following reasons:
 1. It will enable the FASB to issue more useful and consistent standards in the future.
 2. New issues will be more quickly soluble by reference to an existing framework of basic theory.
 3. It will increase financial statement users' understanding of and confidence in financial reporting.
 4. It will enhance comparability among companies' financial statements.
2. The primary objectives of financial reporting are as follows:
 1. Provide information useful in investment and credit decisions for individuals who have a reasonable understanding of business.
 2. Provide information useful in assessing future cash flows.
 3. Provide information about enterprise resources, claims to these resources, and changes in them.
3. "Qualitative characteristics of accounting information" are those characteristics which contribute to the quality or value of the information. The overriding qualitative characteristic of accounting information is usefulness for decision making.
4. Relevance and reliability are the two primary qualities of useful accounting information. For information to be relevant, it should have predictive value or feedback value, and it must be presented on a timely basis. Relevant information has a bearing on a decision and is capable of making a difference in the decision. Relevant information helps users to make predictions about the outcomes of past, present, and future events, or to confirm or correct prior expectations. Reliable information can be depended upon to represent the conditions and events that it is intended to represent. Reliability stems from representational faithfulness, neutrality, and verifiability.
5. In providing information to users of financial statements, the accounting profession relies on general-purpose financial statements. The intent of such statements is to provide the most useful information possible at minimal cost to various user groups. Underlying these objectives is the notion that users need reasonable knowledge of business and financial accounting matters to understand the information contained in financial statements. This point is important: it means that in the preparation of financial statements a level of reasonable competence can be assumed; this has an impact on the way and the extent to which information is reported.
6. Comparability facilitates comparisons between information about two different enterprises at a particular point in time. Consistency facilitates comparisons between information about the same enterprise at two different points in time.
7. At present, the accounting literature contains many terms that have peculiar and specific meanings. Some of these terms have been in use for a long period of time, and their meanings have changed over time. Since the elements of financial statements are the building blocks with which the statements are constructed, it is necessary to develop a basic definitional framework for them.
8. Distributions to owners differ from expenses and losses in that they represent transfers to owners, and they do not arise from activities intended to produce income. Expenses differ from losses in that they arise from the entity's ongoing major or central operations. Losses arise from peripheral or incidental transactions.

Questions Chapter 2 (Continued)

9. Investments by owners differ from revenues and gains in that they represent transfers by owners to the entity, and they do not arise from activities intended to produce income. Revenues differ from gains in that they arise from the entity's ongoing major or central operations. Gains arise from peripheral or incidental transactions.
10. The four basic assumptions that underlie the financial accounting structure are:
1. An economic entity assumption.
 2. A going concern assumption.
 3. A monetary unit assumption.
 4. A periodicity assumption.
11. (a) In accounting it is generally agreed that any measures of the success of an enterprise for periods less than its total life are at best provisional in nature and subject to correction. Measurement of progress and status for arbitrary time periods is a practical necessity to serve those who must make decisions. It is not the result of postulating specific time periods as measurable segments of total life.
- (b) The practice of periodic measurement has led to many of the most difficult accounting problems such as inventory pricing, depreciation of long-term assets, and the necessity for revenue recognition tests. The accrual system calls for associating related revenues and expenses. This becomes very difficult for an arbitrary time period with incomplete transactions in process at both the beginning and the end of the period. A number of accounting practices such as adjusting entries or the reporting of corrections of prior periods result directly from efforts to make each period's calculations as accurate as possible and yet recognizing that they are only provisional in nature.
12. The monetary unit assumption assumes that the unit of measure (the dollar) remains reasonably stable so that dollars of different years can be added without any adjustment. When the value of the dollar fluctuates greatly over time, the monetary unit assumption loses its validity.

The FASB in **Concept No. 5** indicated that it expects the dollar unadjusted for inflation or deflation to be used to measure items recognized in financial statements. Only if circumstances change dramatically will the Board consider a more stable measurement unit.

13. Some of the arguments which might be used are outlined below:
1. Cost is definite and reliable; other values would have to be determined somewhat arbitrarily and there would be considerable disagreement as to the amounts to be used.
 2. Amounts determined by other bases would have to be revised frequently.
 3. Comparison with other companies is aided if cost is employed.
 4. The costs of obtaining replacement values could outweigh the benefits derived.
14. Revenue is generally recognized when (1) realized or realizable, and (2) earned.

The adoption of the sale basis is the accountant's practical solution to the extremely difficult problem of measuring revenue under conditions of uncertainty as to the future. The revenue is equal to the amount of cash that will be received due to the operations of the current accounting period, but this amount will not be definitely known until such cash is collected. The accountant, under these circumstances, insists on having "objective evidence," that is, evidence external to the firm itself, on which to base an estimate of the amount of cash that will be received. The sale is considered to be the earliest point at which this evidence is available in the usual case. Until the sale is made, any estimate of the value of inventory is based entirely on the opinion of the management of the firm. When the sale is made, however, an outsider, the buyer, has corroborated the estimate of management and a value can now be assigned based on this transaction. The sale also leads to a valid claim against the buyer and gives the seller the full sup-

Questions Chapter 2 (Continued)

port of the law in enforcing collection. In a highly developed economy where the probability of collection is high, this gives additional weight to the sale in the determination of the amount to be collected. Ordinarily there is a transfer of control as well as title at the sales point. This not only serves as additional objective evidence but necessitates the recognition of a change in the nature of assets. Usually the change is for an amount which differs from the costs assigned to the item being sold. The sale, then, has been adopted because it provides the accountant with objective evidence as to the amount of revenue that will be collected, subject of course to the bad debts estimated to determine ultimate collectibility.

15. Revenues should be recognized when they are realized or realizable and earned. The most common time at which these two conditions are met is when the product or merchandise is delivered or services are rendered to customers. Therefore, revenue for Magnus Eatery should be recognized at the time the luncheon is served.
16. Revenues are realized when products (goods or services), merchandise, or other assets are exchanged for cash or claims to cash. Revenues are realizable when related assets received or held are readily convertible to known amounts of cash or claims to cash. Readily convertible assets have (1) interchangeable (fungible) units and (2) quoted prices available in an active market that can rapidly absorb the quantity held by the entity without significantly affecting the price.
17. Each deviation depends on either the existence of earlier objective evidence other than the sale or insufficient evidence of sale. Objective evidence is the key.
 - (a) In the case of installment sales the probability of uncollectibility may be great due to the nature of the collection terms. The sale itself, therefore, does not give an accurate basis on which to estimate the amount of cash that will be collected. It is necessary to adopt a basis which will give a reasonably accurate estimate. The installment sales method is a modified cash basis; income is recognized as cash is collected. A cash basis is preferable when no earlier estimate of revenue is sufficiently accurate.
 - (b) The opposite is true in the case of certain agricultural products. Since there is a ready buyer and a quoted price, a sale is not necessary to establish the amount of revenue to be received. In fact, the sale is an insignificant part of the whole operation. As soon as it is harvested, the crop can be valued at its selling price less the cost of transportation to the market and this valuation gives an extremely accurate measure of the amount of revenue for the period without the need of waiting until the sale has been made to measure it. In other words, the sale proceeds are readily realizable and earned, so revenue recognition should occur.
 - (c) In the case of long-term contracts, the use of the "sales basis" would result in a distortion of the periodic income figures. A shift to a "percentage of completion basis" is warranted if objective evidence of the amount of revenue earned in the periods prior to completion is available. The accountant finds such evidence in the existence of a firm contract, from which the ultimate realization can be determined, and estimates of total cost which can be compared with cost incurred to estimate percentage-of-completion for revenue measurement purposes. In general, when estimates of costs to complete and extent of progress toward completion of long-term contracts are reasonably dependable, the percentage-of-completion method is preferable to the completed-contract method.
18. The president means that the "gain" should be recorded in the books. This item should not be entered in the accounts, however, because it has not been realized.
19. The cause and effect relationship can seldom be conclusively demonstrated, but many costs appear to be related to particular revenues and recognizing them as expenses accompanies recognition of the revenue. Examples of expenses that are recognized by associating cause and effect are sales commissions and cost of products sold or services provided.

Questions Chapter 2 (Continued)

Systematic and rational allocation means that in the absence of a direct means of associating cause and effect, and where the asset provides benefits for several periods, its cost should be allocated to the periods in a systematic and rational manner. Examples of expenses that are recognized in a systematic and rational manner are depreciation of plant assets, amortization of intangible assets, and allocation of rent and insurance.

Some costs are immediately expensed because the costs have no discernible future benefits or the allocation among several accounting periods is not considered to serve any useful purpose. Examples include officers' salaries, most selling costs, amounts paid to settle lawsuits, and costs of resources used in unsuccessful efforts.

20. The four characteristics are:
 1. Definitions—The item meets the definition of an element of financial statements.
 2. Measurability—It has a relevant attribute measurable with sufficient reliability.
 3. Relevance—The information is capable of making a difference in user decisions.
 4. Reliability—The information is representationally faithful, verifiable, and neutral.
21. (a) To be recognized in the main body of financial statements, an item must meet the definition of an element. In addition the item must have been measured, recorded in the books, and passed through the double-entry system of accounting.
(b) Information provided in the notes to the financial statements amplifies or explains the items presented in the main body of the statements and is essential to an understanding of the performance and position of the enterprise. Information in the notes does not have to be quantifiable, nor does it need to qualify as an element.
(c) Supplementary information includes information that presents a different perspective from that adopted in the financial statements. It also includes management's explanation of the financial information and a discussion of the significance of that information.
22. The general guide followed with regard to the full disclosure principle is to disclose in the financial statements any facts of sufficient importance to influence the judgment of an informed reader. The fact that the amount of outstanding common stock doubled in January of the subsequent reporting period probably should be disclosed because such a situation is of importance to present stockholders. Even though the event occurred after December 31, 2004, it should be disclosed on the balance sheet as of December 31, 2004, in order to make adequate disclosure. (The major point that should be emphasized throughout the entire discussion on full disclosure is that there is normally no "black" or "white" but varying shades of grey and it takes experience and good judgment to arrive at an appropriate answer.)
23. Accounting information is subject to two constraints: cost/benefit considerations, and materiality. Information is not worth providing unless the benefits it provides exceed the costs of preparing it. Information that is immaterial is irrelevant, and consequently, not useful. If its inclusion or omission would have no impact on a decision maker, the information is immaterial.
24. The costs of providing accounting information are paid primarily to highly trained accountants who design and implement information systems, retrieve and analyze large amounts of data, prepare financial statements in accordance with authoritative pronouncements, and audit the information presented. These activities are time-consuming and costly. The benefits of providing accounting information are experienced by society in general, since informed financial decisions help allocate scarce resources to the most effective enterprises. Occasionally new accounting standards require presentation of information that is not readily assembled by the accounting systems of most companies. A determination should be made as to whether the incremental or additional costs of providing the proposed information exceed the incremental benefits to be obtained. This determination requires careful judgment since the benefits of the proposed information may not be readily apparent.

Questions Chapter 2 (Continued)

25. The concept of materiality refers to the relative significance of an amount, activity, or item to informative disclosure and a proper presentation of financial position and the results of operations. Materiality has qualitative and quantitative aspects; both the nature of the item and its relative size enter into its evaluation.

An accounting misstatement is said to be material if knowledge of the misstatement will affect the decisions of the average informed reader of the financial statements. Financial statements are misleading if they omit a material fact or include so many immaterial matters as to be confusing. In the examination, the auditor concentrates efforts in proportion to degrees of materiality and relative risk and disregards immaterial items.

The relevant criteria for assessing materiality will depend upon the circumstances and the nature of the item and will vary greatly among companies. For example, an error in current assets or current liabilities will be more important for a company with a flow of funds problem than for one with adequate working capital.

The effect upon net income (or earnings per share) is the most commonly used measure of materiality. This reflects the prime importance attached to net income by investors and other users of the statements. The effects upon assets and equities are also important as are misstatements of individual accounts and subtotals included in the financial statements. The auditor will note the effects of misstatements on key ratios such as gross profit, the current ratio, or the debt/equity ratio and will consider such special circumstances as the effects on debt agreement covenants and the legality of dividend payments.

There are no rigid standards or guidelines for assessing materiality. The lower bound of materiality has been variously estimated at 5% to 20% of net income, but the determination will vary based upon the individual case and might not fall within these limits. Certain items, such as a questionable loan to a company officer, may be considered material even when minor amounts are involved. In contrast a large misclassification among expense accounts may not be deemed material if there is no misstatement of net income.

26. (a) To the extent that warranty costs can be estimated accurately, they should be matched against the related sales revenue. Acceptable if reasonably accurate estimation is possible.
- (b) Not acceptable. Most accounts are collectible or the company will be out of business very soon. Hence sales can be recorded when made. Also, other companies record sales when made rather than when collected, so if accounts for Joan Osborne Co. are to be compared with other companies, they must be kept on a comparable basis. However, estimates for uncollectible accounts should be recorded if there is a reasonably accurate basis for estimating bad debts.
- (c) Not acceptable. A provision for the possible loss can be made through an appropriation of retained earnings but until judgment has been rendered on the suit or it is otherwise settled, entry of the loss usually represents anticipation. Recording it earlier is probably unwise legal strategy as well. For the loss to be recognized at this point, the loss would have to be probable and reasonably estimable. (See FASB No. 5 for additional discussion if desired.) Note disclosure is required if the loss is not recorded.
- (d) Acceptable because lower of cost or market is in accordance with generally accepted accounting principles.

SOLUTIONS TO BRIEF EXERCISES

BRIEF EXERCISE 2-1

- (a) If the company changed its method of computing depreciation from the straight-line method to an accelerated depreciation method, the consistency, and therefore the comparability, of the financial statements have been affected by a change in the method of applying the accounting principles employed. The change would require comment in the auditor's report in an explanatory paragraph.**
- (b) If the company disposed of one of its two subsidiaries that had been included in its consolidated statements for prior years, no comment as to consistency need be made in the CPA's audit report. The comparability of the financial statements has been affected by a business transaction, but there has been no change in any accounting principle employed or in the method of its application. (The transaction would probably require informative disclosure in the financial statements.)**
- (c) If the company reduced the estimated remaining useful life of plant property because of obsolescence, the comparability of the financial statements has been affected. The change is not a matter of consistency; it is a change in accounting estimate required by altered conditions and involves no change in accounting principles employed or in their method of application. The change would probably be disclosed by a note in the financial statements; if commented upon in the CPA's report, it would be as a matter of disclosure rather than consistency.**

BRIEF EXERCISE 2-1 (Continued)

- (d) If the company is using a different inventory valuation method from all other companies in its industry, no comment as to consistency need be made in the CPA's audit report. Consistency refers to a given company following consistent accounting principles from one period to another; it does not refer to a company following the same accounting principles as other companies in the same industry.

BRIEF EXERCISE 2-2

- 1. Verifiability**
- 2. Comparability**
- 3. Consistency**
- 4. Timeliness**

BRIEF EXERCISE 2-3

- (a) Equity**
- (b) Revenues**
- (c) Equity**
- (d) Assets**
- (e) Expenses**
- (f) Losses**
- (g) Liabilities**
- (h) Distributions to owners**
- (i) Gains**
- (j) Investments by owners**

BRIEF EXERCISE 2-4

- (a) Periodicity**
- (b) Monetary unit**
- (c) Going concern**
- (d) Economic entity**

BRIEF EXERCISE 2-5

- (a) Revenue recognition**
- (b) Matching**
- (c) Full disclosure**
- (d) Historical cost**

BRIEF EXERCISE 2-6

- (a) Industry practices**
- (b) Conservatism**
- (c) Cost-benefit relationship**
- (d) Materiality**

BRIEF EXERCISE 2-7

Companies and their auditors for the most part have adopted the general rule of thumb that anything under 5% of net income is considered not material. Recently, the SEC has indicated that it is okay to use this percentage for the initial assessment of materiality, but other factors must be considered. For example, companies can no longer fail to record items in order to meet consensus analyst's earnings numbers; preserve a posi-

BRIEF EXERCISE 2-7 (Continued)

tive earnings trend; convert a loss to a profit or vice versa; increase management compensation, or hide an illegal transaction like a bribe. In other words, both quantitative and qualitative factors must be considered in determining when an item is material.

- (a) Because the change was used to create a positive trend in earnings, the change is considered material.**
- (b) Each item must be considered separately and not netted. Therefore each transaction is considered material.**
- (c) In general, companies that follow an “expense all capital items below a certain amount” policy are not in violation of the materiality concept. Because the same practice is followed from year to year, and the amounts are small, it is unlikely that the aggregate of these amounts would be material.**

BRIEF EXERCISE 2-8

- (a) Net realizable value.**
- (b) Would not be disclosed. Liabilities would be disclosed in the order to be paid.**
- (c) Would not be disclosed. Depreciation would be inappropriate if the going concern assumption no longer applies.**
- (d) Net realizable value.**
- (e) Net realizable value (i.e. redeemable value).**

BRIEF EXERCISE 2-9

- (a) Conservatism**
- (b) Full disclosure**
- (c) Matching principle**
- (d) Historical cost**

BRIEF EXERCISE 2-10

- (a) Should be debited to the Land account, as it is a cost incurred in acquiring land.**
- (b) As an asset, preferably to a Land Improvements account. The driveway will last for many years, and therefore it should be capitalized and depreciated.**
- (c) Probably an asset, as it will last for a number of years and therefore will contribute to operations of those years.**
- (d) If the fiscal year ends December 31, this will all be an expense of the current year that can be charged to an expense account. If statements are to be prepared on some date before December 31, part of this cost would be expense and part asset. Depending upon the circumstances, the original entry as well as the adjusting entry for statement purposes should take the statement date into account.**
- (e) Should be debited to the Building account, as it is a part of the cost of that plant asset which will contribute to operations for many years.**
- (f) As an expense, as the service has already been received; the contribution to operations occurred in this period.**

SOLUTIONS TO EXERCISES

EXERCISE 2-1 (20-30 minutes)

- (a) Feedback Value.
- (b) Cost/Benefit and Materiality.
- (c) Neutrality.
- (d) Consistency.
- (e) Neutrality.
- (f) Relevance and Reliability.
- (g) Timeliness.
- (h) Relevance.
- (i) Comparability.
- (j) Verifiability.

EXERCISE 2-2 (15-20 minutes)

- (a) Comparability.
- (b) Feedback Value.
- (c) Consistency.
- (d) Neutrality.
- (e) Verifiability.
- (f) Relevance.
- (g) Comparability and Consistency.
- (h) Reliability.
- (i) Relevance and Reliability.
- (j) Timeliness.

EXERCISE 2-3 (15-20 minutes)

- (a) Gains, losses.
- (b) Liabilities.
- (c) Investment by owners, comprehensive income
(also possible would be revenues and gains).
- (d) Distribution to owners.
(Note to instructor: net effect is to reduce equity and assets).
- (e) Comprehensive income
(also possible would be revenues and gains).
- (f) Assets.

EXERCISE 2-3 (Continued)

- (g) Comprehensive income.**
- (h) Revenues, expenses.**
- (i) Equity.**
- (j) Revenues.**
- (k) Distributions to owners.**
- (l) Comprehensive income.**

EXERCISE 2-4 (15-20 minutes)

- (a) 6. Matching principle.**
- (b) 5. Historical cost principle.**
- (c) 7. Full disclosure principle.**
- (d) 2. Going concern assumption.**
- (e) 11. Conservatism.**
- (f) 1. Economic entity assumption.**
- (g) 4. Periodicity assumption.**
- (h) 10. Industry practices.**
- (i) 9. Materiality.**
- (j) 3. Monetary unit assumption.**

EXERCISE 2-5 (20-25 minutes)

- | | |
|------------------------------------|---------------------------------|
| (a) Historical cost principle. | (j) Full disclosure principle. |
| (b) Conservatism. | (k) Matching principle. |
| (c) Full disclosure principle. | (l) Economic entity assumption. |
| (d) Matching principle. | (m) Periodicity assumption. |
| (e) Materiality. | (n) Matching principle. |
| (f) Industry practices. | (o) Materiality. |
| (g) Economic entity assumption. | (p) Historical cost principle. |
| (h) Full disclosure principle. | (q) Conservatism. |
| (i) Revenue recognition principle. | (r) Matching principle. |

EXERCISE 2-6

- (a) It is well established in accounting that revenues and cost of goods sold must be disclosed in the reporting of an income statement. It might be noted to students that such was not always the case. At one time, only net income was reported but over time we have evolved to the present reporting format.
- (b) The proper accounting for this situation is to report the equipment as an asset and the notes payable as a liability on the balance sheet. Offsetting is permitted in only limited situations where certain assets are contractually committed to pay off liabilities.
- (c) This event need not be disclosed in the financial statements. The amount of monies involved is relatively small in relation to the net income of the business and should not affect the fairness of the presentation of the financial statements.

EXERCISE 2-6 (Continued)

- (d) According to GAAP, the basis upon which inventory amounts are stated (lower of cost or market) and the method used in determining cost (LIFO, FIFO, average cost, etc.) should also be reported. The disclosure requirement related to the method used in determining cost should be emphasized, indicating that where possible alternatives exist in financial reporting, disclosure in some format is required.**

- (e) Consistency requires that disclosure of changes in accounting principles be made in the financial statements. To do otherwise would result in financial statements that are misleading. Financial statements are more useful if they can be compared with similar reports for prior years.**

EXERCISE 2-7

- (a) This entry violates the economic entity assumption. This assumption in accounting indicates that economic activity can be identified with a particular unit of accountability. In this situation, the company erred by charging this cost to the wrong economic entity.**

- (b) The historical cost principle indicates that assets and liabilities are accounted for on the basis of cost. If we were to select sales value, for example, we would have an extremely difficult time in attempting to establish a sales value for a given item without selling it. It should further be noted that the revenue recognition principle provides the answer to when revenue should be recognized. Revenue should be recognized when (1) realized or realizable and (2) earned. In this situation, an earnings process has definitely not taken place.**

EXERCISE 2-7 (Continued)

- (c) Probably the company is too conservative in its accounting for this transaction. The matching principle indicates that expenses should be allocated to the appropriate periods involved. In this case, there appears to be a high uncertainty that the company will have to pay. FASB Statement No. 5 requires that a loss should be accrued only (1) when it is probable that the company would lose the suit and (2) the amount of the loss can be reasonably estimated. (Note to instructor: The student will probably be unfamiliar with FASB Statement No. 5. The purpose of this question is to develop some decision framework when the probability of a future event must be assumed.)**
- (d) At the present time, accountants do not recognize price-level adjustments in the accounts. Hence, it is misleading to deviate from the cost principle because conjecture or opinion can take place. It should also be noted that depreciation is not so much a matter of valuation as it is a means of cost allocation. Assets are not depreciated on the basis of a decline in their fair market value, but are depreciated on the basis of systematic charges of expired costs against revenues. (Note to instructor: It might be called to the students' attention that the FASB does encourage supplemental disclosure of price-level information.)**
- (e) Most accounting methods are based on the assumption that the business enterprise will have a long life. Acceptance of this assumption provides credibility to the historical cost principle, which would be of limited usefulness if liquidation were assumed. Only if we assume some permanence to the enterprise, is the use of depreciation and amortization policies justifiable and appropriate. Therefore, it is incorrect to assume liquidation as Fresh Horses, Inc. has done in this situation. It should be noted that only where liquidation appears imminent is the going concern assumption inapplicable.**

EXERCISE 2-7 (Continued)

- (f) The answer to this question is the same as (b).**

EXERCISE 2-8

- (a) Depreciation is an allocation of cost, not an attempt to value assets. As a consequence, even if the value of the building is increasing, costs related to this building should be matched with revenues on the income statement, not as a charge against retained earnings.**
- (b) A gain should not be recognized until the inventory is sold. Accountants follow the historical cost approach and write-ups of assets are not permitted. It should also be noted that the revenue recognition principle states that revenue should not be recognized until it is realized or realizable and is earned.**
- (c) Assets should be recorded at the fair market value of what is given up or the fair market value of what is received, whichever is more clearly evident. It should be emphasized that it is not a violation of the historical cost principle to use the fair market value of the stock. Recording the asset at the par value of the stock has no conceptual validity. Par value is merely an arbitrary amount usually set at the date of incorporation.**
- (d) The gain should be recognized at the point of sale. Deferral of the gain should not be permitted, as it is realized and is earned. To explore this question at greater length, one might ask what justification other than the controller's might be used to justify the deferral of the gain. For example, the rationale provided in APB Opinion No. 29, noncompletion of the earnings process, might be discussed.**

EXERCISE 2-8 (Continued)

- (e) It appears from the information that the sale should be recorded in 2004 instead of 2003. Regardless of whether the terms are f.o.b. shipping point or f.o.b. destination, the point is that the inventory was sold in 2004. It should be noted that if the company is employing a perpetual inventory system in dollars and quantities, a debit to Cost of Goods Sold and a credit to Inventory is also necessary in 2004.**

TIME AND PURPOSE OF CASES

Case 2-1 (Time 20-25 minutes)

Purpose—to provide the student with the opportunity to comment on the purpose of the conceptual framework. In addition, a discussion of the Concepts Statements issued by the FASB is required.

Case 2-2 (Time 25-35 minutes)

Purpose—to provide the student with the opportunity to identify and discuss the benefits of the conceptual framework. In addition, the most important quality of information must be discussed, as well as other key characteristics of accounting information.

Case 2-3 (Time 25-35 minutes)

Purpose—to provide the student with some familiarity with **Statement of Financial Concepts No. 1**. The student is asked to indicate the broad objectives of accounting, and to discuss how this statement might help to establish accounting standards.

Case 2-4 (Time 30-35 minutes)

Purpose—to provide the student with some familiarity with **Statement of Financial Concepts No. 2**. The student is asked to describe various characteristics of useful accounting information and to identify possible trade-offs among these characteristics.

Case 2-5 (Time 25-30 minutes)

Purpose—to provide the student with the opportunity to indicate and discuss different points at which revenues can be recognized. The student is asked to discuss the “crucial event” that triggers revenue recognition.

Case 2-6 (Time 30-35 minutes)

Purpose—to provide the student with familiarity with an economic concept of income as opposed to the GAAP approach. Also, factors to be considered in determining when net revenue should be recognized are emphasized.

Case 2-7 (Time 20-25 minutes)

Purpose—to provide the student with an opportunity to assess different points to report costs as expenses. Direct cause and effect, indirect cause and effect, and rational and systematic approaches are developed.

Case 2-8 (Time 20-25 minutes)

Purpose—to provide the student with familiarity with the matching principle in accounting. Specific items are then presented to indicate how these items might be reported using the matching principle.

Case 2-9 (Time 20-30 minutes)

Purpose—to provide the student with a realistic case involving association of costs with revenues. The advantages of expensing costs as incurred versus spreading costs are examined. Specific guidance is asked on how allocation over time should be reported.

Case 2-10 (Time 20-30 minutes)

Purpose—to provide the student with the opportunity to discuss the relevance and reliability of financial statement information. The student must write a letter on this matter so the case does provide a good writing exercise for the students.

Case 2-11 (Time 20-25 minutes)

Purpose—to provide the student with the opportunity to discuss the ethical issues related to expense recognition.

SOLUTIONS TO CASES

CASE 2-1

- (a) A conceptual framework is like a constitution. Its objective is to provide a coherent system of interrelated objectives and fundamentals that can lead to consistent standards and that prescribes the nature, function, and limits of financial accounting and financial statements.

A conceptual framework is necessary so that standard setting is useful, i.e., standard setting should build on and relate to an established body of concepts and objectives. A well-developed conceptual framework should enable the FASB to issue more useful and consistent standards in the future.

Specific benefits that may arise are:

1. A coherent set of standards and rules should result.
 2. New and emerging practical problems should be more quickly soluble by reference to an existing framework.
 3. It should increase financial statement users' understanding of and confidence in financial reporting.
 4. It should enhance comparability among companies' financial statements.
 5. It should help determine the bounds for judgment in preparing financial statements.
 6. It should provide guidance to the body responsible for establishing accounting standards.
- (b) The FASB has issued six Statements of Financial Accounting Concepts (SFAC) that relate to business enterprises. Their titles and brief description of the focus of each Statement are as follows:
1. **SFAC No. 1**, "Objectives of Financial Reporting by Business Enterprises," presents the goals and purposes of accounting.
 2. **SFAC No. 2**, "Qualitative Characteristics of Accounting Information," examines the characteristics that make accounting information useful.
 3. **SFAC No. 3**, "Elements of Financial Statements of Business Enterprises," provides definitions of the broad classifications of items found in financial statements.
 4. **SFAC No. 5**, "Recognition and Measurement in Financial Statements," sets forth fundamental recognition criteria and guidance on what information should be formally incorporated into financial statements and when. In addition, this concept statement addresses certain measurement issues that are closely related to recognition.
 5. **SFAC No. 6**, "Elements of Financial Statements," replace **SFAC No. 3**, "Elements of Financial Statements of Business Enterprises," and expands its scope to include not-for-profit organizations.
 6. **SFAC No. 7**, "Using Cash Flow Information and Present Value in Accounting Measurements," provides a framework for using expected future cash flows and present value as a basis for measurement.

CASE 2-2

- (a) FASB's conceptual framework study should provide benefits to the accounting community such as:
1. guiding the FASB in establishing accounting standards on a consistent basis.
 2. determining bounds for judgment in preparing financial statements by prescribing the nature, functions and limits of financial accounting and reporting.
 3. increasing users' understanding of and confidence in financial reporting.

CASE 2-2 (Continued)

- (b) **Statement of Financial Accounting Concepts No. 2** identifies the most important quality for accounting information as usefulness for decision making. Relevance and reliability are the primary qualities leading to this decision usefulness. Usefulness is the most important quality because, without usefulness, there would be no benefits from information to set against its costs.
- (c) The number of key characteristics or qualities that make accounting information desirable are described in the **Statement of Financial Accounting Concepts No. 2**. The importance of three of these characteristics or qualities are discussed below.
1. Understandability—information provided by financial reporting should be comprehensible to those who have a reasonable understanding of business and economic activities and are willing to study the information with reasonable diligence. Financial information is a tool and, like most tools, cannot be of much direct help to those who are unable or unwilling to use it, or who misuse it.
 2. Relevance—the accounting information is capable of making a difference in a decision by helping users to form predictions about the outcomes of past, present, and future events or to confirm or correct expectations.
 3. Reliability—the reliability of a measure rests on the faithfulness with which it represents what it purports to represent, coupled with an assurance for the user, which comes through verification, that it has representational quality.

(Note to instructor: Other qualities might be discussed by the student, such as secondary qualities. All of these qualities are defined in the textbook.)

CASE 2-3

- (a) The basic objectives in **Statement of Financial Accounting Concepts No. 1** are to:
1. provide information useful in investment and credit decisions for individuals who have a reasonable understanding of business.
 2. provide information useful in assessing future cash flows.
 3. provide information about economic resources, claims to those resources, and changes in them.
- (b) The purpose of this statement is to set forth fundamentals on which financial accounting and reporting standards may be based. Without some basic set of objectives that everyone can agree to, inconsistent standards will be developed. For example, some believe that accountability should be the primary objective of financial reporting. Others argue that prediction of future cash flows is more important. It follows that individuals who believe that accountability is the primary objective may arrive at different financial reporting standards than others who argue for prediction of cash flow. Only by establishing some consistent starting point can accounting ever achieve some underlying consistency in establishing accounting principles.

It should be emphasized to the students that the Board itself is likely to be the major user and thus the most direct beneficiary of the guidance provided by this pronouncement. However, knowledge of the objectives and concepts the Board uses should enable all who are affected by or interested in financial accounting standards to better understand the content and limitations of information provided by financial accounting and reporting, thereby furthering their ability to use that information effectively and enhancing confidence in financial accounting and reporting. That knowledge, if used with care, may also provide guidance in resolving new or emerging problems of financial accounting and reporting in the absence of applicable authoritative pronouncements.

CASE 2-4

- (a) (1) Relevance is one of the two primary decision-specific characteristics of useful accounting information. Relevant information is capable of making a difference in a decision. Relevant information helps users to make predictions about the outcomes of past, present, and future events, or to confirm or correct prior expectations. Information must also be timely in order to be considered relevant.
- (2) Reliability is one of the two primary decision-specific characteristics of useful accounting information. Reliable information can be depended upon to represent the conditions and events that it is intended to represent. Reliability stems from representational faithfulness and verifiability. Representational faithfulness is correspondence or agreement between accounting information and the economic phenomena it is intended to represent. Verifiability provides assurance that the information is free from bias.
- (3) Understandability is a user-specific characteristic of information. Information is understandable when it permits reasonably informed users to perceive its significance. Understandability is a link between users, who vary widely in their capacity to comprehend or utilize the information, and the decision-specific qualities of information.
- (4) Comparability means that information about enterprises has been prepared and presented in a similar manner. Comparability enhances comparisons between information about two different enterprises at a particular point in time.
- (5) Consistency means that unchanging policies and procedures have been used by an enterprise from one period to another. Consistency enhances comparisons between information about the same enterprise at two different points in time.
- (b) **(Note to instructor:** There are a multitude of answers possible here. The suggestions below are intended to serve as examples.)
- (e) Forecasts of future operating results and projections of future cash flows may be highly relevant to some decision makers. However, they would not be as reliable as historical cost information about past transactions.
- (f) Proposed new accounting methods may be more relevant to many decision makers than existing methods. However, if adopted, they would impair consistency and make trend comparisons of an enterprise's results over time difficult or impossible.
- (g) There presently exists much diversity among acceptable accounting methods and procedures. In order to facilitate comparability between enterprises, the use of only one accepted accounting method for a particular type of transaction could be required. However, consistency would be impaired for those firms changing to the new required methods.
- (h) Occasionally, relevant information is exceedingly complex. Judgment is required in determining the optimum trade-off between relevance and understandability. Information about the impact of general and specific price changes may be highly relevant but not understandable by all users.
- (c) Although trade-offs result in the sacrifice of some desirable quality of information, the overall result should be information that is more useful for decision making.

CASE 2-5

- (a) The various accepted times of recognizing revenue in the accounts are as follows:
1. Time of sale. This time is currently acceptable when the costs and expenses related to the particular transaction are reasonably determinable at the time of sale and when the collection of the sales price is reasonably certain.
 2. At completion. This time is currently acceptable in extractive industries where the salability of the product at a quoted price is likely and in the agricultural industry where there is a quoted price for the product and only low additional costs of delivery to the market remain.
 3. During production. This time is currently acceptable when the revenue is known from the contract and total cost can be estimated to determine percentage of completion.
 4. At collection. This time is currently acceptable when collections are received in installments, when there are substantial "after costs" that unless anticipated would have the effect of overstating income on a sales basis in the period of sale, and when collection risks are high.
- (b) (1) The "crucial event"—that is, the most difficult task in the cycle of a complete transaction—in the process of earning revenue may or may not coincide with the rendering of service to the subscriber. The new director suggests that they do not coincide in the magazine business and that revenue from subscription sales and advertising should be recognized in the accounts when the difficult task of selling is accomplished and not when the magazines are published to fill the subscriptions or to carry the advertising.

The director's view that there is a single crucial event in the process of earning revenue in the magazine business is questionable even though the amount of revenue is determinable when the subscription is sold. Although the firm cannot prosper without good advertising contracts and while advertising rates depend substantially on magazine sales, it also is true that readers will not renew their subscriptions unless the content of the magazine pleases them. Unless subscriptions are obtained at prices that provide for the recovery in the first subscription period of all costs of selling and filling those subscriptions, the editorial and publishing activities are as crucial as the sale in the earning of the revenue. Even if the subscription rate does provide for the recovery of all associated costs within the first period, however, the editorial and publishing activities still would be important since the firm has an obligation (in the amount of the present value of the costs expected to be incurred in connection with the editorial and publication activities) to produce and deliver the magazine. Not until this obligation is fulfilled should the revenue associated with it be recognized in the accounts since the revenue is the result of accomplishing two difficult economic tasks (selling and filling subscriptions) and not just the first one. The director's view also presumes that the cost of publishing the magazines can be computed accurately at or close to the time of the subscription sale despite uncertainty about possible changes in the prices of the factors of production and variations in efficiency. Hence, only a portion—not most—of the revenue should be recognized in the accounts at the time the subscription is sold.

- (2) Recognizing in the accounts all the revenue in equal portions with the publication of the magazine every month is subject to some of the same criticism from the standpoint of theory as the suggestion that all or most of the revenue be recognized in the accounts at the time the subscription is sold. Although the journalistic efforts of the magazine are important in the process of earning revenue, the firm could not prosper without magazine sales and the advertising that results from paid circulation. Hence, some revenue should be recognized in the accounts at the time of the subscription sale.

CASE 2-5 (Continued)

This alternative, even though it does not recognize revenue in the accounts quite as fast as it is earned, is preferable to the first alternative because a greater proportion of the process of earning revenue is associated with the monthly publication of the magazine than with the subscription sale. For this reason, and because the task of estimating the amount of revenue associated with the subscription sale often has been considered subjective, recognizing revenue in the accounts with the monthly publication of the magazine has received support even though it does not meet the tests of revenue recognition as well as the next alternative.

- (3) Recognizing in the accounts a portion of the revenue at the time a cash subscription is obtained and a portion each time an issue is published meets the tests of revenue recognition better than the other two alternatives. A portion of the net income is recognized in the accounts at the time of each major or crucial event. Each crucial event is clearly discernible and is a time of interaction between the publisher and subscriber. A legal sale is transacted before any revenue is recognized in the accounts. Prior to the time the revenue is recognized in the accounts, it already has been received in distributable form. Finally, the total revenue is measurable with more than the usual certainty, and the revenue attributable to each crucial event is determinable using reasonable (although sometimes conceptually unsatisfactory) assumptions about the relationship between revenue and costs when the costs are indirect.

(Note to instructor: Case 2-5 might also be assigned in conjunction with Chapter 18.)

CASE 2-6

- (a) The economist views business income in terms of wealth of the entity as a whole resulting from an accretion attributable to the whole process of business activity. The accountant must measure the "wealth" of the entity in terms of its component parts, that is, individual assets and liabilities. The events must be identified which cause changes in financial condition of the entity and the resulting changes should be assigned to specific accounting periods. To achieve this identification of such events, accountants employ the revenue recognition principle in the measurement of periodic income.
- (b) Revenue recognition results from the accomplishment of economic activity involving the transfer of goods and services giving rise to a claim. To warrant recognition there must be a change in assets that is capable of being objectively measured and that involves an exchange transaction. This refers to the presence of an arm's-length transaction with a party external to the entity. The existence and terms of the transaction may be defined by operation of law, by established trade practice, or may be stipulated in a contract. Note that an item should meet four fundamental recognition criteria to be recognized. Those criteria are:
 1. Definitions—The item meets the definition of an element of financial statements.
 2. Measurability—It has a relevant attribute measurable with sufficient reliability.
 3. Relevance—The information is capable of making a difference in user decisions.
 4. Reliability—The information is representationally faithful, verifiable, and neutral.

In the context of revenue recognition, recognition involves consideration of two factors, (a) being realized or realizable and (b) being earned, with sometimes one and sometimes the other being the more important consideration.

CASE 2-6 (Continued)

Events that can give rise to recognition of revenue are: the completion of a sale; the performance of a service; the production of a standard interchangeable good with a guaranteed market, a determinable market value and only minor costs of marketing, such as precious metals and certain agricultural commodities; and the progress of a construction project, as in shipbuilding. The passing of time may be the "event" that establishes the recognition of revenue, as in the case of interest revenue or rental income.

As a practical consideration, there must be a reasonable degree of certainty in measuring the amount of revenue recognized. Problems of measurement may arise in estimating the degree of completion of a contract, the net realizable value of a receivable or the value of a nonmonetary asset received in an exchange transaction. In some cases, while the revenue may be readily measured, it may be impossible to estimate reasonably the related expenses. In such instances revenue recognition must be deferred until proper periodic income measurement can be achieved through the matching process.

- (c) No. The factor apparently relied upon by Sulu Associates is that revenue is recognized as the services giving rise to it are performed. The firm has completed the construction of the building, obtained financing for the project, and secured tenants for most of the space. Management of the project is yet to be rendered and Sulu did not accrue revenue for this service. However, another factor must be considered. Since the fee for Sulu's services has as its source the future profits of the project, on May 31, 2004 there is no way to measure objectively the amount of the fee. Setting the amount at the commercial value of the services might be a reasonable approach were it not for the contingent nature of the source of the fees. That an asset, contracts receivable, exists as a result of this activity is outweighed by the inability to measure it objectively. Revenue recognition at this time is unwarranted because of the contingent nature of the revenue and the likelihood of overstating the assets. Thus, revenue recognition at this point would not be in accordance with generally accepted accounting principles.

Because revenue cannot be recognized, the related expenses should be deferred so that they can be amortized over the respective periods of revenue recognition. With a reasonable expectation of future benefit, the deferred costs conform to the accounting concept of assets.

CASE 2-7

- (a) Some costs are recognized as expenses on the basis of a presumed direct association with specific revenue. This presumed direct association has been identified both as "associating cause and effect" and as the "matching concept."

Direct cause-and-effect relationships can seldom be conclusively demonstrated, but many costs appear to be related to particular revenue, and recognizing them as expenses accompanies recognition of the revenue. Generally, the matching concept requires that the revenue recognized and the expenses incurred to produce the revenue be given concurrent periodic recognition in the accounting records. Only if effort is properly related to accomplishment will the results, called earnings, have useful significance concerning the efficient utilization of business resources. Thus, applying the matching principle is a recognition of the cause-and-effect relationship that exists between expense and revenue.

Examples of expenses that are usually recognized by associating cause and effect are sales commissions, freight-out on merchandise sold, and cost of goods sold or services provided.

CASE 2-7 (Continued)

- (b) Some costs are assigned as expenses to the current accounting period because
1. their incurrence during the period provides no discernible future benefits;
 2. they are measures of assets recorded in previous periods from which no future benefits are expected or can be discerned;
 3. they must be incurred each accounting year, and no build-up of expected future benefits occurs;
 4. by their nature they relate to current revenues even though they cannot be directly associated with any specific revenues;
 5. the amount of cost to be deferred can be measured only in an arbitrary manner or great uncertainty exists regarding the realization of future benefits, or both;
 6. and uncertainty exists regarding whether allocating them to current and future periods will serve any useful purpose.

Thus, many costs are called "period costs" and are treated as expenses in the period incurred because they have neither a direct relationship with revenue earned nor can their occurrence be directly shown to give rise to an asset. The application of this principle of expense recognition results in charging many costs to expense in the period in which they are paid or accrued for payment. Examples of costs treated as period expenses would include officers' salaries, advertising, research and development, and auditors' fees.

- (c) A cost should be capitalized, that is, treated as a measure of an asset when it is expected that the asset will produce benefits in future periods. The important concept here is that the incurrence of the cost has resulted in the acquisition of an asset, a future service potential. If a cost is incurred that resulted in the acquisition of an asset from which benefits are not expected beyond the current period, the cost may be expensed as a measure of the service potential that expired in producing the current period's revenues. Not only should the incurrence of the cost result in the acquisition of an asset from which future benefits are expected, but also the cost should be measurable with a reasonable degree of objectivity, and there should be reasonable grounds for associating it with the asset acquired. Examples of costs that should be treated as measures of assets are the costs of merchandise on hand at the end of an accounting period, costs of insurance coverage relating to future periods, and the cost of self-constructed plant or equipment.
- (d) In the absence of a direct basis for associating asset cost with revenue and if the asset provides benefits for two or more accounting periods, its cost should be allocated to these periods (as an expense) in a systematic and rational manner. Thus, when it is impractical, or impossible, to find a close cause-and-effect relationship between revenue and cost, this relationship is often assumed to exist. Therefore, the asset cost is allocated to the accounting periods by some method. The allocation method used should appear reasonable to an unbiased observer and should be followed consistently from period to period. Examples of systematic and rational allocation of asset cost would include depreciation of fixed assets, amortization of intangibles, and allocation of rent and insurance.
- (e) A cost should be treated as a loss when no revenue results. The matching of losses to specific revenue should not be attempted because, by definition, they are expired service potentials not related to revenue produced. That is, losses result from events that are not anticipated as necessary in the process of producing revenue.

There is no simple way of identifying a loss because ascertaining whether a cost should be a loss is often a matter of judgment. The accounting distinction between an asset, expense, loss, and prior period adjustment is not clear-cut. For example, an expense is usually voluntary, planned, and expected as necessary in the generation of revenue. But a loss is a measure of the service potential expired that is considered abnormal, unnecessary, unanticipated, and possibly nonrecurring and is usually not taken into direct consideration in planning the size of the revenue stream.

CASE 2-8

- (a) Costs should be recognized as expiring in a given period if they are not chargeable to a prior period and are not applicable to future periods. Recognition in the current period is required when any of the following conditions or criteria are present:
1. A direct identification of association of charges with revenue of the period, such as goods shipped to customers.
 2. An indirect association with the revenue of the period, such as fire insurance or rent.
 3. A period charge where no association with revenue in the future can be made so the expense is charged this period, such as officers' salaries.
 4. A measurable expiration of asset costs during the period, even though not associated with the production of revenue for the current period, such as a fire or casualty loss.
- (b) (1) Although it is generally agreed that inventory costs should include all costs attributable to placing the goods in a salable state, receiving and handling costs are often treated as cost expirations in the period incurred because they are irregular or are not in uniform proportion to sales.

The portion of the receiving and handling costs attributable to the unsold goods processed during the period should be inventoried. These costs might be more readily apportioned if they are assigned by some device such as an applied rate. Abnormally high receiving and handling costs should be charged off as a period cost.

- (2) The valuation of inventories at the lower of cost or market has been widely adopted as a conservative method of valuing inventories. This method results in recording losses but not gains prior to the sale of the inventory. Where there is not an attendant drop in sales prices, costs and revenues are mismatched to the extent that the present period's reported net income is reduced and the next period's reported net income is increased. Such mismatching has been justified on the grounds that the next period should receive a "fresh start" and its position be the same as though the inventory has been purchased at current market prices. This argument, it might be noted, is contrary to the "going concern" concept.

Where the writedown is of substantial amount, it has been suggested that the cost of goods sold be reported in terms of original cost. The writedown would be excluded from the cost of goods section and shown separately. In addition to matching costs with revenues, this procedure shows normal and abnormal operating results on the income statement for comparative purposes.

- (3) Cash discounts on purchases are treated as "other revenues" in some financial statements in violation of the matching concept. Revenue is not recognized when goods are purchased or cash disbursed. Furthermore, inventories valued at gross invoice price are recorded at an amount greater than their cash outlay resulting in misstatement of inventory cost in the current period and inventory cost expirations in future periods.

Close adherence to the matching concept requires that cash discounts be recorded as a reduction of the cost of purchases and that inventories be priced at net invoice prices. Where inventories are priced at gross invoice prices for expediency, however, there is slight distortion of the financial statements if the beginning and ending inventories vary little in amount.

CASE 2-9

- (a) The preferable treatment of the costs of the sample display houses is expensing them over more than one period. These sample display houses are assets because they represent rights to future service potentials or economic benefits.

CASE 2-9 (Continued)

According to the matching concept, the costs of service potentials should be amortized as the benefits are received. Thus, costs of the sample display houses should be matched with the revenue from the sale of the houses which is receivable over a period of more than one year. As the sample houses are left on display for three to seven years, Carlos Rodriguez apparently expects to benefit from the displays for at least that length of time.

The alternative of expensing the costs of sample display houses in the period in which the expenditure is made is based primarily upon the concept of conservatism. These costs are of a promotional nature. Promotional costs often are considered expenses of the period in which the expenditures occur due to the uncertainty in determining the time periods benefited. It is likely that no decision is made concerning the life of a sample display house at the time it is erected. Past experience may provide some guidance in determining the probable life. A decision to tear down or alter a house probably is made when sales begin to lag or when a new model with greater potential becomes available.

There is uncertainty not only as to the life of a sample display house but also as to whether a sample display house will be torn down or altered. If it is altered rather than torn down, a portion of the cost of the original house may be attributable to the new model.

- (b) If all of the shell houses are to be sold at the same price, it may be appropriate to allocate the costs of the display houses on the basis of the number of shell houses sold. This allocation would be similar to the units-of-production method of depreciation and would result in a good matching of costs with revenues. On the other hand, if the shell houses are to be sold at different prices, it may be preferable to allocate costs on the basis of the revenue contribution of the shell houses sold.

There is uncertainty regarding the number of homes of a particular model which will be sold as a result of the display sample. The success of this amortization method is dependent upon accurate estimates of the number and selling price of shell houses to be sold. The estimate of the number of units of a particular model which will be sold as a result of a display model should include not only units sold while the model is on display but also units sold after the display house is torn down or altered.

Cost amortization solely on the basis of time may be preferable when the life of the models can be estimated with a great deal more accuracy than can the number of units which will be sold. If unit sales and selling prices are uniform over the life of the sample, a satisfactory matching of costs and revenues may be achieved if the straight-line amortization procedure is used.

CASE 2-10

Date

Dear Uncle Waldo,

I received the information on Cricket Corp. and appreciate your interest in sharing this venture with me. However, I think that basing an investment decision on these financial statements would be unwise because they are neither relevant nor reliable.

One of the most important characteristics of accounting information is that it is relevant, i.e., it will make a difference in my decision. To be relevant, this information must be timely. Because Cricket's financial statements are a year old, they have lost their ability to influence my decision: a lot could have changed in that one year.

Another element of relevance is predictive value. Once again, Cricket's accounting information proves irrelevant. Shown without reference to other years' profitability, it cannot help me predict future profitability because I cannot see any trends developing. Closely related to predictive value is feedback value. These financial statements do not provide feedback on any strategies which the company may have used to increase profits.

These financial statements are also not reliable. In order to be reliable, their assertions must be verifiable by several independent parties. Because no independent auditor has verified these amounts, there is no way of knowing whether or not they are represented faithfully. For instance, I would like to believe that this company earned \$2,424,240, and that it had a very favorable debt-to-equity ratio. However, unaudited financial statements do not give me any reasonable assurance about these claims.

Finally, the fact that Mrs. Cricket herself prepared these statements indicates a lack of neutrality. Because she is not a disinterested third party, I cannot be sure that she did not prepare the financial statements in favor of her husband's business.

I do appreciate the trouble you went through to get me this information. Under the circumstances, however, I do not wish to invest in the Cricket bonds and would caution you against doing so. Before you make a decision in this matter, please call me.

Sincerely,

Your Nephew

CASE 2-11

- (a) The stakeholders are investors, creditors, etc.; i.e., users of financial statements, current and future.
- (b) Honesty and integrity of financial reporting, job protection, profit.
- (c) Applying the matching principle or not applying it.
- (d) The major question may be whether or not the expense of mothballing can be estimated properly so that the integrity of financial reporting is maintained. Applying the matching principle will result in lower profits and possibly higher rates for consumers. Could this cost anyone his or her job? Will investors and creditors have more useful information? On the other hand, failure to apply the matching principle means higher profits, lower rates, and greater potential job security.
- (e) Students' recommendations will vary.

Note: Other stakeholders possibly affected are present and future consumers of electric power. Delay in allocating the expense will benefit today's consumers of electric power at the expense of future consumers.

FINANCIAL REPORTING PROBLEM

- (a) From Note #1. Revenue is recognized when the risks and rewards of ownership have substantively transferred to customers, regardless of whether legal title has transferred. This condition is normally met when the product has been delivered or upon performance of services. The company sells a wide range of products to a diversified base of customers around the world and, therefore, believes there is no material concentration of credit risk. Prior to 2000, the company recognized revenue upon shipment of goods to customers and upon performance of services (refer to “Cumulative Effect of Accounting Change” that follows).

Cumulative Effect of Accounting Change

During the fourth quarter of 2000, the company changed its revenue recognition policies. Essentially, the new policies recognize that the risks and rewards of ownership in many transactions do not substantively transfer to customers until the product has been delivered, regardless of whether legal title has transferred. In addition to this change in accounting that affected a substantial portion of its produce sales, the company has revised aspects of its accounting for services provided in several of its smaller businesses. These new policies are consistent with the guidance contained in SEC Staff Accounting Bulletin No. 101. The effect of these changes in revenue recognition policies, as of January 1, 2000, is reported as the cumulative effect of an accounting change in 2000. This change did not have a significant effect on previously reported 2000 quarters or on prior years.

FINANCIAL REPORTING PROBLEM (Continued)

- (b) Most of the information presented in 3M's financial statements is reported on an historical cost basis. Examples are: Properties, including buildings and building equipment, inventories (subject to lower of market), short-term debt, long-term liabilities, and preferred and common stock. Regarding the use of fair value, all of the company's marketable investments are reported at fair value (quoted market prices). In addition, the fair value of the company's financial instruments is disclosed.**
- (c) Examination of the auditor's report.**
- (d) Advertising costs are charged to operations in the year incurred. To the extent that these expenses vary with the level of sales revenue, the company follows the matching principle because it matches expenses with revenues.**

FINANCIAL STATEMENT ANALYSIS CASE

- (a) Schuyler believes that the company has experienced a gain because the land and timber holdings have increased substantially in value. If the company chose to sell these holdings, the company could immediately recognize income for the difference between the cost and fair market value of the land and timber. However, because of the revenue recognition principle in accounting, no income is reported because an objective transaction has not occurred to warrant recognition in the accounts.

Schuyler indicates that because the historical cost principle does not permit the write-up of these assets, a user of the financial statements has no way of understanding that the fair market value of the assets greatly exceeds its cost. The user of the financial statement will find the book value of the holdings, but not the fair market value, in the accounts.

- (b) Cost is definite and verifiable, not a matter of conjecture or opinion. Once established, it is fixed as long as the asset remains the property of the company. These two characteristics are of real importance to those who use accounting data. To rely on the information supplied, both internal and external parties must know that the information is accurate and based on fact. By using costs as their basis for record keeping, accountants can provide objective and verifiable data in their reports.

Although there is general agreement that assets and liabilities should be accounted for on the basis of cost, there is also considerable criticism of this practice. Some accountants and others point out that accounting records kept on the basis of historical costs have severe

FINANCIAL STATEMENT ANALYSIS CASE (Continued)

disadvantages. As in this case, the assets are severely understated, and many believe that only by reporting current values can informed decisions be made.

It might be noted that some believe that the accounting statements do not have as their purpose the responsibility to report current values. This information may be developed from other sources external to the financial statements.

COMPARATIVE ANALYSIS CASE

- (a) **Coca-Cola indicates its business is nonalcoholic beverages, principally soft drinks, but also a variety of noncarbonated beverages. It notes that it is the world's leading manufacturer, marketer and distributor of soft-drink beverage concentrates and syrups as well as the world's largest marketer and distributor of juice and juice-drink products. In its segment supporting note to the financial statements, however, it does not provide a breakdown of beverage drinks into soft drinks and noncarbonated beverages. Rather segments are defined based on the following geographic areas: the North American Group (including The Minute Maid Company); the Africa Group; the Europe and Eurasia Group and the Middle East Group; the Latin America Group; the Asia Group; and Corporate. The North America Group includes the United States, Canada, and Puerto Rico.**

PepsiCo breaks its segments into (1) sales of PepsiCo, (2) sales of salty snacks (Frito-Lay) such as Lay's and Ruffles potato chips, Doritos and Tostitos tortilla chips, Fritos, Cheetos, and Rold Gold pretzels, (3) sales of juices (Gatorade/Tropicana), and (4) sales of cereals (Quaker).

- (b) **Coca-Cola's net operating revenues for 2001 was \$20,092 million which was comprised principally of beverage sales. PepsiCo reported net sales of \$26,935 million of which soft drinks is an estimated \$6,424 million and Tropicana contributed \$4,016 million. The remainder is related to sales in the Frito-Lay and Quaker Foods segments. As a result of these computations, Coca-Cola has the dominant position in beverage sales.**

COMPARATIVE ANALYSIS CASE (Continued)

- (c) **Coca-Cola values inventory at the lower of cost or market. In general, cost is determined on the basis of average cost or first-in first-out methods. PepsiCo also values its inventory at the lower of cost or market. In addition, it uses average cost, FIFO, and LIFO for different segments of its inventory.**

Because PepsiCo uses LIFO for part of its inventory, it would be necessary to adjust as best as possible to FIFO. An additional problem is that both use the average cost for some of their inventory, but information related to its percentage use is not provided.

- (d) **Both Pepsi and Coca-Cola were affected by the promulgation of new accounting standards by the FASB in 2001. Depreciation of these standard adoptions is discussed below.**

Coke

NEW ACCOUNTING STANDARDS

Effective January 1, 2001, the Company adopted SFAS No. 133, "Accounting for Derivative Instruments and Hedging Activities," as amended by SFAS No. 137 and SFAS No. 138. As discussed further in Note 9, the 2001 Consolidated Financial Statements were prepared in accordance with the provisions of SFAS No. 133. Prior years' financial statements have not been restated. The 2000 and 1999 Consolidated Financial Statements were prepared in accordance with the applicable professional literature for derivatives and hedging instruments in effect at that time.

Thus, results reported in 2001 are not directly comparable to those reported in earlier years.

COMPARATIVE ANALYSIS CASE (Continued)

The adoption of SFAS No. 133 resulted in the Company recording transition adjustments to recognize its derivative instruments at fair value and to recognize the ineffective portion of the change in fair value of its derivatives. The cumulative effect of these transition adjustments was an after-tax reduction to net income of approximately \$10 million and an after-tax net increase to Accumulated Other Comprehensive Income (AOCI) of approximately \$50 million. The reduction to net income is primarily related to the change in the time value and fair value of foreign currency options and interest rate agreements, respectively. The increase in AOCI is primarily related to net gains on foreign currency cash flow hedges. The Company reclassified into earnings during the year ended December 31, 2001 approximately \$54 million of net gains relating to the transition adjustment recorded in AOCI as of January 1, 2001.

Effective January 1, 2001, the Company adopted the provisions of Emerging Issues Task Force (EITF) Issue No. 00-14, "Accounting for Certain Sales Incentives," and EITF Issue No. 00-22, "Accounting for 'Points' and Certain Other Time-Based or Volume-Based Sales Incentive Offers, and Offers for Free Products or Services to be Delivered in the Future." Both of these EITF Issues provide additional guidance relating to the income statement classification of certain sales incentives. The adoption of these EITF Issues resulted in the Company reducing both net operating revenues and selling, administrative and general expenses by approximately \$580 million in 2001, \$569 million in 2000 and \$521 million in 1999. These reclassifications have no impact on operating income.

In June 2001, the Financial Accounting Standards Board (FASB) issued SFAS No. 141, "Business Combinations," and SFAS No. 142,

COMPARATIVE ANALYSIS CASE (Continued)

“Goodwill and Other Intangible Assets.” SFAS No. 142 is effective for the Company as of January 1, 2002. Under the new rules, goodwill and indefinite lived intangible assets will no longer be amortized but will be reviewed annually for impairment. Intangible assets that are not deemed to have an indefinite life will continue to be amortized over their useful lives.

The Company estimates the cumulative effect of adopting SFAS No. 142 will result in a non-cash charge in the first quarter of 2002 of approximately \$1 billion on a pretax basis. This amount reflects intangible assets for both the Company and the Company’s proportionate share of its equity method investees. The adoption of this new standard will also benefit earnings beginning in 2002 by approximately \$60 million in reduced amortization from Company-owned intangible assets and approximately \$150 million of increased equity income relating to the Company’s share of amortization savings from equity method investees.

Pepsi

NEW ACCOUNTING STANDARDS

On December 31, 2000, we adopted Statement of Financial Accounting Standard No. (SFAS) 133, Accounting for Derivative Instruments and Hedging Activities. SFAS 133 establishes accounting and reporting standards for derivative instruments and hedging activities. It requires that companies recognize all derivative instruments as either assets or liabilities in the Consolidated Balance Sheet and measure those instruments at fair value. The adoption of SFAS 133 on December 31, 2000 increased assets by approximately

COMPARATIVE ANALYSIS CASE (Continued)

\$12 million and liabilities by approximately \$10 million with approximately \$3 million recognized in accumulated other comprehensive income and a loss of less than \$1 million recognized in the Consolidated Statement of Income.

In July 2001, the FASB issued SFAS 141, Business Combinations. SFAS 141 eliminates the pooling-of-interests method of accounting for business combinations and modifies the application of the purchase accounting method. Adoption of this statement does not have an impact on our consolidated financial statements.

In July 2001, the FASB also issued SFAS 142, Goodwill and Intangibles. SFAS 142 eliminates the current requirement to amortize goodwill and indefinite-lived intangible assets, addresses the amortization of intangible assets with finite lives and addresses impairment testing and recognition for goodwill and intangible assets. SFAS 142 applies to existing goodwill and intangible assets, as well as to transactions completed after the statement's effective date. SFAS 142 is effective for 2002. Adoption of SFAS 142 will increase income before taxes by approximately \$87 million in 2002 reflecting the cessation of goodwill amortization and changes in the lives of other intangibles. The required transition impairment evaluations are not expected to result in impairment charges.

RESEARCH CASES

CASE 1

Answers will vary by the article and the company selected.

CASE 2

- (a) Some companies say they need to disclose only those things that have a direct impact on their finances. One rule of thumb is to disclose anything that affects more than 5% of net income. Others disclose issues that would affect at least 5% of assets or revenue. However, relying on the magnitude of the item is not helpful if missing a target by a small amount (say a penny) leads to a significant negative market reaction.

Consequently, some securities law experts argue that anything affecting a company's stock also should be considered material. Investors sometimes look at the stock price. If price moves significantly in response to new information, that is suggestive that an item is material. Of course, waiting for a market reaction does not help management decide whether to disclose or recognize a potentially material item.

- (b) The Supreme Court has defined materiality as anything the average investor would need to know to make an informed decision about an investment. This definition is similar to that used by the FASB. According to *Concepts Statement 2*, the FASB indicates that "an item is material if in light of surrounding circumstances, that the magnitude of the item is such that it is probable that the judgment of a reasonable person relying on the report would have been changed or influenced."

RESEARCH CASES (Continued)

- (c) As indicated, Dow’s reports reveal little information about its potential exposure, citing the possible confusion to statement readers. 3M provides limited specific information on its asbestos obligations but indicates that it has receivables (see not 6) from insurance to cover its exposure for some asbestos-related obligations. In contrast, Halliburton spends more than four pages discussing its exposures, its strategy for dealing with it, and its estimated liabilities. Thus, it appears Halliburton has better reporting in this area.**
- (d) A grade of C seems appropriate – better than 3M but not as good as Halliburton. Note that Dow has indicated it will enhance its asbestos disclosures in future filings.**

INTERNATIONAL REPORTING CASE

The IASB and FASB frameworks are strikingly similar. This is not surprising, given that the IASB framework was adopted after the FASB developed its framework (the IASB framework was approved in April 1989). In addition, the IASC, the predecessor to the IASB, was formed to facilitate harmonization of accounting standards across countries. This objective could be aided by adopting a similar conceptual framework.

Specific similarities include:

- (a) **Primary Components—Both frameworks include elements addressing objectives, assumptions, qualitative characteristics, elements of financial statements, and constraints.**
- (b) **The objectives for both frameworks focus on information about financial position, performance and changes in performance that is decision-useful.**
- (c) **Relevance and reliability are identified as key qualitative characteristics of useful information.**
- (d) **Both frameworks adopt similar definitions for assets and liabilities and define equity as the residual of assets minus liabilities.**
- (e) **Both frameworks assume some level of understandability by users of financial statements.**

INTERNATIONAL REPORTING CASE (Continued)

Some differences include:

- (a) Terminology—The IASB framework contains some terms not found in the FASB’s. For example, prudence, listed under reliability in the IASB framework corresponds to the notion of conservatism in the FASB framework.**
- (b) Assumptions—The IASB does not specifically address assumptions about the monetary unit or economic entity. Note that the accrual basis assumption, in combination with the timeliness constraint can be viewed as subsuming the periodicity assumption in the FASB framework.**
- (c) Elements—The IASB defines just five elements without specific definitions for Investments by and Distributions to Owners or Comprehensive Income. There is no distinction in the IASB framework between gains and revenues and losses and expenses.**

Note to Instructors—These differences may be resolved as the FASB and IASB work on their performance reporting projects.

- (d) Qualitative Characteristics—The IASB does not make a distinction between primary (relevance and reliability) and secondary qualitative factors (comparability), although many of the same qualitative factors are apparent in each framework.**

Recognition and Measurement Principles—The IASB Framework, as presented in the Overview does not address measurement principles related to Historical Cost, Revenue Recognition and Matching. These likely are discussed in the context of Accrual Basis and True and Fair Presentation.

PROFESSIONAL SIMULATION

- (1) From the facts it is difficult to determine whether to agree or disagree. Consistency, of course, is violated in this situation, although its violation may not be material. Furthermore, that the corporation changed accounting policies regarding the treatment of small tools cannot be judged good or bad, but would depend on the circumstances. In this case, it seems that the result will be approximately the same whether the corporation capitalizes and expenses, or simply expenses each period, since the purchases are fairly uniform. Perhaps from a cost standpoint (expediency), it might be best to continue the present policy rather than become involved in detailed depreciation schedules, assuming that purchases remain fairly uniform. On the other hand, the president may believe there is a significant unrecorded asset that should be shown on the balance sheet. If such is the case, capitalization and subsequent depreciation would be more appropriate.
- (2) Disagree. The historical cost principle indicates that assets and liabilities are accounted for on the basis of cost. If sales value were selected for example, it would be extremely difficult to establish an appraisal value for the given item without selling it. Note, too, that the revenue recognition principle provides guidance on when revenue should be recognized. Revenue should be recognized when (1) realized or realizable and (2) earned. In this case, the revenue was not earned because the critical event "sale of the land" had not occurred.
- (3) From the facts it is difficult to determine whether to agree or disagree with the president. The president's approach is not a violation of any principle. Consistency requires that accounting entities give accountable events the same accounting treatment from period to period for a given business enterprise. It says nothing concerning consistency of accounting principles among business enterprises. From a comparability viewpoint, it might be useful to report the information on a LIFO basis, but as indicated above, there is no requirement to do so.

CHAPTER 3

The Accounting Information System

ASSIGNMENT CLASSIFICATION TABLE

Topics	Questions	Brief Exercises	Exercises	Problems
1. Transaction identification.	1, 2, 3, 5	1, 2	1, 2, 3, 4, 21	1
2. Nominal accounts.	4, 7			
3. Trial balance.	6, 13		2, 3, 4	1, 2, 7
4. Adjusting entries.	8, 14, 16, 17	3, 4, 5, 6, 7, 8, 9, 10	5, 6, 7, 8, 9, 10	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
5. Closing.	15	12	11, 12, 17	1, 3, 4, 5, 6, 7, 8, 9, 10
6. Inventory and cost of goods sold.	9, 10, 11, 12	11	12, 14, 15, 16	
7. Work sheet and/or financial statements.	18		13, 18, 19, 20	1, 2, 4, 7
8. Comprehensive accounting cycle.				1, 2, 7
*9. Cash vs. Accrual Basis	19, 20, 21	13	22, 23	11
*10. Reversing entries.	22	14	24	

*These topics are dealt with in the Appendix to the Chapter.

ASSIGNMENT CHARACTERISTICS TABLE

Item	Description	Level of Difficulty	Time (minutes)
E3-1	Transaction analysis–service company.	Simple	15-20
E3-2	Corrected trial balance.	Simple	10-15
E3-3	Corrected trial balance.	Simple	15-20
E3-4	Corrected trial balance.	Simple	15-20
E3-5	Adjusting entries.	Moderate	15-20
E3-6	Adjusting entries.	Moderate	15-20
E3-7	Analyze adjusted data.	Complex	15-20
E3-8	Adjusting entries.	Moderate	10-15
E3-9	Adjusting entries.	Moderate	15-20
E3-10	Adjusting entries and trial balance.	Complex	25-30
E3-11	Closing entries.	Simple	10-15
E3-12	Closing entries.	Moderate	10-15
E3-13	Completing work sheet.	Simple	10-15
E3-14	Compute missing amounts.	Simple	10-15
E3-15	Find missing amounts–periodic inventory.	Moderate	15-20
E3-16	Prepare cost of goods sold–periodic inventory.	Moderate	10-15
E3-17	Closing entries for a corporation.	Moderate	15-20
E3-18	Work sheet preparation.	Moderate	15-20
E3-19	Work sheet and balance sheet presentation.	Moderate	20-25
E3-20	Partial work sheet preparation.	Moderate	15-20
E3-21	Transactions of a corporation, including investment and dividend.	Moderate	20-25
*E3-22	Cash to accrual basis.	Moderate	10-15
*E3-23	Cash to accrual basis.	Moderate	10-15
*E3-24	Adjusting and reversing entries.	Complex	15-20
P3-1	Transactions, financial statements–service company.	Moderate	25-35
P3-2	Adjusting entries and financial statements.	Moderate	35-40
P3-3	Prepare adjusting entries.	Moderate	25-30
P3-4	Worksheet, balance sheet, adjusting and closing entries		40-50
P3-5	Prepare financial statements, adjusting and closing entries.	Moderate	40-50
P3-6	Adjusting entries.	Moderate	15-20
P3-7	Adjusting entries and financial statements.	Moderate	25-35
P3-8	Adjusting entries and financial statements.	Moderate	25-35
P3-9	Adjusting and closing.	Moderate	30-40
P3-10	Adjusting and closing.	Moderate	30-35
*P3-11	Cash and accrual basis.	Moderate	35-40

ANSWERS TO QUESTIONS

1. Examples are:
 - (a) Payment of an accounts payable.
 - (b) Collection of an accounts receivable from a customer.
 - (c) Transfer of an accounts payable to a note payable.
2. Transactions (a), (b), (d) are considered business transactions and are recorded in the accounting records because a change in assets, liabilities, or equities has been effected as a result of a transfer of values from one party to another. Transactions (c) and (e) are not business transactions because a transfer of values has not resulted, nor can the event be considered financial in nature and capable of being expressed in terms of money.
3. Transaction (a): Accounts Receivable (debit), Service Revenue (credit).
Transaction (b): Cash (debit), Accounts Receivable (credit).
Transaction (c): Office Supplies (debit), Accounts Payable (credit).
Transaction (d): Delivery Expense (debit), Cash (credit).
4. Revenue and expense accounts are referred to as temporary or nominal accounts because each period they are closed out to Income Summary in the closing process. Their balances are reduced to zero at the end of the accounting period; therefore, the term temporary or nominal is sometimes given to these accounts.
5. The double-entry system means that for every debit there must be a credit and vice-versa. It does not mean that each transaction must be recorded twice.
6. Although it is not absolutely necessary that a trial balance be taken periodically, it is customary and desirable. The trial balance accomplishes two principal purposes:
 - (1) It tests the accuracy of the entries in that it proves that debits and credits of an equal amount are in the ledger.
 - (2) It supplies a list of open accounts and their balances which may be used in preparing the financial statements and in supplying financial data about the concern.
7.
 - (a) Real account; balance sheet.
 - (b) Real account; balance sheet.
 - (c) Merchandise inventory is generally considered a real account appearing on the balance sheet. It has the elements of a nominal account when the periodic inventory system is used. It appears on the income statement when the multiple-step format is used.
 - (d) Real account; balance sheet.
 - (e) Real account; balance sheet.
 - (f) Nominal account; income statement.
 - (g) Nominal account; income statement.
 - (h) Real account; balance sheet.
8. At December 31, the three days' wages due to the employees represent a current liability. The related expense must be recorded in this period to properly reflect the expense incurred.
9.
 - (a) In a service company, revenues are service revenues and expenses are operating expenses. In a merchandising company, revenues are sales revenues and expenses consist of cost of goods sold plus operating expenses.
 - (b) The measurement process in a merchandising company consists of comparing the sales price of the merchandise inventory to the cost of goods sold and operating expenses.

Questions Chapter 3 (Continued)

10. The purpose of the Cost of Goods Sold account is to act as a clearing account for bringing together those items directly affecting cost of goods sold for this period. Example of items that would appear in this account are: (1) Purchases, (2) Purchase Discounts, (3) Purchase Returns, (4) Purchase Allowances, (5) Transportation-in, (6) Inventory (beginning), and (7) Inventory (ending). The ending balance represents the cost of goods sold.
11. The purpose of the cost of goods sold account is to accumulate the issuances from inventory. In a perpetual inventory system, when inventory is sold, Cost of Goods Sold is debited and Inventory is credited. At the end of the period, Cost of Goods Sold is closed to Income Summary.
12. On the balance sheet, the effect of the error is (1) the equipment account is understated, and (2) the Capital account (Retained Earnings) is understated. On the income statement, (1) purchases and cost of goods sold are overstated and (2) net income is understated. **(Note to instructor:** The instructor should also be ready to discuss the effect that the omission of the depreciation charge on the computer might have.)
13. (a) No change.
 (b) Before closing, balances exist in these accounts; after closing, no balances exist.
 (c) Before closing, balances exist in these accounts; after closing, no balances exist.
 (d) Before closing, a balance exists in this account exclusive of the income or loss for the period; during the period the balance is decreased by dividends declared; after closing, the balance is increased or decreased by the amount of net income or net loss.
 (e) No change.
14. Adjusting entries are prepared prior to the preparation of financial statements in order to bring the accounts up to date and are necessary (1) to achieve a proper matching of revenues and expenses in measuring income and (2) to achieve an accurate presentation of assets and equities.
15. Closing entries are prepared to transfer the effect of nominal accounts to capital (retained earnings) after the adjusting entries have been recorded and the financial statements prepared. Closing entries are necessary to reduce the balances in nominal accounts to zero in order to prepare the accounts for the next period's transactions.
16. $\text{Cost} - \text{Salvage Value} = \text{Depreciable Cost}$: $\$3,000 - \$0 = \$3,000$. $\text{Depreciable Cost} \div \text{Useful Life} = \text{Depreciation Expense For One Year}$ $\$3,000 \div 5 \text{ years} = \600 per year . The asset was used for 6 months (7/1 – 12/31), therefore 1/2-year of depreciation expense should be reported. Annual depreciation $\times 6/12 = \text{amount to be reported on 2005 income statement}$: $\$600 \times 6/12 = \underline{\$300}$.

17.

December 31	
Interest Receivable	10,000
Interest Revenue.....	10,000
(To record accrued interest revenue on loan)	

Accrued expenses result from the same causes as accrued revenues. In fact, an accrued expense on the books of one company is an accrued revenue to another company.

18. A work sheet is not a permanent accounting record and its use is not required in the accounting cycle. The work sheet is an informal device for accumulating and sorting information needed for the financial statements. Its use is optional in helping to prepare financial statements.
- *19. Under the cash basis of accounting, revenue is recorded only when cash is received and expenses are recorded only when paid. Under the accrual basis of accounting, revenue is recognized when it is earned and expenses are recognized when incurred, without regard to the time of the receipt or payment of cash.

Questions Chapter 3 (Continued)

A cash basis balance sheet and income statement are incomplete and inaccurate in comparison to accrual basis financial statements. The accrual basis matches effort (expenses) with accomplishment (revenues) in the income statement while the cash basis only presents cash receipts and cash disbursements. The accrual basis balance sheet contains receivables, payables, accruals, prepayments, and deferrals while a cash basis balance sheet shows none of these.

- *20. Wages paid during the year will include the payment of any wages attributable to the prior year but unpaid at the end of the prior year. This amount is an expense of the prior year and not of the current year, and thus should be subtracted in determining wages expense. Similarly, wages paid during the year will not include any wages attributable to hours worked during the current year but not actually paid until the following year. This should be added in determining wages expense.
- *21. Although similar to the strict cash basis, the modified cash basis of accounting requires that expenditures for capital items be charged against income over all the periods to be benefited. This is done through conventional accounting methods, such as depreciation and amortization. Also, prepaid expenses are similarly recognized as expense in the year to which they apply, not necessarily the year in which they are paid. Under the strict cash basis, these and all other expenditures would be recognized as expense in the period in which the corresponding cash disbursement is made.
- *22. Reversing entries are made at the beginning of the period to reverse the accrued items and some prepaid items. Reversing entries are not required. They are made to simplify the recording of certain transactions that will occur later in the period. The same results will be attained whether or not reversing entries are recorded.

SOLUTIONS TO BRIEF EXERCISES

BRIEF EXERCISE 3-1

May	1	Cash.....	3,000	
		Common Stock		3,000
	3	Equipment.....	1,100	
		Accounts Payable.....		1,100
	13	Rent Expense	400	
		Cash		400
	21	Accounts Receivable.....	500	
		Service Revenue.....		500

BRIEF EXERCISE 3-2

Aug.	2	Cash.....	12,000	
		Equipment.....	2,500	
		Brett Favre, Capital.....		14,500
	7	Supplies.....	400	
		Accounts Payable.....		400
	12	Cash.....	1,300	
		Accounts Receivable	670	
		Service Revenue		1,970

BRIEF EXERCISE 3-2 (Continued)

15	Rent Expense	600	
	Cash.....		600
19	Supplies Expense	130	
	Supplies (\$400 – \$270).....		130

BRIEF EXERCISE 3-3

July	1	Prepaid Insurance	18,000	
		Cash.....		18,000
Dec.	31	Insurance Expense	3,000	
		Prepaid Insurance		3,000
		(\$18,000 x 1/2 x 1/3)		

BRIEF EXERCISE 3-4

July	1	Cash	18,000	
		Unearned Insurance Revenue		18,000
Dec.	31	Unearned Insurance Revenue	3,000	
		Insurance Revenue		3,000
		(\$18,000 x 1/2 x 1/3)		

BRIEF EXERCISE 3-5

Aug.	1	Prepaid Insurance	8,400	
		Cash		8,400
Dec.	31	Insurance Expense.....	1,750	
		Prepaid Insurance.....		1,750
		(\$8,400 x 5/24)		

BRIEF EXERCISE 3-6

Nov.	1	Cash.....	2,700	
		Unearned Rent Revenue		2,700
Dec.	31	Unearned Rent Revenue.....	1,800	
		Rent Revenue		1,800
		(\$2,700 x 2/3)		

BRIEF EXERCISE 3-7

Dec.	31	Salaries Expense.....	3,600	
		Salaries Payable.....		3,600
		(\$6,000 x 3/5)		
Jan.	2	Salaries Payable	3,600	
		Salaries Expense.....	2,400	
		Cash		6,000

BRIEF EXERCISE 3-8

Dec.	31	Interest Receivable	300	
		Interest Revenue		300
Feb.	1	Cash	10,400	
		Notes Receivable		10,000
		Interest Receivable		300
		Interest Revenue		100

BRIEF EXERCISE 3-9

Dec.	31	Interest Expense	400	
		Interest Payable.....		400
	31	Accounts Receivable	1,400	
		Service Revenue		1,400
	31	Salaries Expense	700	
		Salaries Payable.....		700
	31	Bad Debt Expense	900	
		Allowance for Doubtful Accounts		900

BRIEF EXERCISE 3-10

Depreciation Expense	3,000	
Accumulated Depreciation – Equipment		3,000
Equipment	\$30,000	
Less: Accumulated Depreciation – Equipment	<u>3,000</u>	\$27,000

BRIEF EXERCISE 3-11

Beginning inventory			\$ 81,000
Purchases		\$540,000	
Less: Purchase returns	\$5,800		
Purchase discounts	<u>5,000</u>	<u>10,800</u>	
Net purchases		529,200	
Add: Freight-in		<u>16,200</u>	
Cost of goods purchased			<u>545,400</u>
Cost of goods available for sale			626,400
Ending inventory			<u>70,200</u>
Cost of goods sold			<u>\$556,200</u>

BRIEF EXERCISE 3-12

Sales	828,900	
Interest Revenue.....	13,500	
Income Summary		842,400
Income Summary.....	780,300	
Cost of Goods Sold.....		556,200
Operating Expenses		189,000
Income Tax Expense		35,100
Income Summary.....	62,100	
Retained Earnings.....		62,100
Retained Earnings.....	18,900	
Dividends		18,900

***BRIEF EXERCISE 3-13**

(a)	Cash receipts	\$152,000
	+ Increase in accounts receivable	5,600
	(\$18,600 – \$13,000)	
	Service revenue	<u>\$157,600</u>
(b)	Payments for operating expenses.....	\$ 97, 000
	– Increase in prepaid expenses	(5,700)
	(\$23,200 – \$17,500)	
	Operating expenses	<u>\$ 91,300</u>

***BRIEF EXERCISE 3-14**

(a)	Salaries Payable	3,600	
	Salaries Expense		3,600
(b)	Salaries Expense.....	6,000	
	Cash		6,000
(c)	Salaries Payable	3,600	
	Salaries Expense.....	2,400	
	Cash		6,000

SOLUTIONS TO EXERCISES

EXERCISE 3-1 (15-20 minutes)

Apr.	2	Cash.....	32,000	
		Equipment.....	14,000	
		Beverly Crusher, Capital		46,000
	2	No entry—not a transaction.		
	3	Supplies.....	700	
		Accounts Payable		700
	7	Rent Expense.....	600	
		Cash		600
	11	Accounts Receivable	1,100	
		Service Revenue		1,100
	12	Cash.....	3,200	
		Unearned Service Revenue		3,200
	17	Cash.....	2,300	
		Service Revenue		2,300
	21	Insurance Expense.....	110	
		Cash		110
	30	Salaries Expense.....	1,160	
		Cash		1,160

EXERCISE 3-1 (Continued)

30	Supplies Expense	120	
	Supplies		120
30	Equipment	6,100	
	Beverly Crusher, Capital		6,100

EXERCISE 3-2 (10-15 minutes)

Wanda Landowska Company

Trial Balance

April 30, 2005

	<u>Debit</u>	<u>Credit</u>
Cash	\$ 4,800	
Accounts Receivable	2,750	
Prepaid Insurance (\$700 + \$100)	800	
Equipment	8,000	
Accounts Payable (\$4,500 – \$100)		\$ 4,400
Property Tax Payable		560
Wanda Landowska, Capital (\$11,200 + \$1,500)		12,700
Wanda Landowska, Drawing	1,500	
Service Revenue		6,690
Salaries Expense	4,200	
Advertising Expense (\$1,100 + \$300)	1,400	
Property Tax Expense (\$800 + \$100)	900	
	<u>\$24,350</u>	<u>\$24,350</u>

EXERCISE 3-3 (15-20 minutes)

The ledger accounts are reproduced below, and corrections are shown in the accounts.

Cash			
Bal.	5,912	(4)	190
(1)	450		

Accounts Payable		
Bal.		7,044

Accounts Receivable			
Bal.	5,240	(1)	450

Common Stock		
Bal.		8,000

Supplies on Hand		
Bal.	2,967	

Retained Earnings		
Bal.		2,000

Furniture and Equipment		
Bal.	6,100	
(2)	3,200	

Service Revenue		
Bal.		5,200
(3)		2,025
(5)		80

Office Expense			
Bal.	4,320	(2)	3,200

EXERCISE 3-3 (Continued)

**Blues Traveler Corporation
Trial Balance (corrected)
April 30, 2005**

	<u>Debit</u>	<u>Credit</u>
Cash	\$ 6,172	
Accounts Receivable	4,790	
Supplies on Hand	2,967	
Furniture and Equipment	9,300	
Accounts Payable		\$ 7,044
Common Stock		8,000
Retained Earnings		2,000
Service Revenue		7,305
Office Expense	<u>1,120</u>	
	<u>\$24,349</u>	<u>\$24,349</u>

EXERCISE 3-4 (15-20 minutes)

**Antoine Watteau Co.
Trial Balance
June 30, 2005**

	<u>Debit</u>	<u>Credit</u>
Cash (\$2,870 + \$180 – \$65 – \$65)	\$ 2,920	
Accounts Receivable (\$3,231 – \$180)	3,051	
Supplies (\$800 – \$500)	300	
Equipment (\$3,800 + \$500)	4,300	
Accounts Payable (\$2,666 – \$206 – \$260)		\$ 2,200
Unearned Service Revenue (\$1,200 – \$325)		875
Common Stock		6,000
Retained Earnings (\$3,000 – \$575)		2,425
Service Revenue (\$2,380 + \$801 + \$325)		3,506
Wages Expense (\$3,400 + \$670 – \$575)	3,495	
Office Expense	940	
	<u>\$15,006</u>	<u>\$15,006</u>

EXERCISE 3-5 (10-15 minutes)

1. Depreciation Expense (\$250 X 3).....	750	
Accumulated Depreciation – Equipment.....		750
2. Unearned Rent Revenue (\$9,3000 X 1/3).....	3,100	
Rent Revenue		3,100
3. Interest Expense.....	500	
Interest Payable		500

EXERCISE 3-5 (Continued)

4. Supplies Expense.....	1,950	
Supplies (\$2,800 – \$850).....		1,950
5. Insurance Expense (\$300 X 3).....	900	
Prepaid Insurance.....		900

EXERCISE 3-6 (10-15 minutes)

1. Accounts Receivable	750	
Service Revenue		750
2. Utility Expense.....	520	
Utilities Payable.....		520
3. Depreciation Expense	400	
Accumulated Depreciation – Dental Equipment...		400
Interest Expense.....	500	
Interest Payable.....		500
4. Insurance Expense (\$12,000 X 1/12).....	1,000	
Prepaid Insurance.....		1,000
5. Supplies Expense (\$1,600 – \$500)	1,100	
Supplies		1,100

EXERCISE 3-7 (15-20 minutes)

(a)	Ending balance of supplies	\$700	
	Add: Adjusting entry	950	
	Deduct: Purchases	<u>850</u>	
	Beginning balance of supplies	<u>800</u>	
(b)	Total prepaid insurance	\$4,800	(\$400 X 12)
	Amount used (6 X \$400)	<u>2,400</u>	
	Present balance	<u>2,400</u>	

The policy was purchased six months ago (August 1, 2004)

(c) The entry in January to record salary expense was

Salaries Expense		1,800	
Salaries Payable		700	
Cash			2,500

The "T" account for salaries payable is

Salaries Payable			
Paid	700	Beg. Bal.	?
January			
		End Bal.	800

The beginning balance is therefore

Ending balance of salaries payable	\$ 800	
Plus: Reduction of salaries payable	<u>700</u>	
Beginning balance of salaries payable	<u>\$1,500</u>	

EXERCISE 3-7 (Continued)

(d) Service revenue	\$2,000	
Cash received	<u>1,600</u>	
Unearned revenue reduced	<u>\$ 400</u>	
Ending unearned revenue January 31, 2005		\$ 750
Plus: Unearned revenue reduced		<u>400</u>
Beginning unearned revenue December 31, 2004		<u>\$1,150</u>

EXERCISE 3-8 (10-15 minutes)

1.	August 31, 2005		
	Wages Expense	1,900	
	Wages Payable		1,900
	(To record wages payable at 8/31)		
2.	August 31, 2005		
	Utilities Expense	600	
	Accounts Payable		600
	(To record utility expense for August)		
3.	August 31, 2005		
	Interest Expense (\$30,000 x 8% x 1/12)	200	
	Interest Payable.....		200
	(To record interest expense for August)		
4.	August 31, 2005		
	Telephone Expense	117	
	Accounts Payable		117
	(To record telephone expense for August)		

EXERCISE 3-9 (15-20 minutes)

(a)	10/15	Salaries Expense.....	800	
		Cash		800
		(To record payment of October 15 payroll)		
	10/15	Accounts Receivable	2,400	
		Service Revenue		2,400
		(To record for revenue for services performed for which payment has not yet been received)		
	10/20	Cash.....	650	
		Unearned Service Revenue		650
		(To record receipt of cash for services not yet performed)		
(b)	10/31	Supplies Expense.....	470	
		Supplies		470
		(To record the use of supplies during October)		
	10/31	Accounts Receivable	1,650	
		Service Revenue		1,650
		(To record revenue for services performed for which payment has not yet been received)		
	10/31	Salaries Expense.....	600	
		Salaries Payable		600
		(To record liability for payroll)		
	10/31	Unearned Service Revenue.....	400	
		Service Revenue		400
		(To reduce the Unearned Service Revenue account for service that have been performed)		

EXERCISE 3-10 (25-30 minutes)

(a)	1.	Aug. 31	Insurance Expense ($\$4,500 \times 3/12$)	1,125	
			Prepaid Insurance		1,125
	2.	Aug. 31	Supplies Expense ($\$2,600 - \450)	2,150	
			Supplies		2,150
	3.	Aug. 31	Depreciation Expense—Cottages	1,080	
			Accumulated Depreciation— Cottages		1,080
			($\$120,000 - \$12,000 = \$108,000$; $\$108,000 \times 4\% = \$4,320$ per year; $\$4,320 \times 1/4 = \$1,080$)		
	Aug. 31	Depreciation Expense—Furniture.....	360		
		Accumulated Depreciation— Furniture.....		360	
		($\$16,000 - \$1,600 = \$14,400$; $\$14,400 \times 10\% = \$1,440$; $\$1,440 \times 1/4 = \360)			
4.	Aug. 31	Unearned Rent Revenue	3,800		
		Rent Revenue		3,800	
5.	Aug. 31	Salaries Expense	375		
		Salaries Payable		375	
6.	Aug. 31	Accounts Receivable.....	800		
		Rent Revenue		800	
7.	Aug. 31	Interest Expense	1,200		
		Interest Payable.....		1,200	
		$[(\$60,000 \times 8\%) \times 1/4]$			

EXERCISE 3-10 (Continued)

(b) **Greco Resort**
Adjusted Trial Balance
August 31, 2005

	<u>Debit</u>	<u>Credit</u>
Cash	\$ 19,600	
Accounts Receivable	800	
Prepaid Insurance (\$4,500 – \$1,125)	3,375	
Supplies (\$2,600 – \$2,150)	450	
Land	20,000	
Cottages	120,000	
Accumulated Depreciation—Cottages		\$ 1,080
Furniture	16,000	
Accumulated Depreciation—Furniture		360
Accounts Payable		4,500
Unearned Rent Revenue (\$4,600 – \$3,800)		800
Salaries Payable		375
Interest Payable		1,200
Mortgage Payable		60,000
Common Stock		91,000
Retained Earnings		9,000
Dividends	5,000	
Rent Revenue (\$76,200 + \$3,800 + \$800)		80,800
Salaries Expense (\$44,800 + \$375)	45,175	
Utilities Expense	9,200	
Repair Expense	3,600	
Insurance Expense	1,125	
Supplies Expense	2,150	
Depreciation Expense—Cottages	1,080	
Depreciation Expense—Furniture	360	
Interest Expense	1,200	
	<u>\$249,115</u>	<u>\$249,115</u>

EXERCISE 3-11 (10-15 Minutes)

(a) Sales		\$800,000
Less: Sales returns and allowances	\$24,000	
Sales discount	<u>15,000</u>	<u>39,000</u>
Net sales		<u>\$761,000</u>

(b) Sales	800,000	
Income Summary		800,000
Income Summary	39,000	
Sales Returns and Allowances		24,000
Sales Discounts		15,000

EXERCISE 3-12 (10-15 minutes)

Sales	350,000	
Sales Returns and Allowances		13,000
Sales Discounts		8,000
Income Summary		329,000
Income Summary	308,000	
Cost of Goods Sold		208,000
Freight-out		7,000
Insurance Expense		12,000
Rent Expense		20,000
Salary Expense		61,000
Income Summary	21,000	
Retained Earnings		21,000

(Note: These entries can be combined into one or two entries.)

EXERCISE 3-13 (10-15 minutes)

<u>Accounts</u>	<u>Adjusted Trial Balance</u>		<u>Income Statement</u>		<u>Balance Sheet</u>	
	<u>Dr.</u>	<u>Cr.</u>	<u>Dr.</u>	<u>Cr.</u>	<u>Dr.</u>	<u>Cr.</u>
Cash	9,000				9,000	
Merchandise Inventory	80,000				80,000	
Sales		450,000		450,000		
Sales Returns and Allowances	10,000		10,000			
Sales Discounts	5,000		5,000			
Cost of Goods Sold	250,000		250,000			

EXERCISE 3-14 (10-15 minutes)

- (a) \$9,000 (d) \$100,000
 (b) \$25,000 (e) \$57,000
 (c) \$10,000

EXERCISE 3-15 (20-25 minutes)

(a) Sales	\$78,000
*Sales returns	<u>(4,000)</u>
Net sales	<u>\$74,000</u>
(b) Beginning inventory	\$16,000
Purchases	88,000
Purchase returns	<u>(6,000)</u>
Goods available for sale	98,000
*Ending inventory	<u>(34,000)</u>
Cost of goods sold	<u>\$64,000</u>

EXERCISE 3-15 (Continued)

(c)	*Sales	\$99,000	
	Sales returns	<u>(5,000)</u>	
	Net sales	<u>\$94,000</u>	
(d)	*Beginning inventory	\$ 30,000	
	Purchases	100,000	
	Purchase returns	<u>(10,000)</u>	
	Goods available for sale	120,000	
	Ending inventory	<u>(48,000)</u>	
	Cost of goods sold	<u>\$ 72,000</u>	
(e)	Beginning inventory	\$ 44,000	
	*Purchases	108,000	
	Purchase returns	<u>(8,000)</u>	
	Goods available for sale	144,000	
	Ending inventory	<u>(30,000)</u>	
	Cost of goods sold	<u>\$114,000</u>	from (f) below
(f)	Net sales	\$132,000	
	*Cost of goods sold	<u>(114,000)</u>	
	Gross profit	<u>\$ 18,000</u>	
(g)	Sales	\$100,000	
	Sales returns	<u>(9,000)</u>	
	*Net sales	<u>\$ 91,000</u>	
(h)	Beginning inventory	\$ 24,000	
	Purchases	85,000	
	*Purchase returns	<u>(9,000)</u>	
	Goods available for sale	100,000	
	Ending inventory	<u>(28,000)</u>	
	Cost of goods sold	<u>\$ 72,000</u>	

EXERCISE 3-15 (Continued)

(i) Net sales	\$91,000
Cost of goods sold	<u>(72,000)</u>
*Gross profit	<u>\$19,000</u>

EXERCISE 3-16 (10-15 minutes)

Inventory, September 1, 2004		\$ 17,500
Purchases	\$149,400	
Less: Purchase returns and allowances	<u>2,000</u>	
Net purchases	147,400	
Add: Freight-in	<u>4,000</u>	
Cost of goods purchased		<u>151,400</u>
Cost of goods available for sale		168,900
Inventory, August 31, 2005		<u>25,000</u>
Cost of goods sold		<u>\$143,900</u>

EXERCISE 3-17 (10-15 minutes)

Sales	410,000	
Cost of Goods Sold		225,700
Sales Returns and Allowances.....		12,000
Sales Discounts		15,000
Selling Expenses		16,000
Administrative Expenses		38,000
Income Tax Expense		30,000
Income Summary		73,300

(or)

Sales	410,000	
Income Summary		410,000

EXERCISE 3-17 (Continued)

Income Summary	336,700	
Cost of Goods Sold		225,700
Sales Returns and Allowances		12,000
Sales Discounts		15,000
Selling Expense		16,000
Administrative Expense		38,000
Income Tax Expense		30,000
Income Summary	73,300	
Retained Earnings		73,300
Retained Earnings	18,000	
Dividends		18,000

EXERCISE 3-18 (15-20 minutes)

R. L. STEIN ROOFING
Work Sheet

For the Month Ended March 31, 2005

Account Titles	Trial Balance		Adjustments		Adjusted Trial Balance		Income Statement		Balance Sheet	
	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.
Cash	2,300				2,300				2,300	
Accounts Receivable	2,600				2,600				2,600	
Roofing Supplies	1,100		(a)	580	520				520	
Equipment	6,000				6,000				6,000	
Accumulated Depr.		1,200	(b)	120		1,320				1,320
Accounts Payable		1,100				1,100				1,100
Unearned Service Revenue		300	(c)	200		100				100
Common Stock		6,400				6,400				6,400
Retained Earnings		600				600				600
Service Revenue		3,000	(c)	200		3,200		3,200		
Salaries Expense	500		(d)	850	1,350			1,350		
Miscellaneous Expense	100				100			100		
Totals	<u>12,600</u>	<u>12,600</u>								
Supplies Expense			(a)	580	580			580		
Depreciation Expense			(b)	120	120			120		
Salaries Payable			(d)	850		850				850
Totals			<u>1,750</u>	<u>1,750</u>	<u>13,570</u>	<u>13,570</u>	<u>2,150</u>	<u>3,200</u>	<u>11,420</u>	<u>10,370</u>
Net Income							<u>1,050</u>			<u>1,050</u>
Totals					<u>3,200</u>	<u>3,200</u>		<u>11,420</u>	<u>11,420</u>	

Key: (a) Record supplies expense.

(b) Record depreciation expense.

(c) Unearned service revenue earned.

(d) Salaries accrued.

EXERCISE 3-19 (20-25 minutes)

**Ed Bradley Co.
Work Sheet (partial)
For the Month Ended April 30, 2005**

Account Titles	Adjusted Trial Balance		Income Statement		Balance Sheet	
	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.
Cash	19,472				19,472	
Accounts receivable	6,920				6,920	
Prepaid rent	2,280				2,280	
Equipment	18,050				18,050	
Accum. depreciation		4,895				4,895
Notes payable		5,700				5,700
Accounts payable		5,472				5,472
Bradley, capital		34,960				34,960
Bradley, drawing	6,650				6,650	
Services revenue		11,590		11,590		
Salaries expense	6,840		6,840			
Rent expense	2,260		2,260			
Depreciation expense	145		145			
Interest expense	83		83			
Interest payable		83				83
Totals	<u>62,700</u>	<u>62,700</u>	<u>9,328</u>	<u>11,590</u>	<u>53,372</u>	<u>51,110</u>
Net income			<u>2,262</u>			<u>2,262</u>
Totals			<u>11,590</u>	<u>11,590</u>	<u>53,372</u>	<u>53,372</u>

EXERCISE 3-19 (Continued)

**Ed Bradley Co.
Balance Sheet
April 30, 2005**

Assets

Current Assets		
Cash		\$19,472
Accounts receivable		6,920
Prepaid rent		<u>2,280</u>
Total current assets		28,672
Property, plant, and equipment		
Equipment	\$18,050	
Less Accumulated depreciation	<u>(4,895)</u>	<u>13,155</u>
Total assets		<u>\$41,827</u>

Liabilities and Owner's Equity

Current liabilities		
Accounts payable		\$ 5,472
Interest payable		83
Notes payable		<u>5,700</u>
Total current liabilities		11,255
Owner's equity		
Bradley, Capital		<u>30,572*</u>
Total liabilities and owner's equity		<u>\$41,827</u>

***Beg. Balance – Drawings + Net Income = Ending Balance**

$$\mathbf{\$34,960 \quad - \quad \$6,650 \quad + \quad \$2,262 \quad = \quad \$30,572}$$

EXERCISE 3-20 (10-15 minutes)

**Jurassic Park Co.
Worksheet (partial)
For Month Ended February 28, 2005**

Account Titles	Trial Balance		Adjustments		Adjusted Trial Balance		Income Statement		Balance Sheet		
	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	
Supplies	1,756			(a) 1,041	715					715	
Accumulated depreciation		6,939		(b) 257		7,196					7,196
Interest payable		150		(c) 50		200					200
Supplies expense			(a) 1,041		1,041		1,041	1,041			
Depreciation expense			(b) 257		257		257	257			
Interest expense			(c) 50		50		50	50			

The following accounts and amounts would be shown in the February income statement:

Supplies expense	\$1,041
Depreciation expense	257
Interest expense	50

EXERCISE 3-21 (10-15 minutes)
J1

Date	Account Titles and Explanation	Ref.	Debit	Credit
Mar. 1	Cash Common Stock (Investment of cash in business)		50,000	50,000
3	Land Building Equipment Cash (Purchased Lee Janzen's Golf Land)		10,000 22,000 6,000	38,000
5	Advertising Expense Cash (Paid for advertising)		1,600	1,600
6	Prepaid Insurance Cash (Paid for one-year insurance policy)		1,480	1,480
10	Equipment Accounts Payable (Purchased equipment on account)		2,500	2,500
18	Cash Service Revenue (Received cash for services performed)		1,200	1,200
25	Dividends Cash (Declared and paid a \$500 cash dividend)		500	500
30	Wages Expense Cash (Paid wages expense)		900	900
30	Accounts Payable Cash (Paid creditor on account)		2,500	2,500
31	Cash Service Revenue (Received cash for services performed)		750	750

***EXERCISE 3-22 (15-20 minutes)**

**Jill Accardo, M.D.
Conversion of Cash Basis to Accrual Basis
For the Year 2005**

Excess of cash collected over cash disbursed	
(\$142,600 – \$55,470)	\$87,130
Add increase in accounts receivable (\$9,250 – \$15, 927)	6,677
Deduct increase in unearned service revenue (\$2,840 – \$4,111)	(1,271)
Add decrease in accrued expense (\$3,435 – \$2,108)	1,327
Add increase in prepaid expenses (\$1,917 – \$3,232)	<u>1,315</u>
Net income on an accrual basis	<u>\$95,178</u>

Alternate solution:

**Jill Accardo, M.D.
Conversion of Income Statement
from Cash Basis to Accrual Basis
For the Year 2005**

	<u>Cash Basis</u>	<u>Adjustments</u>	<u>Add</u> <u>Deduct</u>	<u>Accrual Basis</u>
Revenue from fees:	\$142,600			
–Accounts receivable, Jan. 1			\$9,250	
+Accounts receivable, Dec. 31		\$15,297		
+Unearned service revenue, Jan. 1		2,840		
–Unearned service revenue, Dec. 31			4,111	
Restated revenue from fees				\$148,006
Operating expenses:	55,470			
–Accrued expenses, Jan. 1			3,435	
+Accrued expenses, Dec. 31		2,108		
+Prepaid expenses, Dec. 31		1,917		
–Prepaid expenses, Dec. 31			3,232	
Restated operating expenses				52,828
Net income—cash basis	<u>\$ 87,130</u>			
Net income—accrual basis				<u>\$ 95,178</u>

***EXERCISE 3-23 (10-15 minutes)**

**(a) Wayne Rogers Corp.
Income Statement (Cash Basis)
For the Year Ended December 31,**

	<u>2003</u>	<u>2004</u>
Sales	\$295,000	\$515,000
Expenses	<u>225,000</u>	<u>272,000</u>
Net income	<u>\$ 70,000</u>	<u>\$243,000</u>

**(b) Wayne Rogers Corp.
Income Statement (Accrual Basis)
For the Year Ended December 31,**

	<u>2003</u>	<u>2004</u>
Sales*	\$485,000	\$445,000
Expenses**	<u>277,000</u>	<u>255,000</u>
Net income	<u>\$208,000</u>	<u>\$190,000</u>

***2003: \$295,000 + \$160,000 + \$30,000 = \$485,000**

2004: \$355,000 + \$90,000 = \$445,000

****2003: \$185,000 + \$67,000 + \$25,000 = \$277,000**

2004: \$40,000 + \$160,000 + \$55,000 = \$255,000

***EXERCISE 3-24 (20-25 minutes)**

(a) Adjusting Entries:

1.	Insurance Expense	1,100	
	Prepaid Insurance.....		1,100
2.	Rental Revenue	600	
	Unearned Rental Revenue		600
3.	Advertising Materials.....	290	
	Advertising Expense		290
4.	Interest Expense	770	
	Interest Payable		770

(b) Reversing Entries:

1.	No reversing entry required.		
2.	Unearned Rental Revenue.....	600	
	Rental Revenue.....		600
3.	Advertising Expense.....	290	
	Advertising Materials		290
4.	Interest Payable.....	770	
	Interest Expense		770

TIME AND PURPOSE OF PROBLEMS

Problem 3-1 (Time 25-35 minutes)

Purpose—to provide an opportunity for the student to post daily transactions to a “T” account ledger, take a trial balance, prepare an income statement, a balance sheet and a statement of owner’s equity, close the ledger, and take a post-closing trial balance. The problem deals with routine transactions of a professional service firm and provides a good integration of the accounting process.

Problem 3-2 (Time 35-40 minutes)

Purpose—to provide an opportunity for the student to prepare adjusting entries, and prepare financial statements (income statement, balance sheet, and statement of retained earnings). The student also is asked to analyze two transactions to find missing amounts.

Problem 3-3 (Time 25-30 minutes)

Purpose—to provide an opportunity for the student to prepare adjusting entries. The adjusting entries are fairly complex in nature.

Problem 3-4 (Time 40-50 minutes)

Purpose—to provide an opportunity for the student to complete a worksheet and then prepare a classified balance sheet. In addition, adjusting and closing entries must be made and a post-closing trial balance prepared.

Problem 3-5 (Time 40-50 minutes)

Purpose—to provide an opportunity for the student to complete a work sheet and then prepare an income statement, retained earnings statement, and a balance sheet. In addition, adjusting and closing entries must be made and a post-closing trial balance prepared.

Problem 3-6 (Time 15-20 minutes)

Purpose—to provide the student with an opportunity to determine what adjusting entries need to be made to specific accounts listed in a partial trial balance. The student is also required to determine the amounts of certain revenue and expense items to be reported in the income statement.

Problem 3-7 (Time 25-35 minutes)

Purpose—to provide the student with an opportunity to prepare year-end adjusting entries from a trial balance and related information presented. The problem also requires the student to prepare an income statement, a balance sheet, and a statement of owner’s equity. The problem covers the basics of the end-of-period adjusting process.

Problem 3-8 (Time 25-35 minutes)

Purpose—to provide an opportunity for the student to figure out the year-end adjusting entries that were made from a trial balance and an adjusted trial balance. The student is also required to prepare an income statement, a statement of retained earnings, and a balance sheet. In addition, the student needs to answer a number of questions related to specific accounts.

Problem 3-9 (Time 30-40 minutes)

Purpose—to provide an opportunity for the student to prepare adjusting, closing, and reversing entries. The student is also required to post the entries to a “T” account ledger, and take a pre-closing and a post-reversing trial balance. This problem presents basic adjustments including a number of accruals and deferrals. It provides the student with an integrated flow of the year-end accounting process.

Problem 3-10 (Time 30-35 minutes)

Purpose—to provide an opportunity for the student to prepare adjusting and closing entries from a trial balance and related information. The student is also required to post the entries to “T” accounts.

***Problem 3-11** (Time 35-40 minutes)

Purpose—to provide an opportunity for the student to prepare and compare (a) cash basis and accrual basis income statements, (b) cash basis and accrual basis balance sheets, and (c) to discuss the weaknesses of cash basis accounting.

SOLUTIONS TO PROBLEMS

PROBLEM 3-1

(a) (Explanations are omitted.) and (d)

Cash			
Sept.	1	20,000	
	8	1,690	
	20	980	
	30	Bal	
		12,533	

Furniture and Equipment			
Sept.	2	17,280	

Isao Aoki, Capital			
Sept.	19	3,000	
	30	Bal.	
	30	Bal.	
		22,707	

Accounts Receivable			
Sept.	14	5,120	
	25	2,110	
	30	Bal.	
		6,250	

Accounts Payable			
Sept.	18	3,600	
	2	Bal.	
	30	Bal.	
		17,280	
		13,680	

Rent Expense			
Sept.	4	<u>680</u>	
	30	<u>680</u>	

Service Revenue			
Sept.	30	8,920	
	8	1,690	
	14	5,120	
	25	<u>2,110</u>	
		<u>8,920</u>	

Supplies on Hand			
Sept.	5	942	
	30	330	
	30	Bal.	
		612	

Miscellaneous Office Expense			
Sept.	10	430	
	30	85	
		<u>515</u>	
	30	<u>515</u>	

Accumulated Depreciation			
	30	288	

Office Salaries Expense			
Sept.	30	<u>1,400</u>	
	30	<u>1,400</u>	

Supplies Expense			
Sept.	30	<u>330</u>	
	30	<u>330</u>	

PROBLEM 3-1 (Continued)

Depreciation Expense				Income Summary			
Sept. 30		<u>288</u>	Sept. 30	<u>288</u>	Sept. 30	680	8,920
					30	515	
					30	1,400	
					30	330	
					30	288	
					30 Inc.	<u>5,707</u>	
						<u>8,920</u>	<u>8,920</u>

(b) **Isao Aoki, D.D.S.**
Trial Balance
September 30

	<u>Debit</u>	<u>Credit</u>
Cash	12,533	
Accounts Receivable	6,250	
Supplies on Hand	612	
Furniture and Equipment	17,280	
Accumulated Depreciation		288
Accounts Payable		13,680
Isao Aoki, Capital		17,000
Service Revenue		8,920
Rent Expense	680	
Miscellaneous Office Expense	515	
Office Salaries Expense	1,400	
Supplies Expense	330	
Depreciation Expense	<u>288</u>	
	<u>39,888</u>	<u>39,888</u>

PROBLEM 3-1 (Continued)

(c)

**Isao Aoki, D.D.S.
Income Statement
For the Month of September**

Service revenue		\$8,920
Expenses:		
Rent expense	\$ 680	
Supplies expense	330	
Office salaries expense	1,400	
Depreciation expense	288	
Miscellaneous office expense	<u>515</u>	
Total expenses		<u>3,213</u>
Net income		<u>\$5,707</u>

**Isao Aoki, D.D.S.
Balance Sheet
As of September 30**

Assets		Liabilities and Owner's Equity	
Cash	\$12,533	Accounts payable	\$13,680
Accounts receivable	6,250	Isao Aoki, Capital	22,707
Supplies	612		
Furniture and equip.	17,280		
Accum. depreciation	<u>(288)</u>	Total liabilities and	
Total assets	<u>\$36,387</u>	owner's equity	<u>\$36,387</u>

PROBLEM 3-1 (Continued)

**Isao Aoki, D.D.S.
Statement of Owner's Equity
For the Month of September**

Aoki, Capital September 1	\$20,000
Add: Net income for September	<u>5,707</u>
	25,707
Deduct: Withdrawal by owner	<u>3,000</u>
Aoki, Capital September 30	<u>\$22,707</u>

(e)

**Isao Aoki, D.D.S.
Post-closing Trial Balance
September 30**

	<u>Debit</u>	<u>Credit</u>
Cash	12,533	
Accounts Receivable	6,250	
Supplies on Hand	612	
Furniture and Equipment	17,280	
Accumulated Depreciation		288
Accounts Payable		13,680
Isao Aoki, Capital		<u>22,707</u>
Totals	<u>36,675</u>	<u>36,675</u>

PROBLEM 3-2

(a)	Dec. 31	Accounts Receivable.....	1,500	
		Advertising Revenue.....		1,500
	31	Unearned Advertising Revenue	1,400	
		Advertising Revenue.....		1,400
	31	Art Supplies Expense	3,400	
		Art Supplies		3,400
	31	Depreciation Expense	7,000	
		Accumulated Depreciation.....		7,000
	31	Interest Expense	150	
		Interest Payable.....		150
	31	Insurance Expense	850	
		Prepaid Insurance		850
	31	Salaries Expense	1,300	
		Salaries Payable		1,300

PROBLEM 3-2 (Continued)

**(b) YOUNT ADVERTISING AGENCY
Income Statement
For the Year Ended December 31, 2005**

Revenues		
Advertising revenue		\$61,500
Expenses		
Salaries expense.....	\$11,300	
Depreciation expense.....	7,000	
Rent expense	4,000	
Art supplies expense.....	3,400	
Insurance expense	850	
Interest expense	<u>500</u>	
Total expenses.....		<u>\$27,050</u>
Net income		<u>\$34,450</u>

**YOUNT ADVERTISING AGENCY
Statement of Retained Earnings
For the Year Ended December 31, 2005**

Retained Earnings, Jan. 1, 2005.....	\$ 3,500
Add: Net income	<u>34,450</u>
Retained Earnings, Dec. 31, 2005	<u>\$37,950</u>

PROBLEM 3-2 (Continued)

YOUNT ADVERTISING AGENCY

Balance Sheet

December 31, 2005

Assets

Cash		\$11,000
Accounts receivable.....		21,500
Art supplies		5,000
Prepaid insurance.....		2,500
Printing equipment	\$60,000	
Less: Accumulated depreciation—printing equipment...	<u>35,000</u>	<u>25,000</u>
Total assets		<u>\$65,000</u>

Liabilities and Stockholders' Equity

Liabilities

Notes payable	\$ 5,000	
Accounts payable	5,000	
Interest payable	150	
Unearned advertising revenue	5,600	
Salaries payable.....	<u>1,300</u>	
Total liabilities.....		\$17,050

Stockholders' equity

Common stock.....	\$10,000	
Retained earnings.....	<u>37,950</u>	<u>47,950</u>
Total liabilities and stockholders' equity		<u>\$65,000</u>

(c) (1) Interest is \$50 per month or 1% of the note payable. $1\% \times 12 = 12\%$ interest per year.

(2) Salaries Expense, \$11,300 less Salaries Payable 12/31/05, \$1,300 = \$10,000. Total Payments, \$13,500 – \$10,000 = \$3,500 Salaries Payable 12/31/04.

PROBLEM 3-3

1.	Dec. 31	Salaries Expense	2,000	
		Salaries Payable		2,000
		(5 X \$700 X 2/5) = \$1,400		
		(3 X \$500 X 2/5) = <u> 600</u>		
		Total accrued salaries <u>\$2,000</u>		
2.	31	Unearned Rent Revenue	74,000	
		Rent Revenue		74,000
		(5 X \$4,000 X 2) = \$40,000		
		(4 X \$8,500 X 1) = <u> 34,000</u>		
		Total rent earned <u>\$74,000</u>		
3.	31	Advertising Expense	4,900	
		Prepaid Advertising		4,900
		(A650 – \$500 per month		
		for 8 months) = \$4,000		
		(B974 – \$300 per month		
		for 3 months) = <u> 900</u>		
		Total advertising expense <u>\$4,900</u>		
4.	31	Interest Expense	5,600	
		Interest Payable		5,600
		(\$80,000 X 12% X 7/12)		

PROBLEM 3-4

**NOAH'S ARK
Work Sheet**

For the Year Ended September 30, 2005

(a)

Account Titles	Trial Balance		Adjustments		Adjusted Trial Balance		Income Statement		Balance Sheet	
	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.
Cash	37,400				37,400				37,400	
Supplies	18,600		(b) 17,400		1,200				1,200	
Prepaid Insurance	31,900		(a) 28,000		3,900				3,900	
Land	80,000				80,000				80,000	
Equipment	120,000				120,000				120,000	
Accum. Depreciation		36,200		(c) 6,800		43,000				43,000
Accounts Payable		14,600				14,600				14,600
Unearned Ad. Rev.		2,700	(d) 1,000			1,700				1,700
Mortgage Payable		50,000				50,000				50,000
N. Y. Berge, Capital		109,700				109,700				109,700
N. Y. Berge, Drawing	14,000								14,000	
Admissions Revenue		278,500		(d) 1,000		279,500		279,500		
Salaries Expense	109,000				109,000			109,000		
Repair Expense	30,500				30,500			30,500		
Advertising Expense	9,400				9,400			9,400		
Utilities Expense	16,900				16,900			16,900		
Prop. Taxes Expense	18,000		(e) 3,000		21,000			21,000		
Interest Expense	6,000		(f) 6,000		12,000			12,000		
Totals	<u>491,700</u>	<u>491,700</u>								
Insurance Expense			(a) 28,000		28,000			28,000		
Supplies Expense			(b) 17,400		17,400			17,400		
Interest Payable				(f) 6,000		6,000				6,000
Depreciation Expense				(c) 6,800	6,800			6,800		
Prop. Taxes Payable				(e) 3,000		3,000				3,000
Totals			<u>62,200</u>	<u>62,200</u>	<u>507,500</u>	<u>507,500</u>		<u>251,000</u>	<u>279,500</u>	<u>228,000</u>
Net Income								<u>28,500</u>		<u>28,500</u>
Totals								<u>279,500</u>	<u>279,500</u>	<u>256,500</u>

Key: (a) Expired Insurance; (b) Supplies Used; (c) Depreciation Expensed; (d) Admission Revenue Earned; (e) Accrued Property Taxes; (f) Accrued Interest Payable.

PROBLEM 3-4 (Continued)

(b)

**NOAH'S ARK
Balance Sheet
September 30, 2005**

Assets			
Current assets			
Cash	\$ 37,400		
Supplies	1,200		
Prepaid insurance.....	<u>3,900</u>		
Total current assets			42,500
Property, plant, and equipment			
Land	\$80,000		
Equipment	\$120,000		
Less: Accum. depreciation.....	<u>43,000</u>	<u>77,000</u>	<u>157,000</u>
Total assets.....			<u>\$199,500</u>
Liabilities and Owner's Equity			
Current liabilities			
Current maturity of long-term debt.....	\$ 10,000		
Accounts payable	14,600		
Unearned admissions revenue	1,700		
Interest payable	6,000		
Property taxes payable	<u>3,000</u>		
Total current liabilities			\$35,300
Long-term liabilities			
Mortgage payable		<u>40,000</u>	
Total liabilities			75,300
Owner's equity			
N.Y. Berge, Capital (\$109,700 + \$28,500 – \$14,000)			<u>124,200</u>
Total liabilities and owner's equity.....			<u>\$199,500</u>

PROBLEM 3-4 (Continued)

(c)	Sep. 30	Insurance Expense	28,000	
		Prepaid Insurance		28,000
	30	Supplies Expense	17,400	
		Supplies.....		17,400
	30	Depreciation Expense	6,800	
		Accum. Depreciation.....		6,800
	30	Unearned Admissions Revenue.....	1,000	
		Admissions Revenue		1,000
	30	Property Taxes Expense	3,000	
		Property Taxes Payable.....		3,000
	30	Interest Expense	6,000	
		Interest Payable.....		6,000
(d)	Sep. 30	Admissions Revenue.....	279,500	
		Income Summary		279,500
	30	Income Summary	251,000	
		Salaries Expense.....		109,000
		Repair Expense.....		30,500
		Insurance Expense.....		28,000
		Property Taxes Expense.....		21,000
		Supplies Expense.....		17,400
		Utilities Expense.....		16,900
		Interest Expense.....		12,000
		Advertising Expense.....		9,400
		Depreciation Expense.....		6,800

PROBLEM 3-4 (Continued)

30	Income Summary	28,500	
	N. Y. Berge, Capital		28,500
30	N. Y. Berge, Capital.....	14,000	
	N. Y. Berge, Drawing.....		14,000

(e) **NOAH'S ARK**
Post-Closing Trial Balance
September 30, 2005

	<u>Debit</u>	<u>Credit</u>
Cash	\$ 37,400	
Supplies.....	1,200	
Prepaid Insurance	3,900	
Land	80,000	
Equipment	120,000	
Accumulated Depreciation		\$ 43,000
Accounts Payable.....		14,600
Unearned Admissions Revenue		1,700
Interest Payable		6,000
Property Taxes Payable		3,000
Interest Payable		6,000
Mortgage Payable.....		50,000
N. Y. Berge, Capital		<u>124,200</u>
	<u>\$242,500</u>	<u>\$242,500</u>

PROBLEM 3-5

BECKY BISHOP FASHION CENTER
Work Sheet
For the Year Ended November 30, 2005

(a)

Account Titles	Trial Balance		Adjustments		Adjusted Trial Balance		Income Statement		Balance Sheet	
	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.
Cash	26,700				26,700				26,700	
Accounts Receivable	33,700				33,700				33,700	
Merchandise Inventory	45,000				45,000				45,000	
Store Supplies	5,500		(a)	2,000	3,500				3,500	
Store Equipment	85,000				85,000				85,000	
Accumulated Depr.— Store Equipment		18,000	(b)	9,000		27,000				27,000
Delivery Equipment	48,000				48,000				48,000	
Accumulated Depr.— Delivery Equipment		6,000	(c)	7,000		13,000				13,000
Notes Payable		51,000				51,000				51,000
Accounts Payable		48,500				48,500				48,500
Common Stock		90,000				90,000				90,000
Retained Earnings		8,000				8,000				8,000
Sales		757,200				757,200		757,200		
Sales Returns and Allowances	4,200				4,200			4,200		
Cost of Goods Sold	497,400				497,400			497,400		
Salaries Expense	140,000				140,000			140,000		
Advertising Expense	26,400				26,400			26,400		
Utilities Expense	14,000				14,000			14,000		
Repair Expense	12,100				12,100			12,100		
Delivery Expense	16,700				16,700			16,700		
Rent Expense	24,000				24,000			24,000		
Totals	<u>978,700</u>	<u>978,700</u>								
Store Supplies Expense			(a)	2,000	2,000			2,000		
Depreciation Expense— Store Equipment			(b)	9,000	9,000			9,000		
Depreciation Expense— Delivery Equipment			(c)	7,000	7,000			7,000		
Interest Expense			(d)	11,000	11,000			11,000		
Interest Payable				11,000		11,000				
Totals			<u>29,000</u>	<u>29,000</u>	<u>1,005,700</u>	<u>1,005,700</u>		<u>763,800</u>	<u>757,200</u>	<u>241,900</u>
Net Loss								<u>6,600</u>		<u>6,600</u>
Totals							<u>763,800</u>	<u>763,800</u>	<u>248,500</u>	<u>248,500</u>

Key: (a) Store supplies used, (b) Depr. expense—store equipment, (c) Depr. expense—delivery equipment, (d) Accrued interest payable.

PROBLEM 3-5 (Continued)

**(b) BECKY BISHOP FASHION CENTER
Income Statement
For the Year Ended November 30, 2005**

Sales revenue		
Sales.....		\$757,200
Less: Sales returns and allowances....		<u>4,200</u>
Net sales		753,000
Cost of goods sold		<u>497,400</u>
Gross profit		255,600
Operating expenses		
Selling expenses		
Salaries expense	\$98,000	
(\$140,000 x 70%)		
Advertising expense	26,400	
Rent expense	19,200	
(\$24,000 x 80%)		
Delivery expense	16,700	
Utilities expense	11,200	
(\$14,000 x 80%)		
Depr. exp.—store equipment	9,000	
Depr. exp.—deliv. equipment....	7,000	
Stores supplies expense	<u>2,000</u>	
Total selling expenses		\$189,500
Administrative expenses		
Salaries expense.....	42,000	
(\$140,000 x 30%)		
Repair expense	12,100	
Rent expense.....	4,800	
(\$24,000 x 20%)		
Utilities expense	<u>2,800</u>	
(\$14,000 x 20%)		
Total admin. expenses		<u>61,700</u>
Total oper. expenses...		<u>251,200</u>
Income from operations.....		4,400
Other expenses and losses		
Interest expense		<u>11,000</u>
Net loss.....		<u>\$ 6,600</u>

PROBLEM 3-5 (Continued)

(c)	Nov. 30	Store Supplies Expense	2,000	
		Store Supplies		2,000
	30	Depr. Expense—Store Equipment	9,000	
		Accumulated Depreciation—		
		Store Equipment.....		9,000
	30	Depr. Expense—Delivery Equipment.....	7,000	
		Accumulated Depreciation—		
		Delivery Equipment.....		7,000
	30	Interest Expense	11,000	
		Interest Payable.....		11,000

BECKY BISHOP FASHION CENTER
Retained Earnings Statement
For the Year Ended November 30, 2005

Retained Earnings, Dec. 1, 2004	\$8,000
Less: Net loss.....	<u>6,600</u>
Retained Earnings, Nov. 30, 2005	<u>\$1,400</u>

PROBLEM 3-5 (Continued)

BECKY BISHOP FASHION CENTER
Balance Sheet
November 30, 2005

Assets			
Current assets			
Cash		\$ 26,700	
Accounts receivable.....		33,700	
Merchandise inventory.....		45,000	
Store supplies		<u>3,500</u>	
Total current assets			\$108,900
Property, plant, and equipment			
Store equipment	\$85,000		
Accum. depr.—store equipment	<u>27,000</u>	\$58,000	
Delivery equipment.....	48,000		
Accum. depr.—delivery equipment ...	<u>13,000</u>	<u>35,000</u>	<u>93,000</u>
Total assets.....			<u>\$201,900</u>
Liabilities and Stockholders' Equity			
Current liabilities			
Notes payable due next year		\$ 30,000	
Accounts payable		48,500	
Interest payable		<u>11,000</u>	
Total current liabilities			\$89,500
Long-term liabilities			
Notes payable			<u>21,000</u>
Total liabilities			110,500
Stockholders' equity			
Common Stock		90,000	
Retained Earnings		<u>1,400</u>	<u>91,400</u>
Total liabilities and stockholders' equity			<u>\$201,900</u>

PROBLEM 3-5 (Continued)

(d)	Nov. 30	Sales.....	757,200	
		Income Summary		757,200
	30	Income Summary.....	763,800	
		Sales Returns and Allowances		4,200
		Cost of Goods Sold.....		497,400
		Salaries Expense.....		140,000
		Advertising Expense.....		26,400
		Utilities Expense.....		14,000
		Repair Expense.....		12,100
		Delivery Expense.....		16,700
		Rent Expense.....		24,000
		Store Supplies Expense		2,000
		Depreciation Expense—Store Equipment.....		9,000
		Depreciation Expense—Delivery Equipment.....		7,000
		Interest Expense.....		11,000
	30	Retained Earnings	6,600	
		Income Summary		6,600

PROBLEM 3-5 (Continued)

**(e) BECKY BISHOP FASHION CENTER
Post-Closing Trial Balance
November 30, 2005**

	<u>Debit</u>	<u>Credit</u>
Cash	\$ 26,700	
Accounts Receivable	33,700	
Merchandise Inventory	45,000	
Store Supplies	3,500	
Store Equipment.....	85,000	
Accumulated Depreciation—Store Equipment ...		\$ 27,000
Delivery Equipment.....	48,000	
Accumulated Depreciation—Delivery Equipment		13,000
Notes Payable		51,000
Accounts Payable.....		48,500
Interest Payable		11,000
Common Stock		90,000
Retained Earnings		1,400
	<u>\$241,900</u>	<u>\$241,900</u>

PROBLEM 3-6

(a)	-1-	Depreciation Expense	9,500	
		Accumulated Depreciation of Equipment (1/16 X \$152,000)		9,500
	-2-	Interest Expense	1,800	
		Interest Payable (\$90,000 X 10% X 72/360)		1,800
	-3-	Admissions Revenue	50,000	
		Unearned Admissions Revenue (2,000 X \$25)		50,000
	-4-	Prepaid Advertising	1,100	
		Advertising Expense		1,100
	-5-	Salaries Expense	4,700	
		Salaries Payable		4,700

- (b) (1) Interest expense, \$3,200 (\$1,400 + \$1,800).
 (2) Admissions Revenue, \$330,000 (\$380,000 – \$50,000).
 (3) Advertising expense, \$12,580 (\$13,680 – \$1,100).
 (4) Salaries expense, \$62,300 (\$57,600 + \$4,700).

PROBLEM 3-7

(a)	-1-		
		6,900	
Service Revenue			
Unearned Service Revenue			6,900
	-2-		
Accounts Receivable		4,900	
Service Revenue			4,900
	-3-		
Bad Debt Expense		1,430	
Allowance for Doubtful Accounts			1,430
	-4-		
Insurance Expense		480	
Unexpired Insurance			480
	-5-		
Depreciation Expense—Furniture and Equipment		3,125	
Accum. Depr.—Furniture and Equipment			3,125
(\$25,000 X .125)			
	-6-		
Interest Expense		60	
Interest Payable			60
(\$7,200 X .10 X 30/360)			
	-7-		
Prepaid Rent		750	
Rent Expense			750
	-8-		
Office Salaries Expense		2,510	
Salaries Payable			2,510

PROBLEM 3-7 (Continued)

**(b) Muhammad Ali, Consulting Engineer
Income Statement
For the Year Ended December 31, 2005**

Service Revenue (\$100,000 – \$6,900 + \$4,900)		\$98,000
Deduct Expenses:		
Office salaries expense (\$28,500 + \$2,510)	\$31,010	
Heat, light, and water expense	1,080	
Rent expense (\$9,750 – \$750)	9,000	
Insurance expense	480	
Bad debt expense	1,430	
Depreciation expense	3,125	
Miscellaneous office expense	720	
Interest expense	<u>60</u>	
Total expenses		<u>46,905</u>
Net income		<u>\$51,095</u>

PROBLEM 3-7 (Continued)

**Muhammad Ali, Consulting Engineer
Balance Sheet
December 31, 2005**

Assets

Current assets

Cash \$31,500

Accounts receivable \$54,500

(49,600 + \$4,900)

Less: Allowance for doubtful accounts (2,180)* 52,320

Engineering supplies inventory 1,960

Unexpired insurance 620

(\$1,000 – 480)

Prepaid rent 750

Total current assets \$87,150

Furniture and equipment 25,000

Less: Accum. depreciation (9,375) 15,625

Total assets \$102,775

Liabilities and Owner's Equity

Current liabilities

Unearned service revenue \$ 6,900

Interest payable 60

Salaries payable 2,510

Notes payable 7,200 16,670

Muhammad Ali, Capital 86,105

(\$35,010 + \$51,095)

Total liabilities and capital \$102,775

*($\$750 + \$1,430$)

PROBLEM 3-7 (Continued)

**Muhammad Ali, Consulting Engineer
Statement of Owner's Equity
For the Year Ended December 31, 2005**

Muhammad Ali, Capital, as of January 1, 2005	\$52,010^a
Add: Net income	51,095
Deduct: Withdrawals	<u>(17,000)</u>
Muhammad Ali, Capital, as of December 31, 2005	<u>\$86,105</u>

^a Muhammad Ali, Capital—trial balance	\$35,010
Withdrawals during the year	<u>17,000</u>
Muhammad Ali, Capital, as of January 1, 2005	<u>\$52,010</u>

PROBLEM 3-8

(a)	Dec. 31	Account Receivable.....	3,000	
		Service Revenue		3,000
	31	Unearned Service Revenue	1,400	
		Service Revenue		1,400
	31	Art Supplies Expense.....	3,000	
		Art Supplies		3,000
	31	Depreciation Expense	6,750	
		Accumulated Depreciation— Printing Equipment		6,750
	31	Interest Expense	150	
		Interest Payable.....		150
	31	Insurance Expense	750	
		Prepaid Insurance		750
	31	Salaries Expense	1,500	
		Salaries Payable.....		1,500

PROBLEM 3-8 (Continued)

(b) ANA ALICIA ADVERTISING CORPORATION
Income Statement
For the Year Ended December 31, 2005

Revenues		
Service revenue		\$63,000
Expenses		
Salaries expense	\$11,500	
Art supplies expense	8,000	
Depreciation expense	6,750	
Rent expense	4,000	
Insurance expense	750	
Interest expense	<u>500</u>	
Total expenses		<u>31,500</u>
Net income		<u>\$31,500</u>

ANA ALICIA ADVERTISING CORPORATION
Statement of Retained Earnings
For the Year Ended December 31, 2005

Retained Earnings, January 1	\$ 4,500
Add: Net income	<u>31,500</u>
Retained Earnings, December 31	<u>\$36,000</u>

PROBLEM 3-8 (Continued)

ANA ALICIA ADVERTISING CORPORATION

Balance Sheet

December 31, 2005

Assets

Cash		\$ 7,000
Accounts receivable		22,000
Art supplies		5,500
Prepaid insurance		2,500
Printing equipment	\$60,000	
Less: Accum. depr.—printing equipment	<u>33,750</u>	<u>26,250</u>
Total assets		<u>\$63,250</u>

Liabilities and Stockholders' Equity

Liabilities

Accounts payable	\$ 5,000	
Interest payable	150	
Notes payable	5,000	
Unearned service revenue	5,600	
Salaries payable	<u>1,500</u>	
Total liabilities		\$17,250

Stockholders' equity

Common Stock	10,000	
Retained Earnings	<u>36,000</u>	
Total stockholders' equity		<u>46,000</u>
Total liabilities and stockholders' equity		<u>\$63,250</u>

PROBLEM 3-8 (Continued)

- (c) (1) **Total depreciable cost = $\$6,750 \times 8 = \$54,000$.**
Salvage value = cost $\$60,000$ less depreciable cost $\$54,000 = \$6,000$
- (2) **Interest is $\$50$ per month or 1% of the note payable.**
 $1\% \times 12 = 12\%$ interest per year.
- (3) **Salaries Expense, $\$11,500$ less Salaries Payable 12/31/05, $\$1,500 = \$10,000$. Total payments, $\$12,500 - \$10,000 = \$2,500$ Salaries Payable 12/31/04.**

PROBLEM 3-9

(a), (b), (d)

Cash	
Bal.	15,000

Unexpired Insurance			
Bal.	9,000	Adj.	3,500

Salaries Expense			
Bal.	80,000	Close	83,600
Adj.	<u>3,600</u>		
	<u>83,600</u>		<u>83,600</u>
		Rev.	3,600

Common Stock	
	Bal. 400,000

Accounts Receivable	
Bal.	13,000

Retained Earnings		
Bal.	82,000	
Inc.	<u>30,250</u>	
	112,250	

Maintenance Expense			
Bal.	<u>24,000</u>	Close	<u>24,000</u>

Allow. for Doubtful Accts.	
Bal.	1,100
Adj.	<u>850</u>
	1,950

Dues Revenue		
Bal.	200,000	
Adj.	8,900	
Cls.	<u>191,100</u>	
	<u>200,000</u>	
Rev.	8,900	

Depr. Expense—Buildings			
Adj.	<u>4,800</u>	Close	<u>4,800</u>

Land	
Bal.	350,000

Green Fee Revenue			
Close	<u>8,100</u>	Bal.	<u>8,100</u>

Depr. Expense—Equipment			
Adj.	<u>15,000</u>	Close	<u>15,000</u>

Buildings	
Bal.	120,000

Rental Revenue			
Close	16,800	Bal.	15,400
	<u>16,800</u>	Adj.	<u>1,400</u>
Rev.	1,400		<u>16,800</u>

Accum. Depr.—Equipment	
Bal.	70,000
Adj.	15,000

Accum. Depr. of Buildings	
Bal.	38,400
Adj.	<u>4,800</u>
	43,200

Utilities Expense			
Bal.	<u>54,000</u>	Close	<u>54,000</u>

Insurance Expense			
Adj.	<u>3,500</u>	Close	<u>3,500</u>

Rent Receivable	
Adj.	<u>\$1,400</u>
Rev.	<u>1,400</u>

Bad Debts Expense			
Adj.	<u>850</u>	Close	<u>850</u>

Income Summary			
Exp.	185,750	Inc.	216,000
Inc.	<u>30,250</u>		
	<u>216,000</u>		<u>216,000</u>

PROBLEM 3-9 (Continued)

Salaries Payable		Unearned Dues Revenue	
Rev.	<u>3,600</u>	Adj.	<u>3,600</u>
Rev.	<u>8,900</u>	Adj.	<u>8,900</u>

Equipment	
Bal.	150,000

(b)	-1-		
Depreciation Expense—Buildings		4,800	
Accumulated Depreciation of Buildings			4,800
(1/25 X \$120,000)			
	-2-		
Depreciation Expense—Equipment		15,000	
Accumulated Depreciation of Equipment			15,000
(\$10% X \$150,000)			
	-3-		
Insurance Expense		3,500	
Unexpired Insurance			3,500
	-4-		
Rent Receivable		1,400	
Rental Revenue			1,400
(1/11 X \$15,400)			
	-5-		
Bad Debts Expense		850	
Allowance for Doubtful Accounts			850
	-6-		
Salaries Expense		3,600	
Salaries Payable			3,600
	-7-		
Dues Revenue		8,900	
Unearned Dues Revenue			8,900

PROBLEM 3-9 (Continued)

**(c) Platteville Golf Club, Inc.
Adjusted Trial Balance
December 31, XXXX**

	<u>Dr.</u>	<u>Cr.</u>
Cash	\$15,000	
Accounts Receivable	13,000	
Allowance for Doubtful Accounts		\$1,950
Unexpired Insurance	5,500	
Land	350,000	
Building	120,000	
Accum. Depreciation of Buildings		43,200
Accum. Depreciation—Equipment		85,000
Rent Receivable	1,400	
Salaries Payable		3,600
Equipment	150,000	
Common Stock		400,000
Retained Earnings		82,000
Dues Revenue		191,100
Green Fee Revenue		8,100
Rental Revenue		16,800
Utilities Expense	54,000	
Bad Debts Expense	850	
Unearned Dues Revenue		8,900
Salaries Expense	83,600	
Maintenance Expense	24,000	
Depreciation Expense—Buildings	4,800	
Depreciation Expense—Equipment	15,000	
Insurance Expense	3,500	
	<u>\$840,650</u>	<u>\$840,650</u>

PROBLEM 3-9 (Continued)

(d)	-Dec. 31-		
Dues Revenue		191,100	
Green Fee Revenue		8,100	
Rental Revenue		16,800	
Income Summary			216,000
	-31-		
Income Summary		185,750	
Utilities Expense			54,000
Bad Debts Expense			850
Salaries Expense			83,600
Maintenance Expense			24,000
Depreciation Expense—Buildings			4,800
Depreciation Expense—Equipment			15,000
Insurance Expense			3,500
	-31-		
Income Summary		30,250	
Retained Earnings			30,250

PROBLEM 3-10

(a), (b), (c)

Cash	
Bal.	18,500

Accounts Receivable	
Bal.	42,000

Allow. for Doubtful Accts.	
	Bal. 700
	Adj. 1,400

Inventory	
Bal.	80,000

Furniture & Equipment	
Bal.	84,000

Accum. Depr. of F. & E.	
	Bal. 35,000
	Adj. 14,000

Prepaid Insurance	
Bal.	5,100
	Adj. 2,550

Notes Payable	
	Bal. 28,000

Admin. Salaries Expense	
Bal.	<u>65,000</u>
	Cls. <u>65,000</u>

Common Stock	
	Bal. 80,600

Sales	
Cls.	<u>600,000</u>
	Bal. <u>600,000</u>

Insurance Expense	
Adj.	<u>2,550</u>
	Cls. <u>2,550</u>

Sales Salaries Expense	
Bal.	50,000
	Cls. 52,400
Adj.	<u>2,400</u>
	<u>52,400</u>

Advertising Expense	
Bal.	6,700
	Adj. 700
	Close <u>6,000</u>
	<u>6,700</u>

Interest Expense	
Adj.	<u>3,360</u>
	Close <u>3,360</u>

Bad Debts Expense	
Adj.	<u>1,400</u>
	Cls. <u>1,400</u>

Office Expense	
Bal.	5,000
	Adj. 1,500
	Close <u>3,500</u>
	<u>5,000</u>

Prepaid Advertising Expense	
Adj.	700

Interest Payable	
	Adj. 3,360

Depr. Exp.—Furn. & Equip.	
Adj.	<u>14,000</u>
	Cls. <u>14,000</u>

Income Summary	
Exp.	546,210
Inc.	<u>53,790</u>
	<u>600,000</u>
	Sales 600,000
	<u>600,000</u>

Office Supplies	
Adj.	1,500

Salaries Payable	
	Adj. 2,400

Retained Earnings	
	Bal. 10,000
	Inc. <u>53,790</u>
	<u>63,790</u>

Cost of Goods Sold	
Bal.	<u>398,000</u>
	Cls. <u>398,000</u>

PROBLEM 3-10 (Continued)

(b)	-1-		
Bad Debts Expense		1,400	
 Allowance for Doubtful Accounts			1,400
	-2-		
Depreciation Expense—Furniture and Equipment (\$84,000 ÷ 6)		14,000	
 Accum. Depr. —Furniture and Equipment			14,000
	-3-		
Insurance Expense		2,550	
 Prepaid Insurance			2,550
	-4-		
Interest Expense		3,360	
 Interest Payable			3,360
	-5-		
Sales Salaries Expense		2,400	
 Salaries Payable			2,400
	-6-		
Prepaid Advertising Expense		700	
 Advertising Expense			700
	-7-		
Office Supplies		1,500	
 Office Expense			1,500

PROBLEM 3-10 (Continued)

(c)	Dec. 31		
Sales		600,000	
Income Summary			600,000
	Dec. 31		
Income Summary		546,210	
Cost of Goods Sold			398,000
Advertising Expense			6,000
Administrative Salaries Expense			65,000
Sales Salaries Expense			52,400
Office Expense			3,500
Insurance Expense			2,550
Bad Debt Expense			1,400
Depreciation Expense—Furniture and Equipment			14,000
Interest Expense			3,360
	Dec. 31		
Income Summary		53,790	
Retained Earnings			53,790

***PROBLEM 3-11**

**(a) Razorback Sales and Services
Income Statement
For the Month Ended January 31, 2005**

	(1) <u>Cash</u> <u>Basis</u>	(2) <u>Accrual</u> <u>Basis</u>
Revenues	\$75,000	\$105,750*
Expenses		
Cost of computers & printers:		
Purchased and paid	89,250**	
Sold		63,750***
Salaries	9,600	12,600
Rent	6,000	2,000
Other Expenses	<u>8,400</u>	<u>10,400</u>
Total expenses	<u>113,250</u>	<u>88,750</u>
Net income (loss)	<u>\$(38,250)</u>	<u>\$ 17,000</u>

* $(\$2,550 \times 30) + (\$4,500 \times 4) + (\$750 \times 15)$

** $(\$1,500 \times 40) + (\$3,000 \times 6) + (\$450 \times 25)$

*** $(\$1,500 \times 30) + (\$3,000 \times 4) + (\$450 \times 15)$

***PROBLEM 3-11 (Continued)**

**(b) Razorback Sales and Services
Balance Sheet
As of January 31, 2005**

	(1) <u>Cash Basis</u>	(2) <u>Accrual Basis</u>
<u>Assets</u>		
Cash	\$51,750 ^a	\$ 51,750 ^a
Accounts Receivable		30,750
Inventory		25,500 ^b
Prepaid rent	<u> </u>	<u>4,000</u>
Total assets	<u>\$51,750</u>	<u>\$112,000</u>
<u>Liabilities and Owners' Equity</u>		
Accounts payable		\$ 2,000
Salaries payable		3,000
Owners' equity	<u>\$51,750^c</u>	<u>107,000^d</u>
Total liabilities and owners' equity	<u>\$51,750</u>	<u>\$112,000</u>

^a Original investment	\$ 90,000
Cash sales	75,000
Cash purchases	(89,250)
Rent paid	(6,000)
Salaries paid	(9,600)
Other expenses	<u>(8,400)</u>
Cash balance Jan. 31	<u>\$ 51,750</u>

^b(10 @ \$1,500) + (2 @ \$3,000) + (10 @ \$450).

^cInitial investment minus net loss: \$90,000 – \$38,250.

^dInitial investment plus net income: \$90,000 + \$17,000.

***PROBLEM 3-11 (Continued)**

- (c) 1. The \$30,750 in receivables from customers is an asset and a future cash flow resulting from sales that is ignored. The cash basis understates the amount of revenues and inflow of assets in January from the sale of computers and printers by \$30,750.
2. The cost of computers and printers sold in January is overstated by \$25,500. The unsold computers and printers are an asset of \$25,500 in the form of inventory.
3. The cash basis ignores \$3,000 of the salaries that have been earned by the employees in January and will be paid in February.
4. Rent expense on the cash basis is overstated by \$4,000 under the cash basis. This prepayment is an asset in the form of two months' future right to the use of office, showroom, and repair space and should appear on the balance sheet.
5. Other operating expenses on a cash basis are understated by \$2,000 as is the liability for the unpaid portion of these expenses incurred in January.

FINANCIAL REPORTING PROBLEM

- (a) **December 31, 2001 total assets: \$14,606,000,000**
December 31, 2000 total assets: \$14,522,000,000

- (b) **December 31, 2001 cash and cash-equivalents: \$616,000,000**

- (c) **1999 research and development costs: \$1,056,000,000**
2001 research and development costs: \$1,084,000,000

- (d) **1999 net revenues: \$15,748,000,000**
2001 net revenues: \$16,079,000,000

- (e) **An adjusting entry for prepayments is necessary when the receipt/disbursement precedes the recognition in the financial statements. Accounts such as prepaid insurance and prepaid rent may be included in the Other current assets section. Both of these accounts would require an adjusting entry to recognize the proper amount of expense incurred during the period. In addition, depreciation expense is an adjusting entry related to a prepayment.**

- An adjusting entry for an accrual is necessary when recognition in the financial statements precedes the cash receipt/disbursement. Other adjusting entries probably made by 3M include interest revenue and expense and interest receivable and interest payable.**

- (f) **1999 Depreciation Expense: \$822,000,000**
2000 Depreciation Expense: \$915,000,000
2001 Depreciation Expense: \$916,000,000

(From note 8, supplemental cash flow information)

FINANCIAL STATEMENT ANALYSIS CASE

(a)	2001	2000	1999	% Change 2001	% Change 2000
Sales	\$8,853.30	\$6,954.70	\$6,984.20	27.30%	-0.42%
Operating Profit	1,167.90	989.80	828.80	17.99%	19.43%
Net Cash Flow less Capital Expenditures	855.50	650.00	529.00	31.62%	22.87%
Net Earnings	473.60	587.70	338.30	-19.41%	73.72%

- (b) Except for net earnings, Kellogg has reported strong performance in 2001 compared to 2000. The net cash flow measure showed the best improvement with better than a 30% growth. Sales also showed a strong improvement with 27% growth compared to essentially flat sales growth in 2000.

The one negative signal in Kellogg's reported results is its 19% decline in net earnings in 2001 compared to 2000. While still an increase over 1999, Kellogg reported a large increase in interest expense in 2001, which pulled down its bottom line. This increase was due mostly to the large increase in debt related to its Keebler acquisition in 2001.

The three positive trends are all supportive of Kellogg achieving its objective of creating more value in the future. It will be important that Kellogg better manage its debt levels and interest costs to ensure its success. Kellogg should be able to pay down its debt, if it continues its strong operating performance as indicated in the other trends.

COMPARATIVE ANALYSIS CASE

- (a) The Coca-Cola Company percentage increase is 7.6% computed as follows:

Total assets (December 31, 2001)	\$22,417
Total assets (December 31, 2000)	<u>\$20,834</u>
Difference	<u>\$ 1,583</u>

$$\$1,583 \div \$20,834 = \underline{\underline{\$7.6\%}}$$

PepsiCo, Inc.'s percentage increase is computed as follows:

Total assets (December 30, 2001)	\$21,695
Total assets (December 25, 2000)	<u>\$20,757</u>
Difference	<u>\$ 938</u>

$$\$938 \div \$20,757 = \underline{\underline{\$4.5\%}}$$

Coca-Cola Company had the larger increase.

- (b)

	5-Year Growth Rate	
	<u>The Coca-Cola Company</u>	<u>PepsiCo, Inc.</u>
Net sales	1.9%	3.9%
Income from continuing operations	2.6%	374.5%

- (c) The Coca-Cola Company had depreciation and amortization expense of \$803,000,000; PepsiCo, Inc. had depreciation and amortization expense of \$1,082,000,000.

PepsiCo has substantially more property, plant, and equipment and intangible assets than does Coca-Cola. PepsiCo is engaged in three different types of businesses: soft drinks, snack-food, and juices. As a result, it has more tangible fixed assets. In addition, PepsiCo has substantial intangible assets. Identifiable intangible assets primarily

COMPARATIVE ANALYSIS CASE (Continued)

arose from the allocation of purchase prices of businesses acquired and consist principally of reacquired franchise rights and trademarks. In addition, goodwill in the amount of \$3,374,000,000 is in PepsiCo's balance sheet. The amount of property, plant, and equipment and intangible assets reported for these two companies is as follows:

	<u>The Coca-Cola Company</u>	<u>PepsiCo, Inc.</u>
Property, plant, and equipment (net)	\$4,453,000,000	\$ 6,876,000,000
Intangible assets (net)	<u>2,579,000,000</u>	<u>4,841,000,000</u>
	\$7,032,000,000	\$11,717,000,000

RESEARCH CASE

- (a) Per page 15, SIC codes are assigned on the basis of a firm's "primary activity," which is determined by the principal product or group of products produced or distributed, or service rendered.
- (b) 12 = Coal mining; 271 = Newspapers; 3571 = Electronic computers; 7033 = Trailer parks and campsites; 75 = Auto repair, services, and parking; 872 = Accounting, auditing, and bookkeeping.
- (c) (1) 3949, (2) 0279, (3) 3951, (4) 5722, (5) 7311
- (d) Major group = 45. Industry group = 451. Industry = 4512

Per 2001 Wards directory: (1) AMR Corp. (\$19,703 B), (2) UAL Corp. (\$19,352), (3) Delta Air Lines Inc. (\$15,880), (4) Northwest Airlines Corp. (\$11,415), and (5) Continental Airlines (\$9,899). (Note: Subsidiaries of AMR, UAL, and Northwest are included in the listing. The question asks about parent companies.)

PROFESSIONAL SIMULATION 1

Journal Entries

Dec. 31	Accounts Receivable	1,500	
	Advertising Revenue		1,500
31	Unearned Advertising Revenue	1,400	
	Advertising Revenue		1,400
31	Art Supplies Expense	3,400	
	Art Supplies		3,400
31	Depreciation Expense	7,000	
	Accumulated Depreciation		7,000
31	Salaries Expense	1,300	
	Salaries Payable		1,300

Financial Statements

Nalezny Advertising Agency
Income Statement
For the Year Ended December 31, 2005

Revenues		
Advertising revenue		\$61,500
Expenses		
Salaries expense	\$11,300	
Depreciation expense	7,000	
Rent expense	4,000	
Art supplies expense	<u>3,400</u>	
Total expenses		<u>25,700</u>
Net income		<u>\$35,800</u>

Professional Simulation 1 (Continued)

Nalezny Advertising Agency
Balance Sheet
For the Year Ended December 31, 2005

Assets		
Cash		\$11,000
Accounts receivable		21,500
Art supplies		5,000
Printing equipment	\$60,000	
Less: Accumulated depreciation— printing equipment	<u>35,000</u>	<u>25,000</u>
Total Assets		<u>\$62,500</u>

Liabilities and Stockholders' Equity		
Liabilities		
Accounts payable	\$5,000	
Unearned advertising revenue	5,600	
Salaries payable	<u>1,300</u>	
Total liabilities		\$11,900
Stockholders' equity	\$10,000	
Common stock	<u>40,600*</u>	<u>50,600</u>
Retained earnings		<u>\$62,500</u>
Total liabilities and stockholders' equity		

*Retained earnings, Jan. 1, 2005	\$ 4,800
Add: Net income	<u>35,000</u>
Retained earnings, Dec. 31, 2005	<u>\$40,600</u>

Explanation

Following preparation of financial statements (see Illustration 3-6), Nalezny would prepare closing entries to reduce the temporary accounts to zero. Some companies prepare a post-closing trial balance and reversing entries.

PROFESSIONAL SIMULATION 2

Resources

	A	B	C	D	E	F	G	H	I
1	Bones Clinic								
2	Conversion of Income Statement from Cash Basis to Accrual Basis								
3	For the Year 2005								
4									
5	Receipts from fees								
6		Cash	Jan 1st Fees Receivable	Dec 31 Fees Receivable	Jan 1st Unearned Fees	Dec 31 Unearned Fees	Accrual Basis		
7	Receipts	146,000	(9,250)	16,100	2,840	(1,620)	154,070	The following function is inserted into this cell:=SUM(A7:E7)	
8									
9	Disbursements								
10			Jan 1st Accrued Expenses	Dec 31 Accrued Expenses	Jan 1 Prepaid Expenses	Dec 31 Prepaid Expenses			
11	Disbursements	(55,470)	3,435	(2,200)	(2,000)	1,775	(54,460)	The following function is inserted into this cell:=SUM(A11:E11)	
12									
13									
14	Receipts over Disbursements- Cash Basis	\$90,530				Net Income- Accrual Basis	\$99,610		
15									
16									
17									
18									
19									
20									
21									

Explanation

Dear Dr. Gleason:

Last week, you asked me to calculate net income on the accrual basis for Bones Clinic. For the year ending December 31, 2005, Bones Clinic earned \$99,610. The following explanation as well as the attached schedule should help you to understand how I derived this amount.

First, I determined how much of your cash collections resulted from work which you actually performed during 2005. Obviously, the accounts receivable existing on January 1, 2005 could not have been earned during 2005. Likewise, your ending receivables represent revenue which you earned during 2005 but were not paid for. Because cash collections include payments made on beginning receivables but not on year-end receivables, beginning accounts receivable must be subtracted from your cash collections while year-end accounts receivable must be added.

Professional Simulation 2 (Continued)

The same logic applies to your unearned revenues. As of January 1, 2005, these unearned revenues of \$2,840 represent treatment that your patients had paid for but had not yet received. At year end, a \$1,620 balance in this account indicates revenue which you collected but have not yet earned. Because the beginning unearned revenues were eventually earned during 2005, they must be added to 2005 cash collections while the ending balance must be deducted.

Next, I calculated your 2005 expenses. Accrued expenses at the beginning of the year represent those expenses incurred but not paid during 2004. Likewise, those at year-end were incurred during 2005 but not yet paid at year-end. Because cash disbursements include payments made on 2004 liabilities but not on 2005 liabilities existing at year-end, your 2005 disbursements must be adjusted for these items. To determine expenses resulting from operations during 2004, I subtracted the beginning accrued expenses balance and added the ending accrued expenses balance.

Finally, prepaid expenses represent money paid in advance for services which you have not yet received. Your beginning prepaid expenses represent 2004 expenses paid in advance while ending prepaid expenses indicate 2005 expenses. Thus, I added beginning prepaid expenses and subtracted the ending ones to derive 2004 expenses.

As a result, your gross revenue for 2004 is \$154,070, and your operating expenses are \$54,460, amounting to net income of \$99,610. The enclosed schedule provides supporting computations.

I hope that this information helps you. Thank you for giving me the opportunity to serve you.

Sincerely,

Your Name, C.P.A.

CHAPTER 4

Income Statement and Related Information

ASSIGNMENT CLASSIFICATION TABLE

Topics	Questions	Brief Exercises	Exercises	Problems	Cases
1. Income measurement concepts.	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 18, 20, 28, 31, 32, 33				3, 5, 6, 8, 9
2. Computation of net income from balance sheets and selected accounts.		1	1, 2, 7		
3. Single-step income statements; earnings per share.	11, 19, 23, 24	2, 8	3, 4, 5, 6, 7, 10, 15, 16	2, 3, 4, 5	1, 2, 8
4. Multiple-step income statements.	17	3	4, 5, 6, 8	1, 4	
5. Extraordinary items; accounting changes; discontinued operations; prior period adjustments; errors.	14, 15, 16, 27, 29	4, 5, 6, 7	9, 10, 12, 13	3, 4, 5, 6, 7	4, 7, 8, 9
6. Retained earnings statement.	30	9, 10	10, 11, 12, 16	1, 2, 4, 5, 6	
7. Intraproduct tax allocation.	21, 22, 25, 26, 27				
8. Comprehensive income.	34	11	14, 15, 16		10
9. Disposal of a component (discontinued operations).	35				

ASSIGNMENT CHARACTERISTICS TABLE

Item	Description	Level of Difficulty	Time (minutes)
E4-1	Computation of net income.	Simple	18-20
E4-2	Income statement items.	Simple	25-35
E4-3	Single-step income statement.	Moderate	20-25
E4-4	Multiple-step and single-step.	Simple	30-35
E4-5	Multiple-step and extraordinary items.	Moderate	30-35
E4-6	Multiple-step and single-step.	Moderate	30-40
E4-7	Compute income, EPS.	Simple	15-20
E4-8	Multiple-step statement with retained earnings.	Simple	30-35
E4-9	Earnings per share.	Simple	20-25
E4-10	Condensed income statement—periodic method.	Moderate	20-25
E4-11	Retained earnings statement.	Simple	20-25
E4-12	Earnings per share.	Moderate	15-20
E4-13	Change in accounting principle.	Moderate	15-20
E4-14	Comprehensive income.	Simple	15-20
E4-15	Comprehensive income.	Moderate	15-20
E4-16	Single-step statement, retained earnings statement, comprehensive income.	Moderate	30-35
P4-1	Multi-step income, retained earnings.	Moderate	30-35
P4-2	Single-step income, retained earnings.	Simple	25-30
P4-3	Irregular items.	Moderate	30-40
P4-4	Multi- and single-step income, retained earnings.	Moderate	45-55
P4-5	Irregular items.	Moderate	20-25
P4-6	Retained earnings statement, prior period adjustments.	Moderate	25-35
P4-7	Income statement and irregular items.	Moderate	25-35
C4-1	Identification of income statement deficiencies.	Simple	20-25
C4-2	Identify income statement deficiencies.	Simple	10-15
C4-3	All-inclusive vs. current operating.	Moderate	25-35
C4-4	Extraordinary items.	Moderate	20-25
C4-5	Earnings management.	Moderate	20-25
C4-6	Earnings management	Simple	15-20
C4-7	Income reporting items.	Moderate	30-35
C4-8	Identification of income statement weaknesses.	Moderate	30-40
C4-9	Classification of income statement items.	Moderate	20-25
C4-10	Comprehensive income.	Simple	10-15

ANSWERS TO QUESTIONS

1. The income statement is important because it provides investors and creditors with information that helps them predict the amount, timing, and uncertainty of future cash flows. It helps investors and creditors predict future cash flows in a number of different ways. First, investors and creditors can use the information on the income statement to evaluate the past performance of the enterprise. Second, the income statement helps users of the financial statements to determine the risk (level of uncertainty) of income--revenues, expenses, gains, and losses--and highlights the relationship among these various components.

It should be emphasized that the income statement is used by parties other than investors and creditors. For example, customers can use the income statement to determine a company's ability to provide needed goods or services, unions examine earnings closely as a basis for salary discussions, and the government uses the income statements of companies as a basis for formulating tax and economic policy.

2. Information on past transactions can be used to identify important trends that, if continued, provide information about future performance. If a reasonable correlation exists between past and future performance, predictions about future earnings and cash flows can be made. For example, a loan analyst can develop a prediction of future performance by estimating the rate of growth of past income over the past several periods and project this into the next period. Additional information about current economic and industry factors can be used to adjust the trend rate based on historical information.
3. Some situations in which changes in value are not recorded in income are:
 - a) Unrealized gains or losses on investments,
 - b) Changes in the market values of long term liabilities, such as bonds payable,
 - c) Changes (increases) in value of property, plant and equipment, such as land, natural resources, or equipment,
 - d) Changes (increases) in the values of intangible assets such as customer goodwill, brand value, or intellectual capital.

Note that some of these omissions arise because the items (e.g., brand value) are not recognized in financial statements, while others (value of land) are recorded in financial statements but measurement is at historical cost.

4. Some situations in which application of different accounting methods or estimates lead to comparison problems include:
 - a. Inventory methods - LIFO vs. FIFO,
 - b. Depreciation Methods—straight-line vs. accelerated,
 - c. Accounting for long-term contracts - percentage of completion vs. completed contract,
 - d. Estimates of useful lives or salvage values for depreciable assets,
 - e. Estimates of bad debts,
 - f. Estimates of warranty returns.
5. The transaction approach focuses on the activities that have occurred during a given period and instead of presenting only a net change, a description of the components that comprise the change is included. In the capital maintenance approach, only the net change (income) is reflected whereas the transaction approach not only provides the net change (income) but the components of income (revenues and expenses). The final net income figure should be the same under either approach given the same valuation base.

Questions Chapter 4 (Continued)

6. Earnings management is often defined as the planned timing of revenues, expenses, gains and losses to smooth out bumps in earnings. In most cases, earnings management is used to increase income in the current year at the expense of income in future years. For example, companies prematurely recognize sales before they are complete in order to boost earnings. Earnings management can also be used to decrease current earnings in order to increase income in the future. The classic case is the use of "cookie jar" reserves, which are established, by using unrealistic assumptions to estimate liabilities for such items as sales returns, loan losses, and warranty returns.
7. Earnings management has a negative effect on the quality of earnings if it distorts the information in a way that is less useful for predicting future cash flows. Within the Conceptual Framework, useful information is both relevant and reliable. However, earnings management reduces the reliability of income, because the income measure is biased (up or down) and/or the reported income is not representationally faithful to that which it is supposed to report (e.g., volatile earnings are made to look more smooth).
8. Caution should be exercised because many assumptions and estimates are made in accounting and the income figure is a reflection of these assumptions. If for any reason the assumptions are not well-founded, distortions will appear in the income reported. The objectives of the application of generally accepted accounting principles to the income statement are to measure and report the results of operations as they occur for a specified period without recognizing any artificial exclusions or modifications.
9. The term "quality of earnings" refers to the credibility of the earnings number reported. Companies that use aggressive accounting policies report higher income numbers in the short-run. In such cases, we say that the quality of earnings is low. Similarly, if higher expenses are recorded in the current period, in order to report higher income in the future, then the quality of earnings is considered low.
10. The major distinction between revenues and gains (or expenses and losses) depends on the typical activities of the enterprise. Revenues can occur from a variety of different sources, but these sources constitute the entity's ongoing major or central operations. Gains also can arise from many different sources, but these sources occur from peripheral or incidental transactions of an entity. The same type of distinction is made between an expense and a loss.
11. The advantages of the single-step income statement are: (1) simplicity and conciseness, (2) probably better understood by the layperson, (3) emphasis on total costs and expenses, and net income, and (4) does not imply priority of one revenue or expense over another. The disadvantages are that it does not show the relationship between sales and cost of goods sold and it does not show other important relationships and information, such as income from operations, income before taxes, etc.
12. Operating items are the expenses and revenues which relate directly to the principal activity of the concern; they are revenues realized from, or expenses which contribute to, the sale of goods or services for which the company was organized. The nonoperating items result from secondary activities of the company. They are not directly related to the principal activity of the company but arise from incidental activities.
13. The current operating performance income statement contains only the revenues and usual expenses of the current year, with all unusual gains or losses or material corrections of prior periods' revenues and expenses appearing in the retained earnings statement. The all-inclusive income statement includes all items of income and expense and gains and losses recognized in the accounts during the year. The retained earnings statement then would include only the beginning balance, the net amount transferred from income summary, dividends, and transfers to and from appropriated retained earnings.

Questions Chapter 4 (Continued)

In **APB Opinion No. 9**, the APB recommended a modified all-inclusive income statement, excluding from the income statement only those items, few in number, which meet the criteria for prior period adjustments and which would thus appear as adjustments to the beginning balance in the retained earnings statement. Subsequently a number of pronouncements have reinforced this position.

14. Items that are considered prior period adjustments should be charged or credited to the opening balance of retained earnings. Prior period adjustments would ordinarily be either corrections of errors made in a prior period discovered after issuance of financial statements for that period or retroactive adjustments required or permitted by an FASB Statement or APB Opinion.
15.
 - (a) This might be shown in the income statement as an extraordinary item if it is a material, unusual, and infrequent gain realized during the year. However, in general and in accordance with **APB Opinion No. 30**, this transaction would normally not be considered extraordinary, but would be shown in the nonoperating section of a multiple-step income statement. If unusual or infrequent but not both, it should be separately disclosed in the income statement.
 - (b) The bonus should be shown as an operating expense in the income statement. Although the basis of computation is a percentage of net income, it is an ordinary operating expense to the company and represents a cost of the service received from employees.
 - (c) If the amount is immaterial, it may be combined with the depreciation expense for the year and included as a part of the depreciation expense appearing in the income statement. If the amount is material, it should be shown in the retained earnings statement as an adjustment to the beginning balance of retained earnings, treated as a prior period adjustment.
 - (d) This should be shown in the income statement. One treatment would be to show it in the statement as a deduction from the rent expense, as it reduces an operating expense and therefore is directly related to operations. Another treatment is to show it in the other revenues and gains section of the income statement.
 - (e) Assuming that a provision for the loss had not been made at the time the patent infringement suit was instituted, the loss should be recognized in the current period in computing net income. It may be reported as an unusual loss.
 - (f) This should be reported in the income statement, but not as an extraordinary item because it relates to usual business operations of the firm.
16.
 - (a) The remaining book value of the equipment should be depreciated over the remainder of the five-year period. The additional depreciation (\$425,000) is not a correction of an error and is not shown as an adjustment to retained earnings.
 - (b) The loss should be shown as an extraordinary item, assuming that it is unusual and infrequent.
 - (c) Should be shown either as other expenses or losses or in a separate section, appropriately labeled as an unusual item, if unusual or infrequent but not both. It should not be shown as an extraordinary item.
 - (d) Assuming that a receivable had not been recorded in the previous period, the gain should be recognized in the current period in computing net income, but not as an extraordinary item.
 - (e) A correction of error should be considered a prior period adjustment and the beginning balance of Retained Earnings should be restated.
 - (f) The cumulative effect of \$925,000 should be separately reported between extraordinary items and net income.
17.
 - (a) Other expenses or losses section or in separate section, appropriately labeled as an unusual item, if unusual or infrequent but not both.
 - (b) Operating expense section or other expenses and losses section or in separate section, appropriately labeled as an unusual item, if unusual or infrequent but not both. **APB Opinion No. 30** specifically states that the effect of a strike does not constitute an extraordinary item.

Questions Chapter 4 (Continued)

- (c) Operating expense section, as a selling expense, but sometimes reflected as an administrative expense.
 - (d) Separate section after income from continuing operations, entitled discontinued operations.
 - (e) Other revenues and gains section or in a separate section, appropriately labeled as an unusual item, if unusual or infrequent but not both.
 - (f) Other revenues and gains section.
 - (g) Operating expense section, normally administrative. If a manufacturing concern, may be included in cost of goods sold.
 - (h) Other expenses or losses section or in separate section, appropriately labeled as an unusual item, if unusual or infrequent but not both.
18. Bonds and Glavine should not report the sales in a similar manner. This type of transaction appears to be typical of Bonds' central operations. Therefore, Bonds should report revenues of \$160,000 and expenses of \$100,000 (\$70,000 + \$30,000). However, Glavine's transaction appears to be a peripheral or incidental activity not related to its central operations. Thus, Glavine should report a gain of \$60,000 (\$160,000 – \$100,000). Note that although the classification is different, the effect on net income is the same (\$60,000 increase).
19. You should tell Rex that a company's reported net income is the same whether the single-step or multiple-step format is used. Either way, the company has the same revenues, gains, expenses, and losses; they are simply organized in a different format.
20. Both formats are acceptable. The amount of detail reported in the income statement is left to the judgment of the company, whose goal in making this decision should be to present financial statements which are most useful to decision makers. We want to present a simple, understandable statement so that a reader can easily discover the facts of importance; therefore, a single amount for selling expenses might be preferable. However, we also want to fully disclose the results of all activities; thus, a separate listing of expenses may be preferred. Note that if the condensed version is used, it should be accompanied by a supporting schedule of the eight components in the notes to the financial statements.
21. Intraproduct tax allocation should not affect the reporting of an unusual gain. The FASB specifically prohibits a "net-of-tax" treatment for such items to insure that users of financial statements can easily differentiate extraordinary items from material items that are unusual or infrequent, but not both. "Net-of-tax" treatment is reserved for discontinued operations, extraordinary items, cumulative effect of a change in accounting principle, and prior period adjustments.
22. Intraproduct tax allocation has no effect on reported net income, although it does affect the amounts reported for various components of income. The effects on these components offset each other so net income remains the same. Intraproduct tax allocation merely takes the total tax expense and allocates it to the various items which affect the tax amount.
23. If Letterman has preferred stock outstanding, the numerator in its computation may be incorrect. A better description of "earnings per share" is "earnings per **common** share." The numerator should include only the earnings available to common shareholders. Therefore, the numerator should be: net income less preferred dividends.
- The denominator is also incorrect if Letterman had any common stock transactions during the year. Since the numerator represents the results for the entire year, the denominator should reflect the weighted average number of common shares outstanding during the year, not the shares outstanding at one point in time (year-end).
24. The earnings per share trend is not favorable. Extraordinary items are one-time occurrences which are not expected to be reported in the future. Therefore, earnings per share on income before extraordinary items is more useful because it represents the results of ordinary business activity. Considering this EPS amount, EPS has decreased from \$7.21 to \$6.40.

Questions Chapter 4 (Continued)

25. Tax allocation within a period is the practice of allocating the income tax for a period to such items as income before extraordinary items, extraordinary items, and prior period adjustments.

The justification for tax allocation within a period is to produce financial statements which disclose an appropriate relationship, for example, between income tax expense and (a) income before extraordinary items, (b) extraordinary items, and (c) prior period adjustments (or of the opening balance of retained earnings).

26. Tax allocation within a period (intraproduct) becomes necessary when a firm encounters such items as discontinued operations, extraordinary items, accounting changes, or adjustments of prior periods (that is, of the opening balance of retained earnings). Such allocation is necessary to bring about an appropriate relationship between income tax expense and income from continuing operations, discontinued operations, income before extraordinary items, extraordinary items, etc.

Tax allocation within a period is handled by first computing the tax expense attributable to income before extraordinary items, assuming no discontinued operations. This is simply computed by ascertaining the income tax expense related to revenue and expense transactions entering into the determination of such income. Next, the remaining income tax expense attributable to other items is determined by the tax consequences of transactions involving these items. The applicable tax effect of these items (extraordinary, accounting changes, prior period adjustments) should be disclosed separately because of their materiality.

27.

Natsume Sozeki Company
Partial Income Statement
For the Year Ended December 31, 2004

Income before taxes and extraordinary item		\$1,000,000
Income taxes		<u>340,000</u>
Income before extraordinary item		660,000
Extraordinary item—gain on sale of plant (condemnation)	\$450,000	
Less applicable income tax	<u>135,000</u>	<u>315,000</u>
Net income		<u>\$ 975,000</u>

28. The damages would probably be reported in Pierogi Corporation's financial statements in the other expenses or losses section. If the damages are unusual in nature, the damage settlement might be reported as an unusual item. The damages would not be reported as a prior period adjustment.
29. The assets, cash flows, results of operations, and activities of the plants closed would not appear to be clearly distinguishable, operationally or for financial reporting purposes, from the assets, results of operations, or activities of the Tiger Paper Company. Therefore, disposal of these assets is not considered to be a disposal of a component of a business that would receive special reporting.
30. The major items reported in the retained earnings statement are: (1) adjustments of the beginning balance for prior period adjustments, (2) the net income or loss for the period, (3) dividends for the year, and (4) restrictions (appropriations) of retained earnings. It should be noted that the retained earnings statement is sometimes composed of two parts, unappropriated and appropriated.
31. Generally accepted accounting principles are ordinarily concerned only with a "fair presentation" of business income. In contrast, taxable income is a statutory concept which defines the base for raising tax revenues by the government, and any method of accounting which meets the statutory definition will "clearly reflect" taxable income as defined by the Internal Revenue Code. It should

Questions Chapter 4 (Continued)

be noted that the Code prohibits use of the cash receipts and disbursements method as a method which will clearly reflect income in accounting for purchases and sales if inventories are involved.

The cash receipts and disbursements method will not usually fairly present income because:

1. The completed transaction, not receipt or disbursement of cash, increases or diminishes income. Thus, a sale on account produces revenue and increases income, and the incurrence of expense reduces income without regard to the time of payment of cash.
 2. The matching principle requires that costs be matched against related revenues produced. In most situations the cash receipts and disbursements method will violate the matching principle.
 3. Consistency requires that accountable events receive the same accounting treatment from accounting period to accounting period. The cash receipts and disbursements method permits manipulation of the timing of revenues and expenses and may result in treatments which are not consistent, detracting from the usefulness of comparative statements.
32. Problems arise both from the revenue side and from the expense side. There sometimes may be doubt as to the amount of revenue under our common rules of revenue recognition. However, the more difficult problem is the determination of costs expired in the production of revenue. During a single fiscal period it often is difficult to determine the expiration of certain costs which may benefit several periods. Business is continuous and estimates have to be made of the future if we are to systematically apportion costs to fiscal periods. Examples of items which present serious obstacles include such items as institutional advertising costs.

Accountants have established certain rules for handling revenues and costs which are applied consistently and in a systematic manner. From period to period, application of these rules generally results in a satisfactory matching of costs and revenues unless there are large changes from one period to another. These rules, influenced by conservatism in the face of the uncertainties involved, tend to charge costs to expense earlier than might be ideally desirable if we had more knowledge of the future.

Costs or expenses of the types mentioned above, by their very nature, defy any attempt to relate them to revenues of a specific period or periods. Although it is known that institutional advertising will yield benefits beyond the present, both the amount of such benefits and when they will be enjoyed are shrouded in uncertainty. The degree of certainty with which their time distribution can be forecast is so small and the results, therefore, so unreliable that the accountant writes them off as applicable to the period or periods in which the expense was incurred.

33. Components are the major subsections of an income statement such as income from continuing operations, income from discontinued operations, other revenues and gains, etc. Elements are the basic ingredients which comprise the income statement; that is, revenues, gains, expenses, and losses. Items are descriptions of the elements such as rent revenue, rent expense, etc.

In order to predict the future, the amounts of individual items may have to be reported. For example, if "income from continuing operations" is significantly lower this year and is reported as a single amount, users would not know whether to attribute the decrease to a temporary increase in an expense item (for example, an unusually large bad debt), a structural change (for example, a change in the relationship between variable and fixed expenses), or some other factor. Another example is income data that are distorted because of large discretionary expenses.

34. Other comprehensive income must be displayed (reported) in one of three ways: (1) a second separate income statement, (2) a combined income statement of comprehensive income, or (3) as part (separate columns) of the statement of stockholders' equity.

Questions Chapter 4 (Continued)

35. The results of continuing operations should be reported separately from discontinued operations, and any gain or loss from disposal of a component of a business should be reported with the related results of discontinued operations and not as an extraordinary item. The following format illustrates the proper disclosure:

Income from continuing operations before income taxes	\$XXX
Income tax expense	<u>XXX</u>
Income from continuing operations	XXX
Discontinued operations	
Gain (loss) on disposal of Division X	
(less applicable income taxes of \$—)	<u>XXX</u>
Net income	<u>\$XXX</u>

SOLUTIONS TO BRIEF EXERCISES

BRIEF EXERCISE 4-1

**Tim Allen Co.
Income Statement
For the Year 2004**

Revenues

Sales	\$540,000
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Expenses

Cost of Goods Sold	\$320,000	
Wages Expense	120,000	
Other Operating Expenses	10,000	
Income Tax Expense	<u>25,000</u>	
Total Expenses		<u>475,000</u>

Net income	<u>\$65,000</u>
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Earnings per share	<u>\$0.65*</u>
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*\$65,000 ÷ 100,000 shares.

BRIEF EXERCISE 4-2

Turner Corporation
Income Statement
For the Year Ended December 31, 2004

Revenues

Net sales	\$2,400,000
Interest revenue	<u>31,000</u>
Total revenues	<u>2,431,000</u>

Expenses

Cost of goods sold	\$1,250,000
Selling expenses	280,000
Administrative expenses	212,000
Interest expense	45,000
Income tax expense*	<u>193,200</u>
Total expenses	<u>1,980,200</u>

Net income \$ 450,800

Earnings per share** \$6.44

*($\$2,431,000 - \$1,250,000 - \$280,000 - \$212,000 - \$45,000$) X 30% =
\$193,200.

** $\$450,800 \div 70,000$ shares.

BRIEF EXERCISE 4-3

Turner Corporation
Income Statement
For the Year Ended December 31, 2004

Net sales		\$2,400,000
Cost of goods sold		<u>1,250,000</u>
Gross profit		1,150,000
Selling expenses	\$280,000	
Administrative expenses	<u>212,000</u>	<u>492,000</u>
Income from operations		658,000
Other revenue and gains		
Interest revenue		31,000
Other expenses and losses		
Interest expense		<u>45,000</u>
Income before income tax		644,000
Income tax expense		<u>193,200</u>
Net income		<u><u>\$ 450,800</u></u>
Earnings per share		<u><u>\$6.44*</u></u>

*\$450,800 ÷ 70,000 shares.

BRIEF EXERCISE 4-4

Income from continuing operations		\$12,600,000
Discontinued operations		
Loss from operation of discontinued restaurant division (net of tax)	\$315,000	
Loss from disposal of restaurant division (net of tax)	<u>189,000</u>	<u>504,000</u>
Net income		<u>\$12,096,000</u>
Earnings per share		
Income from continuing operations		\$1.26
Discontinued operations		<u>(.05)</u>
Net income		<u>\$1.21</u>

BRIEF EXERCISE 4-5

Income before income tax and extraordinary item		\$7,300,000
Income tax		<u>2,190,000</u>
Income before extraordinary item		5,110,000
Extraordinary loss from casualty, net of \$231,000 taxes		<u>539,000</u>
Net income		<u>\$4,571,000</u>
Earnings per share		
Income before extraordinary item		\$1.02
Extraordinary loss		<u>(.11)</u>
Net income		<u>\$.91</u>

BRIEF EXERCISE 4-6

<u>Year</u>	<u>Straight-line</u>	<u>Double-declining balance</u>	<u>Difference</u>
2002	\$ 60,000	\$120,000	\$ 60,000
2003	<u>60,000</u>	<u>110,400</u>	<u>50,400</u>
	<u>\$120,000</u>	<u>\$230,400</u>	\$110,400
Tax effect (30%)			<u>33,120</u>
			<u>\$ 77,280</u>

Bradley's net income will be decreased (as a result of switching to a higher depreciation amount) by \$77,280.

BRIEF EXERCISE 4-7

Kingston would not report any cumulative effect because a change in estimate is not handled retroactively. Kingston would report bad debt expense of \$120,000 in 2004.

BRIEF EXERCISE 4-8

$$\frac{\$1,200,000 - \$250,000}{190,000} = \underline{\$5.00} \text{ per share}$$

BRIEF EXERCISE 4-9

Lincoln Corporation
Retained Earnings Statement
For the Year Ended December 31, 2004

Balance, January 1	\$ 675,000
Add: Net income for 2004	<u>2,400,000</u>
	3,075,000
Deduct: Cash dividends declared	<u>75,000</u>
Balance, December 31	<u>\$3,000,000</u>

BRIEF EXERCISE 4-10

Lincoln Corporation
Retained Earnings Statement
For the Year Ended December 31, 2004

Balance, January 1, as reported	\$ 675,000
Correction for overstatement of expenses in prior period (net of tax)	<u>80,000</u>
Balance, January 1, as adjusted	755,000
Add: Net income for 2004	<u>2,400,000</u>
	3,155,000
Deduct: Cash dividends declared	<u>75,000</u>
Balance, December 31	<u>\$3,080,000</u>

BRIEF EXERCISE 4-11

(a)	Net income	<u>\$3,000</u>
(b)	Net income (Dividend revenue)	\$3,000
	Unrealized holding gain	<u>5,000</u>
	Comprehensive income	<u>\$8,000</u>
(c)	Unrealized holding gain	<u>\$5,000</u>
(d)	Accumulated other comprehensive income, January 1, 2004	\$ 0
	Unrealized holding gain	<u>5,000</u>
	Accumulated other comprehensive income, December 31, 2004	<u>\$5,000</u>

SOLUTIONS TO EXERCISES

EXERCISE 4-1 (18-20 minutes)

Computation of net income

Change in assets: $\$79,000 + \$45,000 + \$127,000 - \$47,000 = \$204,000$ Increase

Change in liabilities: $\$82,000 - \$51,000 = \underline{\$31,000}$ Increase

Change in stockholders' equity: $\$173,000$ Increase

Change in stockholders' equity accounted

for as follows:

Net increase		\$173,000
Increase in common stock	\$125,000	
Increase in additional paid-in capital	13,000	
Decrease in retained earnings due to dividend declaration	<u>(19,000)</u>	
Net increase accounted for		<u>119,000</u>
Increase in retained earnings due to net income		<u>\$ 54,000</u>

EXERCISE 4-2 (25-35 minutes)**(a) Total net revenue:**

Sales		\$390,000
Less: Sales discounts	\$ 7,800	
 Sales returns	<u>12,400</u>	<u>20,200</u>
Net sales		369,800
Dividend revenue		71,000
Rental revenue		<u>6,500</u>
 Total net revenue		<u>\$447,300</u>

(b) Net income:

Total net revenue (from a)		<u>\$447,300</u>
Expenses:		
 Cost of goods sold		184,400
 Selling expenses		99,400
 Administrative expenses		82,500
 Interest expense		<u>12,700</u>
 Total expenses		<u>379,000</u>
Income before taxes		68,300
Income taxes		<u>31,000</u>
 Net income		<u>\$ 37,300</u>

(c) Dividends declared:

Ending retained earnings	\$134,000
Beginning retained earnings	<u>114,400</u>
Net increase	19,600
Less net income	<u>(37,300)</u>
Dividends declared	<u>\$ 17,700</u>

EXERCISE 4-2 (Continued)

ALTERNATE SOLUTION

Beginning retained earnings	\$114,400
Add net income	<u>37,300</u>
	151,700
Deduct dividends declared	<u>?</u>
Ending retained earnings	<u>\$134,000</u>

Dividends declared must be \$17,700
(\$151,700 – \$134,000)

EXERCISE 4-3 (20-25 minutes)

LeRoi Jones Inc.
Income Statement
For Year Ended December 31, 2004

Sales	\$1,250,000
Less sales discounts	<u>17,000</u>
Net sales	<u>1,233,000</u>
Expenses	
Cost of goods sold	500,000
Selling expenses	400,000
Administrative expenses	100,000
Interest expense	<u>20,000</u>
Total expenses	<u>1,020,000</u>
Income before taxes	213,000
Income taxes	<u>63,900</u>
Net income (per share \$7.46)	<u>\$ 149,100</u>

EXERCISE 4-3 (Continued)

Determination of amounts

Administrative expenses = 20% of cost of good sold
= 20% of \$500,000
= \$100,000

Gross sales X 8% = administrative expenses
= \$1,250,000

Selling expenses = four times administrative expenses.
(operating expenses consist of selling and administrative expenses; since selling expenses are 4/5 of operating expenses, selling expenses are 4 times administrative expenses.)
= 4 X \$100,000
= \$400,000

Per share \$7.46 ($\$149,100 \div 20,000$)

EXERCISE 4-4 (30-35 minutes)**(a)****Multiple-Step Form****P. Bride Company****Income Statement****For the Year Ended December 31, 2004****(In thousands, except earnings per share)**

Sales				\$96,500
Cost of goods sold				<u>60,570</u>
Gross profit				35,930
<u>Operating Expenses</u>				
Selling expenses				
Sales commissions	7,980			
Depr. of sales equipment	6,480			
Transportation-out	<u>2,690</u>	17,150		
Administrative expenses				
Officers' salaries	4,900			
Depr. of office furn. and equip.	<u>3,960</u>	<u>8,860</u>		<u>26,010</u>
Income from operations				9,920
<u>Other Revenues and Gains</u>				
Rental revenue				<u>17,230</u>
				27,150
<u>Other Expenses and Losses</u>				
Interest expense				<u>1,860</u>
Income before taxes				25,290
Income taxes				<u>9,070</u>
Net income				<u>\$16,220</u>
Earnings per share (\$16,220 ÷ 40,550)				<u>\$.40</u>

EXERCISE 4-4 (Continued)

Multiple-step:

1. Provides more information through segregation of operating and nonoperating items.
2. Expenses are matched with related revenue.

Note to instructor: Students' answers will vary due to the nature of the question; i.e., it asks for an opinion. However, the discussion supporting the answer should include the above points.

EXERCISE 4-5 (30-35 minutes)

Maria Conchita Alonzo Corp.
Income Statement
For the Year Ended December 31, 2004

Sales Revenue

Sales		\$1,380,000
Less: Sales returns and allowances	\$150,000	
Sales discounts	<u>45,000</u>	<u>195,000</u>
Net sales revenue		1,185,000
Cost of goods sold		<u>621,000</u>
Gross profit		564,000

Operating Expenses

Selling expenses	194,000	
Admin. and general expenses	<u>97,000</u>	<u>291,000</u>
Income from operations		273,000

EXERCISE 4-5 (Continued)

Other Revenues and Gains

Interest revenue	<u>86,000</u>
	359,000

Other Expenses and Losses

Interest expense	<u>60,000</u>
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Income before taxes and extraordinary item	299,000
Income taxes (\$299,000 X .34)	<u>101,660</u>
Income before extraordinary item	197,340
Extraordinary item	
Loss from earthquake damage	150,000
Less applicable tax reduction (\$150,000 X .34)	<u>51,000</u>
	<u>99,000</u>
Net income	<u>\$ 98,340</u>

Per share of common stock:

Income before extraordinary item (\$197,340 ÷ 100,000)	\$1.97
Extraordinary item (net of tax)	<u>(.99)</u>
Net income (\$98,340 ÷ 100,000)	<u>\$.98</u>

EXERCISE 4-6 (30-40 minutes)**(a)****Multiple-Step Form
Whitney Houston Shoe Co.
Income Statement****For the Year Ended December 31, 2004**

Net Sales				\$980,000
Cost of Goods Sold				<u>496,000</u>
Gross profit				484,000
<u>Operating Expenses</u>				
Selling expenses				
Wages and salaries		\$114,800		
Materials and supplies		17,600		
Depr. exp. (70% X \$65,000)		<u>45,500</u>	\$177,900	
Administrative expenses				
Wages and salaries		135,900		
Depr. exp. (30% X \$65,000)		19,500		
Other admin. expenses		<u>51,700</u>	<u>207,100</u>	<u>385,000</u>
Income from operations				99,000
<u>Other Revenues and Gains</u>				
Rental revenue				<u>29,000</u>
				128,000
<u>Other Expenses and Losses</u>				
Interest expense				<u>18,000</u>
Income before income tax				110,000
Income tax				<u>37,400</u>
Net income				<u>\$ 72,600</u>
Earnings per share (\$72,600 ÷ 20,000)				<u>\$3.63</u>

EXERCISE 4-6 (Continued)

Multiple-step:

1. Provides more information through segregation of operating and nonoperating items.
2. Expenses are matched with related revenue.

Note to instructor: Students' answers will vary due to the nature of the question, i.e., it asks for an opinion. However, the discussion supporting the answer should include the above points.

EXERCISE 4-7 (15-20 minutes)

(a) Net sales	\$ 540,000
Less: Cost of Goods sold	(210,000)
Administrative Expenses	(100,000)
Selling expenses	(80,000)
Discontinued operations-loss	<u>(40,000)</u>
Income before income taxes	110,000
Income tax (\$110,000 X .30)	<u>33,000</u>
Net income	<u>\$ 77,000</u>
(b) Income from continuing operations before income tax	\$150,000*
Income tax (\$150,000 X .30)	<u>45,000</u>
Income from continuing operations	105,000
Discontinued operations, less applicable income tax of \$12,000	<u>(28,000)</u>
Net income	<u>\$ 77,000</u>

*\$110,000 + \$40,000

Earnings per share:

Income from continuing operations ($\$105,000 \div 10,000$)	\$10.50
Loss on discontinued operations	<u>(2.80)</u>
Net Income ($\$77,000 \div 10,000$)	<u>\$7.70</u>

EXERCISE 4-8 (30-35 minutes)

(a) **Ivan Calderon Corp.**
Income Statement
For the Year Ended December 31, 2004

Sales Revenue

Net sales		\$1,300,000
Cost of goods sold		<u>780,000</u>
Gross profit		520,000

Operating Expenses

Selling expenses	\$65,000	
Administrative expenses	<u>48,000</u>	<u>113,000</u>
Income from operations		407,000

Other Revenues and Gains

Dividend revenue	20,000	
Interest revenue	<u>7,000</u>	<u>27,000</u>
		434,000

Other Expenses and Losses

Write-off of inventory due to obsolescence		<u>80,000</u>
Income before taxes and extraordinary item		354,000
Income taxes		<u>120,360</u>
Income before extraordinary item		233,640
Extraordinary item		
Casualty loss	50,000	
Less applicable tax reduction	<u>17,000</u>	<u>33,000</u>
Net income		<u>\$ 200,640</u>

Per share of common stock:

Income before extraordinary item ($\$233,640 \div 60,000$)	\$3.89
Extraordinary item (net of tax)	<u>(.55)</u>
Net income ($\$200,640 \div 60,000$)	<u>\$3.34</u>

EXERCISE 4-8 (Continued)

(b) **Ivan Calderon Corp.**
Retained Earnings Statement
For the Year Ended December 31, 2004

Balance, Jan. 1, as reported	\$ 980,000
Correction for overstatement of net income in prior period (depreciation error) (net of \$18,700 tax)	<u>(36,300)</u>
Balance, Jan. 1, as adjusted	943,700
Add: Net income	<u>200,640</u>
	1,144,340
Less: Dividends declared	<u>45,000</u>
Balance, Dec. 31	<u><u>\$1,099,340</u></u>

EXERCISE 4-9 (20-25 minutes)

Computation of net income:

2004 net income after tax		\$33,000,000
2004 net income before tax		
[\$33,000,000 ÷ (1 - .34)]		50,000,000
Add back major casualty loss		<u>18,000,000</u>
Income from operations		68,000,000
Income taxes (34% X \$68,000,000)		<u>23,120,000</u>
Income before extraordinary item		44,880,000
Extraordinary item:		
Casualty loss	\$18,000,000	
Less applicable income tax reduction	<u>6,120,000</u>	<u>11,880,000</u>
Net income		<u><u>\$33,000,000</u></u>

EXERCISE 4-9 (Continued)

Net income	\$33,000,000
Less provision for preferred dividends (8% of \$4,500,000)	<u>360,000</u>
Income available for common	32,640,000
Common shares	<u>÷ 10,000,000</u>
Earnings per share	<u>\$3.26</u>

Income statement presentation

Per share of common stock:

Income before extraordinary item	\$4.45 ^a
Extraordinary item (net of tax)	<u>(1.19)^b</u>
Net income	<u>\$3.26</u>

$$^a \frac{\$44,880,000 - \$360,000}{10,000,000} = \$4.45$$

$$^b \frac{\$11,880,000}{10,000,000} = \$1.19$$

EXERCISE 4-10 (20-25 minutes)

Spock Corporation Income Statement For the Year Ended December 31, 2004

Net sales		\$4,162,000
Cost of goods sold		<u>2,665,000</u>
Gross profit		1,497,000
Selling expenses	\$636,000	
Administrative expenses	<u>491,000</u>	<u>1,127,000</u>
Income from operations		370,000
Other revenue	240,000	
Other expense	<u>(176,000)</u>	<u>64,000</u>
Income before taxes		434,000
Income taxes (\$434,000 X .34)		<u>147,560</u>
Income before extraordinary item		286,440
Extraordinary loss, net of \$23,800 taxes		<u>46,200</u>
Net income		<u>\$ 240,240</u>
Earnings per share (\$900,000 ÷ \$10 par value = 90,000 shares)		
Income before extraordinary item (\$286,440 ÷ 90,000)		\$3.18
Extraordinary item		<u>(.51)</u>
Net income		<u>\$2.67</u>

Supporting computations

Net sales:

$$\$4,275,000 - \$34,000 - \$79,000 = \underline{\underline{\$4,162,000}}$$

Cost of goods sold:

$$\$535,000 + (\$2,786,000 + \$72,000 - \$27,000 - \$15,000) - \$686,000 = \underline{\underline{\$2,665,000}}$$

Selling expenses:

$$\$284,000 + \$83,000 + \$69,000 + \$54,000 + \$93,000 + \$36,000 + \$17,000 = \underline{\underline{\$636,000}}$$

Administrative expenses:

$$\$346,000 + \$33,000 + \$24,000 + \$48,000 + \$32,000 + \$8,000 = \underline{\underline{\$491,000}}$$

EXERCISE 4-11 (20-25 minutes)

**(a) Eddie Zambrano Corporation
Retained Earnings Statement
For the Year Ended December 31, 2004**

Balance, January 1, as reported	\$225,000*
Correction for depreciation error (net of \$10,000 tax)	<u>15,000</u>
Balance, January 1, as adjusted	210,000
Add net income	<u>123,000**</u>
	333,000
Deduct dividends declared	<u>100,000</u>
Balance, December 31	<u>\$233,000</u>

*(\$40,000 + \$125,000 + \$160,000) – (\$50,000 + \$50,000)

**[\$240,000 – (40% X \$240,000)] – [\$35,000 – (40% X \$35,000)]

(b) Total retained earnings would still be reported as \$233,000. A restriction does not affect total retained earnings; it merely labels part of the retained earnings as being unavailable for dividend distribution. Retained earnings would be reported as follows:

Retained earnings:	
Appropriated	\$ 70,000
Unappropriated	<u>163,000</u>
Total	<u>\$233,000</u>

EXERCISE 4-12 (15-20 minutes)

Net income:

Income from continuing operations before taxes		\$23,650,000
Income taxes (35% X \$23,650,000)		<u>8,277,500</u>
Income from continuing operations		15,372,500
Discontinued operations		
Loss before taxes	\$3,225,000	
Less applicable income tax (35%)	<u>1,128,750</u>	<u>2,096,250</u>
Net income		<u>\$13,276,250</u>

Preferred dividends declared: \$ 1,075,000

Weighted average common shares outstanding:

12/31/03–3/31/04 (4,000,000 x 3/12)	1,000,000
4/1/04–12/31/04 (4,400,000 x 9/12)	<u>3,300,000</u>
Weighted average	<u>4,300,000</u>

Earnings per share

Income from continuing operations	\$3.33*
Discontinued operations	<u>(.49)**</u>
Net income	<u>\$2.84***</u>

* $(\$15,372,500 - \$1,075,000) \div 4,300,000$.

** $\$2,096,250 \div 4,300,000$.

*** $(\$13,276,250 - \$1,075,000) \div 4,300,000$.

EXERCISE 4-13 (15-20 minutes)

(a) Depreciation expense for 2004

$$\frac{\$450,000 - \$30,000}{6 \text{ years}} = \$70,000$$

(b) Year	<u>DDB Method</u>	<u>SL Method</u>	<u>Difference</u>
2002	\$ 150,000	\$ 70,000	\$ 80,000
2003	<u>100,000</u>	<u>70,000</u>	<u>30,000</u>
Total	\$ 250,000	\$140,000	\$ 110,000
Income taxes			<u>38,500</u>
Cumulative effect, net of tax			<u>\$ 71,500</u>

EXERCISE 4-14 (15-20 minutes)

Roxanne Carter Corporation
Income Statement and Statement of Comprehensive Income
For the Year Ended December 31, 2004

Sales	\$1,200,000
Cost of goods sold	<u>750,000</u>
Gross profit	450,000
Selling and administrative expenses	<u>320,000</u>
Net income	<u>\$ 130,000</u>
Net income	\$ 130,000
Unrealized holding gain	<u>18,000</u>
Comprehensive income	<u>\$ 148,000</u>

EXERCISE 4-15 (15-20 minutes)

C. Reither Co.
Statement of Stockholders' Equity
For the Year Ended December 31, 2004

	<u>Total</u>	<u>Compre- hensive Income</u>	<u>Retained Earnings</u>	<u>Accumulated Other Comprehensive Income</u>	<u>Common Stock</u>
Beginning balance	\$520,000		\$ 90,000	\$80,000	\$350,000
Comprehensive income					
Net income*	120,000	\$120,000	120,000		
Other comprehensive income					
Unrealized holding loss	(60,000)	(60,000)		(60,000)	
Comprehensive income		<u>\$ 60,000</u>			
Dividends	(10,000)		(10,000)		
Ending balance	<u>\$570,000</u>		<u>\$200,000</u>	<u>\$20,000</u>	<u>\$350,000</u>

*(\$700,000 – \$500,000 – \$80,000).

EXERCISE 4-16 (30-35 minutes)

(a) **Roland Carlson Inc.**
Income Statement
For the Year Ended December 31, 2004

<u>Revenues</u>	
Sales	\$1,900,000
Rent revenue	<u>40,000</u>
Total revenues	<u>1,940,000</u>
<u>Expenses</u>	
Cost of goods sold	850,000
Selling expenses	300,000
Administrative expenses	<u>240,000</u>
Total expenses	<u>1,390,000</u>

EXERCISE 4-16 (Continued)

Income from continuing operations before income taxes		550,000
Income taxes		<u>187,000</u>
Income from continuing operations		363,000
Discontinued operations		
Loss on discontinued operations	\$75,000	
Less applicable income tax reduction	<u>25,500</u>	<u>49,500</u>
Income before extraordinary items		313,500
Extraordinary items:		
Extraordinary gain	95,000	
Less applicable income tax	<u>32,300</u>	<u>62,700</u>
		376,200
Extraordinary loss	60,000	
Less applicable income tax reduction	<u>20,400</u>	<u>39,600</u>
Net income		<u>\$ 336,600</u>

Per share of common stock:

Income from continuing operations ($\$363,000 \div 100,000$)	\$3.63
Loss on discontinued operations, net of tax	<u>(.49)</u>
Income before extraordinary items ($\$313,500 \div 100,000$)	3.14
Extraordinary gain, net of tax	.63
Extraordinary loss, net of tax	<u>(.40)</u>
Net income ($\$336,600 \div 100,000$)	<u>\$3.37</u>

(b) **Roland Carlson Inc.**
Retained Earnings Statement
For the Year Ended December 31, 2004

Retained Earnings, January 1, 2004	\$600,000
2004 Net Income	<u>336,600</u>
	\$936,600
Dividends Declared	<u>(150,000)</u>
Retained Earnings, December 31, 2004	<u>\$786,600</u>

EXERCISE 4-16 (Continued)

(c)

**Roland Carlson Inc.
Statement of Comprehensive Income
For the Year Ended December 31, 2004**

Net Income	\$336,600
Other Comprehensive Income	
Unrealized Holding Gain	<u>15,000</u>
Comprehensive Income	<u>\$351,600</u>

TIME AND PURPOSE OF PROBLEMS

Problem 4-1 (Time 30-35 minutes)

Purpose—to provide the student with an opportunity to prepare an income statement and a retained earnings statement. A number of special items such as loss from discontinued operations, unusual items, and ordinary gains and losses are presented in the problem for analysis purposes.

Problem 4-2 (Time 25-30 minutes)

Purpose—to provide the student with an opportunity to prepare a single-step income statement and a retained earnings statement. The student must determine through analysis the ending balance in retained earnings.

Problem 4-3 (Time 30-40 minutes)

Purpose—to provide the student with an opportunity to analyze a number of transactions and to prepare a partial income statement. The problem includes discontinued operations, an extraordinary item, and the cumulative effect of a change in accounting principle.

Problem 4-4 (Time 45-55 minutes)

Purpose—to provide the student with the opportunity to prepare a multiple-step and single-step income statement and a retained earnings statement from the same underlying information. A substantial number of operating expenses must be reported in this problem unlike Problem 4-1. As a consequence, the problem is time-consuming and emphasizes the differences between the multiple-step and single-step income statement.

Problem 4-5 (Time 20-25 minutes)

Purpose—to provide the student with a problem on the income statement treatment of (1) a usual but infrequently occurring charge, (2) an extraordinary item and its related tax effect, (3) a correction of an error, and (4) earnings per share. The student is required not only to identify the proper income statement treatment but also to provide the rationale for such treatment.

Problem 4-6 (Time 25-35 minutes)

Purpose—to provide the student with an opportunity to prepare a retained earnings statement. A number of special items must be reclassified and reported in the income statement. This problem illustrates the fact that ending retained earnings is unaffected by the choice of disclosing items in the income statement or the retained earnings statement, although the income reported would be different.

Problem 4-7 (Time 25-35 minutes)

Purpose—to provide the student with a problem to determine the reporting of several items, which may get special treatment as irregular items. This is a good problem for a group assignment.

SOLUTIONS TO PROBLEMS

PROBLEM 4-1

American Horse Company Income Statement For the Year Ended December 31, 2004

Sales		\$25,000,000
Less cost of goods sold		<u>17,000,000</u>
Gross profit		8,000,000
Less selling and administrative expenses		<u>4,700,000</u>
Income from operations		3,300,000
Other revenues and gains		
Interest revenue	\$ 70,000	
Gain on the sale of investments	<u>110,000</u>	180,000
Other expenses and losses		
Write-off of goodwill		<u>820,000</u>
Income from continuing operations before income taxes		2,660,000
Income taxes		<u>905,000</u>
Income from continuing operations		1,755,000
Discontinued operations		
Loss on operations, net of tax	90,000	
Loss on disposal, net of tax	<u>440,000</u>	<u>530,000</u>
Income before extraordinary item		1,225,000
Extraordinary loss from flood damage, net of tax		<u>390,000</u>
Net income		<u>\$ 835,000</u>

PROBLEM 4-1 (Continued)

**American Horse Company
Retained Earnings Statement
For the Year Ended December 31, 2004**

Retained Earnings, January 1, 2004		980,000
Plus net income		<u>835,000</u>
		1,815,000
Less dividends		
Preferred stock	70,000	
Common stock	<u>250,000</u>	<u>320,000</u>
Retained Earnings, December 31, 2004		<u>\$ 1,495,000</u>

Earnings per share:

Income from continuing operations		\$ 5.62 ^a
Discontinued operations		
Loss on operations (net of tax)	\$(.30)	
Loss on disposal (net of tax)	<u>(1.47)</u>	<u>(1.77)</u>
Income before extraordinary item		3.85 ^b
Extraordinary loss (net of tax)		<u>(1.30)</u>
Net income		<u>\$ 2.55^c</u>

$$^a \frac{\$1,755,000 - \$70,000}{300,000 \text{ shares}} = \$5.62$$

$$^b \frac{\$1,225,000 - \$70,000}{300,000 \text{ shares}} = \$3.85$$

$$^c \frac{\$835,000 - \$70,000}{300,000 \text{ shares}} = \$2.55$$

PROBLEM 4-2

Mary J. Blige Corporation
Income Statement
For the Year Ended December 31, 2004

Revenues

Net sales (\$1,000,000 – \$14,500 – \$17,500)	\$ 968,000
Gain on sale of land	30,000
Rent revenue	<u>18,000</u>
Total revenues	<u>1,016,000</u>

Expenses

Cost of goods sold*	585,000
Selling expenses	232,000
Administrative expenses	<u>99,000</u>
Total expenses	<u>916,000</u>

Income before taxes	100,000
Income taxes	<u>38,500</u>
Net income (per common share \$2.05)	<u>\$ 61,500</u>

***Cost of goods sold:**

Merchandise inventory, Jan. 1		\$ 89,000
Purchases	\$610,000	
Less purchase discounts	<u>10,000</u>	
Net purchases	600,000	
Add freight-in	<u>20,000</u>	<u>620,000</u>
Merchandise available for sale		709,000
Less merchandise inventory, Dec. 31		<u>124,000</u>
Cost of goods sold		<u>\$585,000</u>

PROBLEM 4-2 (Continued)

**Mary J. Blige Corporation
Retained Earnings Statement
For the Year Ended December 31, 2004**

Retained earnings at beginning of the year	\$260,000
Plus net income	<u>61,500</u>
	321,500
Less cash dividends declared and paid	<u>45,000</u>
Retained earnings at end of the year	<u>\$276,500</u>

PROBLEM 4-3

Tony Rich Inc.
Income Statement (Partial)
For the Year Ended December 31, 2004

Income from continuing operations before taxes		\$798,500*
Income taxes		<u>220,350**</u>
Income from continuing operations:		578,150
Discontinued operations:		
Loss from disposal of recreational division	\$115,000	
Less applicable income tax reduction	<u>34,500</u>	<u>80,500</u>
Income before extraordinary item and cumulative effect of a change in accounting principle		497,650
Extraordinary item:		
Major casualty loss	80,000	
Less applicable income tax reduction	<u>36,800</u>	43,200
Cumulative effect on prior years of retroactive application of new inventory method	40,000	
Less applicable income taxes	<u>16,000</u>	<u>24,000</u>
Net income		<u>\$478,450</u>

Per share of common stock:

Income from continuing operations		\$7.23
Discontinued operations, net of tax		<u>(1.01)</u>
Income before extraordinary items and cumulative effect of accounting change		6.22
Extraordinary item, net of tax		(.54)
Change in accounting principle, net of tax		<u>.30</u>
Net income (\$478,450 ÷ 80,000)		<u>\$5.98</u>

PROBLEM 4-3 (Continued)

*Computation of income from cont. operations before taxes:

As previously stated		\$790,000
Loss on sale of securities		(57,000)
Gain on proceeds of life insurance policy (\$110,000 – \$46,000)		64,000
Error in computation of depreciation		
As computed ($\$54,000 \div 6$)	\$9,000	
Corrected ($\$54,000 - \$9,000 \div 6$)	<u>(7,500)</u>	<u>1,500</u>
As restated		<u>\$798,500</u>

**Computation of income tax:

Income from continuing operations before taxes		\$798,500
Nontaxable income (gain on life insurance)		<u>(64,000)</u>
Taxable income		734,500
Tax rate		<u>X .30</u>
Income tax expense		<u>\$220,350</u>

PROBLEM 4-4

(a)

J. R. Reid Corporation
Income Statement
For the Year Ended June 30, 2004

Sales Revenue

Sales		\$1,678,500
Less: Sales discounts	\$31,150	
 Sales returns	<u>62,300</u>	<u>93,450</u>
Net sales		1,585,050
Cost of Goods Sold		<u>896,770</u>
Gross profit		688,280

Operating Expenses

Selling expenses

Sales commissions	\$97,600	
Sales salaries	56,260	
Travel expense	28,930	
Entertainment expense	14,820	
Freight-out	21,400	
Telephone and internet exp.	9,030	
Depr. of sales equipment	4,980	
Building expense	6,200	
Bad debt expense	4,850	
Misc. selling expense	<u>4,715</u>	248,785

PROBLEM 4-4 (Continued)

Administrative Expenses

Real estate and other local taxes	7,320		
Building expense	9,130		
Depreciation of office furniture and equipment	7,250		
Office supplies used	3,450		
Telephone and internet expense	2,820		
Miscellaneous office expenses	<u>6,000</u>	<u>35,970</u>	<u>284,755</u>
Income from operations			403,525

Other Revenues and Gains

Dividend revenue			<u>38,000</u>
			441,525

Other Expenses and Losses

Bond interest expense			<u>18,000</u>
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Income before taxes			423,525
Income taxes			<u>133,000</u>
Net income			<u>\$ 290,525</u>

Earnings per common share

(\$290,525 – \$9,000 of preferred dividends ÷ 80,000 shares)			<u>\$3.52</u>
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PROBLEM 4-4 (Continued)

**J. R. Reid Corporation
Retained Earnings Statement
For the Year Ended June 30, 2004**

Retained earnings, July 1, 2003		
as reported	\$337,000	
Correction of depreciation		
understatement (net of tax)	<u>17,700</u>	
Adjusted balance of retained		
earnings at July 1, 2003		\$319,300
Plus net income		<u>290,525</u>
		609,825
Deduct:		
Dividends declared on preferred stock	9,000	
Dividends declared on common stock	<u>32,000</u>	<u>41,000</u>
Retained earnings, June 30, 2004		<u>\$568,825</u>

PROBLEM 4-4 (Continued)

**(b) J. R. Reid Corporation
Income Statement
For the Year Ended June 30, 2004**

Revenues

Net sales	\$1,585,050
Dividend revenue	<u>38,000</u>
Total revenues	<u>1,623,050</u>

Expenses

Cost of goods sold	896,770
Selling expenses	248,785
Administrative expenses	35,970
Bond interest expense	<u>18,000</u>
Total expenses	<u>1,199,525</u>

Income before taxes	423,525
Income taxes	<u>133,000</u>
Net income	<u>\$ 290,525</u>
Earnings per common share	<u>\$3.52</u>

PROBLEM 4-4 (Continued)

**J. R. Reid Corporation
Retained Earnings Statement
For the Year Ended June 30, 2004**

Retained earnings, July 1, 2003 as reported	\$337,000	
Correction of depreciation understatement (net of tax)	<u>17,700</u>	
Retained earnings, July 1, 2003 adjusted		\$319,300
Plus net income		<u>290,525</u>
		609,825
Deduct:		
Dividends declared on preferred stock	9,000	
Dividends declared on common stock	<u>32,000</u>	<u>41,000</u>
Retained earnings, June 30, 2004		<u><u>\$568,825</u></u>

PROBLEM 4-5

- 1. The usual but infrequently occurring charge of \$10,500,000 should be disclosed separately, assuming it is material. This charge is shown above income before extraordinary items and would not be reported net of tax. This item should be separately disclosed to inform the users of the financial statements that this item is nonrecurring and therefore may not impact next year's results. Furthermore, trend comparisons may be misleading if such an item is not highlighted and adjustments made. The item should not be considered extraordinary because it is usual in nature.**
- 2. The extraordinary item of \$9,000,000 should be reported net of tax in a separate section for extraordinary items. An adjustment should be made to income taxes to report this amount at \$22,400,000. The \$3,000,000 tax effect of this extraordinary item should be reported with the extraordinary item. The reason for the separate disclosure is much the same as that given above for the separate disclosure of the usual, but infrequently occurring item. Readers must be informed that certain revenue and expense items may be unusual and infrequent, and that their likelihood for affecting operations again in the future is unlikely.**
- 3. The adjustment required for correction of an error is inappropriately labeled and also should not be reported in the retained earnings statement. Changes in estimate should be handled in current and future periods through the income statement. Catch-up adjustments are not permitted. To restate financial statements every time a change in estimate occurred would be extremely costly. In addition, adjusting the beginning balance of retained earnings is inappropriate as the increased charge in this case affects current and future income statements.**

PROBLEM 4-5 (Continued)

- 4. Earnings per share should be reported on the face of the income statement and not in the notes to the financial statements. Because such importance is ascribed to this statistic, the profession believes it necessary to highlight the earnings per share figure. In this case Freewalt Company should report both income before extraordinary item and net income on a per share basis.**

PROBLEM 4-6

**LeClair Corp.
Retained Earnings Statement
For the Year Ended December 31, 2004**

Retained Earnings, January 1 as reported	\$257,600
Correction of error from prior period (net of tax)	<u>25,400</u>
Adjusted balance of retained earnings at January 1	283,000
Add net income	44,100*
Deduct cash dividends declared	<u>32,000</u>
Retained earnings, December 31	<u>\$295,100</u>

***\$44,100 = (\$84,500 + \$41,200 + \$21,600 – \$25,000 – \$60,000 – \$18,200)**

- (b)**
- 1. Gain on sale of investments—body of income statement, possibly unusual item**
 - 2. Refund of litigation—body of income statement, possibly unusual item.**
 - 3. Loss on discontinued operations—body of the income statement, following the caption, “Income from continuing operations.”**
 - 4. Write-off of goodwill—body of income statement, possibly unusual item.**
 - 5. Cumulative effect of change in depreciation method—body of the income statement, following the caption, “Income before extraordinary item and cumulative effect of change in accounting principle.” If an extraordinary item is reported, the cumulative effect would be reported below this item.**

PROBLEM 4-7

Rap Corp.
Income Statement (Partial)
For the Year Ended December 31, 2004

Income from continuing operations before income taxes			\$1,180,000*
Income taxes			<u>448,400**</u>
Income from continuing operations			731,600
Discontinued operations			
Loss from operations of discontinued subsidiary	\$ 90,000		
Less applicable income tax reduction	<u>34,200</u>	\$55,800	
Loss from disposal of subsidiary	100,000		
Less applicable income tax reduction	<u>38,000</u>	<u>62,000</u>	<u>117,800</u>
Income before extraordinary item			613,800
Extraordinary item:			
Gain on sale of investment		145,000	
Less applicable taxes		<u>58,000</u>	<u>87,000</u>
Net income			<u>\$ 700,800</u>

Per share of common stock:

Income from continuing operations			\$7.32
Discontinued operations, net of tax			<u>(1.18)</u>
Income before extraordinary item			6.14
Extraordinary item, net of tax			<u>.87</u>
Net income (\$700,800 ÷ 100,000)			<u>\$7.01</u>

PROBLEM 4-7 (Continued)

*Computation of income from cont. operations

before income taxes:

As previously stated	\$1,210,000
Write-off of accounts receivable	(26,000)
Loss on sale of equipment	<u>(4,000)</u>
Restated	<u>\$1,180,000</u>

**Computation of income tax expense:

$$\$1,180,000 \times .38 = \underline{\$448,400}$$

Note: The error related to the intangible asset was correctly charged to retained earnings.

TIME AND PURPOSE OF CASES

Case 4-1 (Time 20-25 minutes)

Purpose—to provide the student with the opportunity to comment on deficiencies in an income statement format. The student is required to comment on such items as inappropriate heading, incorrect classification of special items, proper net of tax treatment, and presentation of per share data.

Case 4-2 (Time 10-15 minutes)

Purpose—to provide the student a real company context to identify factors that make income statement information useful. The focus is on overly-aggregated information in a condensed income statement. Additional detail would seem to be warranted either on the face of the statement or with reference to the notes.

Case 4-3 (Time 25-35 minutes)

Purpose—to provide the student with an understanding of the difference between the current operating and all-inclusive income statement. Although the current operating statement has lost favor with the profession, the continual expansion of special items below income from continuing operations suggests that the profession believes merit exists for a modified current operating concept.

Case 4-4 (Time 20-25 minutes)

Purpose—to provide the student with an understanding of conditions where extraordinary item classification is appropriate. In this case, it should be emphasized that in situations where extraordinary item classification is not permitted, a classification as an unusual item may still be employed.

Case 4-5 (Time 20-25 minutes)

Purpose—to provide the student an illustration of how earnings can be managed. The case allows students to see the effects of warranty expense timing on the trend of income and illustrates the potential use of accruals to smooth earnings.

Case 4-6 (Time 20-25 minutes)

Purpose—to provide the student an illustration of how earnings can be managed by how losses are reported, including ethical issues.

Case 4-7 (Time 25-30 minutes)

Purpose—to provide the student with an unstructured case to comment on the reporting of discontinued operations and extraordinary items. In addition, the student is asked to comment on materiality considerations and earnings per share implications.

Case 4-8 (Time 30-40 minutes)

Purpose—to provide the student with the opportunity to comment on deficiencies in an income statement. This case includes discussion of extraordinary items, discontinued items, and ordinary gains and losses. The case is complete and therefore provides a broad overview to a number of items discussed in the textbook.

Case 4-9 (Time 20-25 minutes)

Purpose—to provide the student with a variety of situations involving classification of special items. This case is different from Case 4-8 in that an income statement is not presented. Instead, short factual situations are described. A good comprehensive case for discussing the presentation of special items.

Case 4-10 (Time 10-15 minutes)

Purpose—to provide the student with an opportunity to show how comprehensive income should be reported.

SOLUTIONS TO CASES

CASE 4-1

The deficiencies of John Amos Corporation income statement are as follows:

1. The heading is inappropriate. The heading should include the name of the company and the period of time for which the income statement is presented.
2. Gain on recovery of insurance proceeds should be classified as an extraordinary item in a separate section of the income statement.
3. Cost of goods sold is usually listed as the first expense, followed by selling, administrative, and other expenses.
4. Advertising expense is a selling expense and should usually be classified as such, unless this expense is unusually different from previous periods.
5. Loss on obsolescence of inventories might be classified as an unusual item and separately disclosed if it is unusual or infrequent but not both.
6. Loss on discontinued operations requires a separate classification after income from continuing operations and before presentation of income before extraordinary items.
7. Intraproduct income tax allocation is required to relate income tax expense to income from continuing operations, loss on discontinued operations, and the extraordinary item.
8. Per share data is a required presentation for income from continuing operations, discontinued operations, income before extraordinary item, extraordinary item, and net income.

CASE 4-2

- (a) The main deficiency in the Boeing income statement is that important information is being aggregated, particularly in the "Costs and expenses" line item. More detail likely could be found in Boeing's SEC Form 10K. However, the condensed income statement may be the one that investors and creditors rely upon.
- (b) Boeing could provide additional details on the expenses included in Costs and expenses on the face of the income statement. Alternatively, the company could provide the information in the notes to the financial statements, which could be referenced on the face of the income statement.

CASE 4-3

- (a) The "current operating performance" income statement is intended to provide a net income figure that is the best possible indication of the earning power of the business. Under this concept the importance of the amount of recurring net income, the indication of earning power, requires that all material extraordinary and nonrecurring items be reported as adjustments to retained earnings. Only items of revenue and expense applicable to the regular operations of the current period should be used in ascertaining net income for the period.

The "all-inclusive" income statement may be said to have been prepared on the "clean surplus" theory. All extraordinary and nonrecurring items, regardless of their materiality, are included in the determination of periodic net income. Thus, a series of income statements will reveal all income information for the periods covered by the statements.

CASE 4-3 (Continued)

- (b) An income statement prepared strictly on the current operating performance basis would show operating expenses deducted from net revenues to arrive at income from the operations which characterize the business. Recurring financial items are then added or deducted to produce net income. Material nonrecurring items are not included in the income statement but are charged or credited directly to retained earnings.

An income statement prepared strictly on the all-inclusive basis would show the same calculation of income from operations as does the current operating performance statement. Then the nonoperating and nonrecurring items and corrections of prior periods' profits would be added or deducted to produce net income.

There is substantial agreement that over the years all profits and losses should be accounted for in income, and a starting presumption is that all items of profit and loss recognized during an accounting period should be reported in the income of that period. However, it is recognized that readers of income statements draw inferences from a company's reported net income figure. For this reason extraordinary charges and credits should be segregated on the same income statement in a separate section appropriately labeled.

- (c) Arguments advanced for the "all-inclusive" income statement are:
1. Extraordinary items are related to income determination, and net income for the period would be misstated if they were excluded.
 2. All items should be included so that the income statements over a period of years will aggregate to the company's total income.
 3. Readers of the financial statements might be unaware that the retained earnings statement should be read as well as the income statement to determine the results of the year's activities. Items handled through retained earnings might be overlooked.
 4. Often there is no clear division between extraordinary items and operating items—frequently the distinction is a matter of opinion.
 5. Charges and credits to retained earnings imply that the items are nonrecurring, but such items do recur.
 6. There is a tendency for retained earnings charges to exceed credits so that, over a period of years, the income statements would exaggerate the company's earning power.
 7. Retained earnings charges and credits create an opportunity for manipulation or normalization in the determination of net income.
 8. Inconsistencies in determining extraordinary items affect the comparability of the company's earnings with prior years and with earnings of other companies.
 9. The reader's attention is directed to the estimated and tentative nature of the income statement when corrections of prior years' net income are included.

Arguments offered for the "current operating performance" income statement are:

1. The earning power of the company is of interest to investors and others. Only normal operations produce the net income in which they are interested.
2. When nonrecurring items are included in the income statement, some readers are unable to determine the results of normal operations.
3. Inclusion of nonrecurring items causes difficulty in determining the trend of the company's operations and in comparing the results of operations with others.
4. There is a distortion of income for two years when a material correction of a prior year's net income is reported in the income statement.

CASE 4-4

1. Classify as an extraordinary item because the two conditions of an extraordinary item, unusual in nature and infrequent in occurrence, are met.
2. Classify as a loss, but not extraordinary. Such losses would not be considered unusual for a business enterprise.
3. Classify as an extraordinary loss because the two conditions of an extraordinary item, unusual in nature and infrequent in occurrence, are met.
4. Classify as gain or loss, but not extraordinary. Because the company maintains a portfolio of such securities, the gain or loss would not be considered unusual in nature.
5. Classify gain or loss as extraordinary if the two conditions of an extraordinary item, unusual in nature and infrequent in occurrence, are met.
6. Classify as a gain or loss, but not extraordinary. Company practices indicate such sales are not unusual or infrequent in occurrence.
7. Material losses on extinguishment of debt should not be classified as extraordinary items. Note to instructors: The FASB recently changed the accounting in this area.
8. Classify as a loss, but not extraordinary. The loss is not an infrequent occurrence taking into account the environment in which the entity operates.
9. Classify as an extraordinary item if the two conditions of an extraordinary item, unusual in nature and infrequent in occurrence, are met.

CASE 4-5

- (a) Earnings management is often defined as the planned timing of revenues, expenses, gains and losses to smooth out bumps in earnings. In most cases, earnings management is used to increase income in the current year at the expense of income in future years. For example, companies prematurely recognize sales before they are complete in order to boost earnings. Earnings management can also be used to decrease current earnings in order to increase income in the future. The classic case is the use of “cookie jar” reserves, which are established, by using unrealistic assumptions to estimate liabilities for such items as sales returns, loan losses, and warranty returns.

(b) Proposed Accounting	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
Income before warranty expense				\$43,000	\$43,000
Warranty expense				<u>8,000</u>	<u>2,000</u>
Income	<u>\$20,000</u>	<u>\$25,000</u>	<u>\$30,000</u>	<u>\$35,000</u>	<u>\$41,000</u>

Assuming the same income before warranty expense for both 2004 and 2005 and total warranty expense over the 2-year period of \$10,000, this proposed accounting results in steadily increasing income over the two-year period.

CASE 4-5 (Continued)

(c) Appropriate Accounting	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
Income before warranty expense				\$43,000	\$43,000
Warranty expense				<u>5,000</u>	<u>5,000</u>
Income	<u>\$20,000</u>	<u>\$25,000</u>	<u>\$30,000</u>	<u>\$38,000</u>	<u>\$38,000</u>

The appropriate accounting would be to record \$5,000 in 2004, resulting in income of \$38,000. However, with the same amount of warranty expense in 2005, Grace no longer shows an increasing trend in income. Thus, by taking more expense in 2004, Grace can save some income (a classic case of “cookie-jar” reserves) and maintain growth in income.

CASE 4-6

- (a) The ethical issues involved are integrity and honesty in financial reporting, full disclosure, accountant’s professionalism, and job security for Arthur.
- (b) If Arthur believes the losses are relevant information important to users of the income statement, he should disclose the losses separately. If they are considered incidental to the company’s normal activities—i.e., the major activities of the Salem Corporation do not include selling equipment—the transactions should be reported among any gains and losses that occurred during the year.

CASE 4-7

- (a) It appears that the sale of the Casino Royale Division would qualify as a discontinued operation. The operation of gambling facilities appears to meet the criteria for discontinued operations for Woody Allen Corp. and, therefore, the accounting requirements related to discontinued operations should be followed. Although the financial vice-president might be correct theoretically, professional pronouncements require that such a segregation be made. The controller is incorrect in stating that the disposal of the Casino Royale Division should be reported as an extraordinary item. A separate classification is required for disposals meeting the requirements of discontinued operations. If this disposal did not meet the requirements for disposal of a component of a business, extraordinary item treatment might be considered appropriate.
- (b) The “walkout” or strike should not be reported as an extraordinary item. Events of this nature are a general risk that any business enterprise takes and should not warrant extraordinary item treatment. **APB Opinion No. 30** specifically indicates that the effect of a strike should not be reported as an extraordinary item.
- (c) The financial vice-president is incorrect in his/her observations concerning the materiality of extraordinary items. The materiality of each extraordinary item must be considered individually. It is not appropriate to consider only the materiality of the net effect. Each extraordinary item must be reported separately on the income statement.
- (d) Earnings per share for income from continuing operations, discontinued operations, income before extraordinary items, extraordinary items, and net income must be reported on the face of the income statement.

CASE 4-8

The income statement of Cynthia Taylor Corporation contains the following weaknesses in classification and disclosure:

1. **Sales taxes.** Sales taxes have been erroneously added to both gross sales and cost of goods sold on the income statement of Cynthia Taylor Corporation. Failure to deduct these taxes directly from customer billings results in a deceptive inflation of the amount of sales. These taxes should be deducted from gross sales because the corporation acts as an agent in collecting and remitting such taxes to the state government.
2. **Purchase discounts.** Purchase discounts should not be treated as revenue by being lumped with other revenues such as dividends and interest. A purchase discount is more logically a reduction of the cost of purchases because revenue is not created by purchasing goods and paying for them. In a cash transaction, cost is measured by the amount of the cash consideration. In a credit transaction, however, cost is measured by the amount of cash required to settle immediately the obligation incurred. The discount should reduce the cost of goods sold to the amount of cash that would be required to settle the obligation immediately.
3. **Recoveries of amounts written off in prior years.** These collections should be credited to the allowance for doubtful accounts unless the direct write-off method was used in accounting for bad debt expense. Generally, the direct write-off method is not allowed.
4. **Freight-in and freight-out.** Although freight-out is an expense of selling and is therefore reported properly in the statement, freight-in is an inventoriable cost and should have been included in the computation of cost of goods sold. The value assigned to inventory should represent the value of the economic resources given up in obtaining goods and readying them for sale.
5. **Loss on discontinued styles.** This type of loss, though often substantial, should not be treated as an extraordinary item because it is apparently typical of the customary business activity of the corporation. It should be reported in "Costs and expenses" as an operating expense.
6. **Loss on sale of marketable securities.** This item should be reported as a separate component of income from continuing operations and not as an extraordinary item. The conditions of unusual in nature and infrequent in occurrence are not met.
7. **Loss on sale of warehouse.** This type of item is specifically excluded by **APB Opinion No. 30** from treatment as an extraordinary item unless such a loss is the direct result of a major casualty, an expropriation, or a prohibition under a newly enacted law or regulation. This item should be separately disclosed as an unusual item, if either unusual in nature or infrequent in occurrence.
8. **Federal income taxes.** The provision for federal income taxes and intraperiod tax allocation are not presented in the income statement.

This omission implies that the federal income tax is a distribution of net income instead of an operating expense and a determinant of net income. This assumption, the essence of the enterprise concept of net income, is not as relevant to the majority of financial statement users as the concept of net income to investors, stockholders, or residual equity holders. Also, by law the corporation must pay federal income taxes whether the benefits it receives from the government are direct or indirect. Finally, those who base their decisions upon financial statements are thought to look to net income after taxes as being a more relevant measure of income than income before taxes.

CASE 4-9

	<u>Classification</u>	<u>Rationale</u>
1.	No disclosure.	Error has "washed out"; that is, subsequent income statement compensated for the error. However, prior year income statements should be restated.
2.	Extraordinary item section.	Material, unusual in nature, and infrequent in occurrence.
3.	Separate disclosure of depreciation expense in body of income statement, based on new useful life.	Material item, but change in estimated useful life is considered part of normal business activity.
4.	No separate disclosure unless material.	Change in estimate, considered part of normal business activity.
5.	Reported in body of the income statement, possibly as an unusual item.	Sale does not meet criteria for either the disposal of a component of the business or an extraordinary item.
6.	Cumulative effect of a change in accounting principle.	A change in depreciation methods is a change in accounting principle.
7.	Reported in body of the income statement, possibly as an unusual item.	Loss on preparation of such proposals is not considered extraordinary in nature.
8.	Reported in body of the income statement, possibly as an unusual item.	Strikes are not considered extraordinary in nature.
9.	Prior period adjustment, adjust beginning retained earnings.	Corrections of errors are shown as prior period adjustments.
10.	Extraordinary item section.	Material, unusual in nature, and infrequent in occurrence.
11.	Discontinued operations section.	Segment's assets, results of operations, and activities are clearly distinguishable physically, operationally, and for financial reporting purposes.

CASE 4-10

(a) Separate Statement

	<u>Current Year</u>	<u>Prior Year</u>
Net income	<u>\$400,000</u>	<u>\$410,000</u>
Statement of Comprehensive Income		
Net Income	\$400,000	\$410,000
Unrealized Gains	<u>20,000</u>	<u> </u>
Comprehensive Income	<u>\$420,000</u>	<u>\$410,000</u>

(b) Combined Format

...income components...		
Net income	\$400,000	\$410,000
Other Comprehensive Income		
Unrealized Gains	<u>20,000</u>	<u> </u>
Comprehensive Income	<u>\$420,000</u>	<u>\$410,000</u>

- (c) Arthur can choose either approach, according to SFAS No. 130 or report the unrealized gains in stockholders' equity. The method chosen should be based on which one provides the most useful information. For example, Arthur should not choose the combined format because the gains result in an increasing trend in Comprehensive Income, while Net Income is declining.

FINANCIAL REPORTING PROBLEM

- (a) 3M uses the multiple-step income statement because it separates operating from nonoperating activities. A multiple-step income statement is used to recognize additional relationships related to revenues and expenses. 3M recognizes a separation of operating transactions from nonoperating transactions. As a result, trends in income from continuing operations should be easier to understand and analyze. Disclosure of operating income may assist in comparing different companies and assessing operating efficiencies.
- (b) 3M operates in the consumer products market. The company separates its operations into six segments:
- Transportation, Graphics, and Safety—21.9%
 - Health Care—21.3%
 - Industrial—19.9%
 - Consumer and Office—16.9%
 - Electro and Communications—13.5%
 - Specialty Material—6.4%
- (c) 3M's gross profit (Sales – Cost of Sales) was \$7,330 million in 2001, \$7,937 million in 2000, and \$7,622 million in 1999. 3M's gross profit declined by 7.6% in 2001 compared to 2000. The decline in the gross profit in 2001 is due primarily to declining selling prices and lower international sales due to a stronger U.S. dollar.
- (d) 3M probably makes a distinction between operating and nonoperating revenue for the reasons mentioned in the solution to Part (a). Interest expense and interest income increased in 2001 compared to 2000. By

FINANCIAL REPORTING PROBLEM (Continued)

separating out these revenue and expense items, the statement reader can see the separate impacts of operating and financing activities.

- (e) 3M reports the following ratios in its 11-year “Financial Summary” section: current ratio, return on invested capital, total debt to total capital, book value per share, working capital. The Financial Summary also reports income statement items, such as cost of sales, selling, general, and administrative expenses, and operating income, all as a percentage of sales.**

FINANCIAL STATEMENT ANALYSIS CASE 1

- (a) Depending on the company chosen, student answers will vary. Given the ready availability, the analysis for PepsiCo is provided below:

Altman Z Analysis

$$Z = \frac{\text{Working Capital}}{\text{Total Assets}} \times 1.2 + \frac{\text{Retained Earnings}}{\text{Total Assets}} \times 1.4 + \frac{\text{EBIT}}{\text{Total Assets}} \times 3.3 + \frac{\text{Sales}}{\text{Total Assets}} \times 0.99 + \frac{\text{MV Equity}}{\text{Total Liabilities}} \times 0.6$$

PepsiCo (\$000,000)	Weights			2001	2000
	2001	2000			
Total Assets	21,695.00	20,757.00			
Current Assets	5,853.00	5,617.00			
Current Liabilities	4,998.00	4,795.00			
Working Capital	855.00	822.00			
Working Capital/Assets	0.039	0.040	1.2	0.047	0.048
Retained Earnings	11,519.00	16,510.00			
Retained Earnings/Assets	0.531	0.795	1.4	0.743	1.113
EBIT	4,021.00	3,818.00			
EBIT/Assets	0.185	0.184	3.3	0.611	0.607
Sales	26,935.00	25,479.00			
Sales/Assets	1.24	1.23	0.99	1.227	1.218
MV Equity	86,131.80	86,680.44			
Total Liabilities	13,021.00	13,131.00			
MV Equity/Total Liabilities	6.61	6.59	0.6	3.966	3.96
Market Price	49.05	49.56	Z-Score	6.594	6.95
Shares Outstanding	1,756.00	1,749.00			

FINANCIAL STATEMENT ANALYSIS CASE 1 (Continued)

- (b) PepsiCo's Z-score in 2001 has decreased but is easily in a range suggesting it is unlikely to go bankrupt. The decline in retained earnings is the result of a charge for 6.6 billion shares to effect the merger with Quaker Oats.**

Note to instructors—as an extension, students could be asked to conduct the analysis on companies which are in financial distress (e.g., Xerox, Enron) to examine whether their financial distress could have been predicted in advance.

- (c) EBIT is an operating income measure. By adding back items less relevant to predicting future operating results (interest, taxes), it is viewed as a better indicator of future profitability.**

FINANCIAL STATEMENT ANALYSIS CASE 2

Earnings (loss) per common share (\$97.7 ÷ 177.636)	
Earnings from continuing operations	\$0.55
Discontinued operations	<u>(0.20)</u>
Earnings before extraordinary items and accounting changes	0.35
Extraordinary items	(0.03)*
Cumulative effect of accounting changes	<u>(2.22)</u>
Net earnings (loss) (\$337.7 ÷ 177.636)	<u>(1.90)</u>

*\$.01 rounding difference.

COMPARATIVE ANALYSIS CASE

- (a) Both companies are using the multiple-step format in presenting income statement information. Companies use the multiple-step income statement to recognize additional relationships related to revenues and expenses. Both companies distinguish between operating and nonoperating transactions. As a result, trends in income from continuing operations should be easier to understand and analyze. Disclosure of operating income may assist in comparing different companies and assessing operating efficiencies.

The Coca-Cola Company shows an additional intermediate component of income—gross profit. PepsiCo does not report this information on its income statement.

- (b) The gross profit, operating profit, and net income for these two companies are as follows:

(\$000,000)

PepsiCo	<u>2001</u>	<u>2000</u>	<u>1999</u>	% Change
Sales	\$26,935	\$25,479	\$25,093	7.34%
Cost of Sales	<u>10,754</u>	<u>10,226</u>	<u>10,326</u>	4.14%
Gross Profit	16,181	15,253	14,767	9.58%
 Operating Profit	 4,021	 3,818	 3,483	 15.4%
 Net Income	 2,662	 2,543	 2,505	 6.27%

COMPARATIVE ANALYSIS CASE (Continued)

Coca-Cola	<u>2001</u>	<u>2000</u>	<u>1999</u>	% Change
Sales	\$20,092	\$19,889	\$19,284	4.19%
Cost of Sales	<u>6,044</u>	<u>6,204</u>	<u>6,009</u>	.58%
Gross Profit	14,048	13,685	13,275	5.82%
Operating Income	5,352	3,691	3,982	34.40%
Net Income	\$3,969	\$2,177	\$2,431	63.27%

As shown in the table above, the two companies reported similar incomes for 1999 and 2000. Coke's net income for 2001 accounted for the large percentage increase over the three year period.

- (c) Coca-Cola reported unusual expenses in 1999 and 2000 of \$813 million and \$1.443 billion respectively related to the bottling operations. As a result, operating income for these two years was depressed. Pepsi reported a gain on bottling transactions in 1999 through 2001, which increased its income those years and makes year-to-year comparisons of net income distorted. These items are significant for both companies because they have contributed to bottom line net income in prior years but there is uncertainty about whether these items will recur in the future.
- (d) PepsiCo discusses 5 items that affect comparability of amounts in their financial statements: 1) 53 weeks in 2000 compared to 52 in 1999; 2) Restructuring of their bottling operations; 3) Impairment and Restructuring charges in 1999 and 1998; 4) Acquisitions and Mergers; and 5) Income Tax adjustments.

COMPARATIVE ANALYSIS CASE (Continued)

With respect to 1), with an extra week in 2000, the levels of sales and income are higher and not comparable—note that PepsiCo discloses how much sales and profits are higher due to the difference in the length of accounting period.

For 2), in 2000 Pepsi became non-controlling shareholder in its bottling operations. As a result, some of these businesses are now reflected in Pepsi's financial statements as equity investments—gains on these investments were discussed in (c) above.

With respect to number 3), in part (c), we discuss the effects of one-time charges, restructuring charges, and write-offs. For number 4), two items will affect results in future periods. The prior acquisition of Tropicana has been reflected in the financial statements since 1998, and the merger with Quaker Oats in 2000.

For number 5), Adjustment to tax accrual and tax assets from the Quaker Oats merger and the effect of operating loss carry forwards also affect comparability.

RESEARCH CASE 1

- (a) There are a number of differences: (1) Boeing aggregates all revenue into a single sum while UAL identifies the major sources, (2) Boeing includes little detail on costs and expenses (2 line items) while UAL includes 11 items under “Operating Expenses,” and (3) Boeing includes only interest expense and income outside of the operating expense section. UAL uses a separate section for interest expense and “other” items.**
- (b) UAL reported an extraordinary item related to extinguishment of debt in 2000 and 1999. Boeing has no irregular items. Both companies report cumulative effects of accounting changes—Boeing in 2001, UAL in 2001 and 2000.**
- (c) As a service firm, UAL does not report cost of goods sold. As a manufacturer, Boeing’s depreciation will appear in its cost of sales and selling and administrative expenses. Boeing’s depreciation expense appears in its statement of cash flows.**
- (d) Depends on preference for conciseness versus detail.**

RESEARCH CASE 2

- (a) The second income statement would report comprehensive income, which includes all changes in equity during a period except those resulting from investments by owners and distributions to owners.**
- (b) Under current GAAP, many income items bypass the traditional income statement and are reported directly in equity. As a result, equity is becoming “a dumpster for an amorphous and growing mass of important information.”**
- (c) The alternatives identified include: (1) providing two separate income statements, (2) creating a single statement which reports traditional income as a subtotal and comprehensive income as the bottom line, and (3) creating a three-column statement of stockholders’ equity.**

INTERNATIONAL REPORTING CASE

- (a) Some of the differences are:
1. The title of the statement is different.
 2. Units of currency—Avon reports in pounds sterling and Earnings Per Share is 12.4 pence.
 3. Terminology—The term used for sales is “Turnover”. Interest revenue and expense are referred to as receivables and payables.
 4. Avon separates out components between exceptional items and before exceptional items. The profit for the year was 5,247 higher before exceptional items.
- (b) The “Profit on the disposal of fixed assets” is an example of an irregular item. As in the U.S., these items are included in the measurement of income but they are separate from “Operating Profit”, likely due to their non-recurring nature. British companies also report interest revenue and expense under a separate heading in the income statement. This distinguishes income from the operating and financing activities of the company.

PROFESSIONAL SIMULATION

Explanation

As indicated in the income statement below, the loss on abandonment is reported as an “other expense and loss.” The gain on disposal of a business component is reported as part of discontinued operations, net of tax. Gross profit is \$1,550,000, income from operations is \$930,000; income from continuing operations before taxes is \$900,000; net income is \$700,000; and earnings per share (on net income) is \$7.00.

Measurement

Ritter Corporation
Income Statement
For the Year Ended December 31, 2004

Sales		\$3,200,000
Cost of goods sold		<u>1,650,000</u>
Gross profit		1,550,000 (a)
Selling expenses	\$340,000	
Administrative expenses	<u>280,000</u>	<u>620,000</u>
Income from operations		930,000 (b)
Other revenues and gains		
Interest revenue	10,000	
Other expenses and losses		
Loss from plant abandonment	<u>40,000</u>	<u>30,000</u>
Income from continuing operations, before income taxes		900,000 (c)
Income taxes (30% X 900,000)		<u>270,000</u>
Income from continuing operations		630,000
Discontinued operations		
Gain on disposal of component of business	90,000	
Less: Applicable income tax	<u>27,000</u>	<u>63,000</u>

Professional Simulation (Continued)

Income before extraordinary items and cumulative effect of a change in accounting principle		693,000
Extraordinary items		
Loss from earthquake	40,000	
Less: Applicable income tax	<u>12,000</u>	<u>(28,000)</u>
Cumulative effect on prior years of retroactive application of new depreciation method	50,000	
Less: Applicable income tax	<u>15,000</u>	<u>35,000</u>
Net income		<u>\$700,000 (d)</u>
Per share of common stock		
Income from continuing operation		\$6.30
Discontinued operation		<u>0.63</u>
Income before extraordinary items and cumulative effect of accounting change		6.93
Extraordinary item, loss from earthquake, net of tax		(0.28)
Change in accounting principle, net of tax		<u>0.35</u>
Net income		<u>\$7.00 (e)</u>

CHAPTER 5

Balance Sheet and Statement of Cash Flows

ASSIGNMENT CLASSIFICATION TABLE

Topics	Questions	Brief			Cases
		Exercises	Exercises	Problems	
1. Disclosure principles, uses of the balance sheet, financial flexibility.	1, 2, 3, 4, 5, 6, 7, 10, 18, 22, 23, 25	1			4, 5
2. Classification of items in the balance sheet and other financial statements.	11, 12, 13, 14, 15, 16, 18, 19	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11	1, 2, 3, 4, 6, 7, 8, 9, 10		1, 2, 3
3. Preparation of balance sheet; issues of format, terminology, and valuation.	4, 7, 8, 9, 16, 17, 20, 21, 24		4, 5, 6, 7, 11, 12	1, 2, 3, 4, 5	3, 4, 5
4. Statement of cash flows.	25, 26, 27, 28, 29, 30, 31, 32	12, 13, 14, 15, 16	13, 14, 15, 16, 17, 18	6, 7	6

ASSIGNMENT CHARACTERISTICS TABLE

Item	Description	Level of Difficulty	Time (minutes)
E5-1	Balance sheet classifications.	Simple	15-20
E5-2	Classification of balance sheet accounts.	Simple	10-15
E5-3	Classification of balance sheet accounts.	Simple	15-20
E5-4	Preparation of a classified balance sheet.	Simple	30-35
E5-5	Preparation of a corrected balance sheet.	Simple	30-35
E5-6	Correction of a balance sheet.	Moderate	30-35
E5-7	Current asset section of the balance sheet.	Moderate	15-20
E5-8	Current vs. long-term liabilities.	Moderate	10-15
E5-9	Current assets and current liabilities.	Moderate	30-35
E5-10	Current liabilities	Moderate	15-20
E5-11	Preparation of a balance sheet.	Moderate	25-30
E5-12	Preparation of a balance sheet.	Moderate	30-35
E5-13	Statement of cash flows—classification.	Moderate	15-20
E5-14	Preparation of a statement of cash flows.	Moderate	25-35
E5-15	Preparation of a statement of cash flows.	Moderate	25-35
E5-16	Preparation of a statement of cash flows.	Moderate	25-35
E5-17	Preparation of a statement of cash flows and a balance sheet.	Moderate	30-35
E5-18	Preparation of a statement of cash flows, analysis.	Moderate	25-35
P5-1	Preparation of a classified balance sheet—periodic inventory..	Moderate	30-35
P5-2	Balance sheet preparation.	Moderate	35-40
P5-3	Balance sheet adjustment and preparation.	Moderate	40-45
P5-4	Preparation of a corrected balance sheet.	Complex	40-45
P5-5	Balance sheet adjustment and preparation.	Complex	40-50
P5-6	Preparation of a statement of cash flows.	Complex	35-45
P5-7	Preparation of a statement of cash flows.	Complex	40-50
C5-1	Reporting for financial effects of varied transactions.	Moderate	20-25
C5-2	Current asset and liability classification.	Moderate	25-30
C5-3	Identifying balance sheet deficiencies.	Moderate	30-35
C5-4	Critique of balance sheet format and content.	Simple	20-25
C5-5	Identifying balance sheet deficiencies.	Moderate	25-30
C5-6	Reporting Property, Plant, and Equipment.	Simple	20-25
C5-7	Cash flow analysis.	Complex	40-50

ANSWERS TO QUESTIONS

1. The balance sheet provides information about the nature and amounts of investments in enterprise resources, obligations to enterprise creditors, and the owners' equity in net enterprise resources. That information not only complements information about the components of income, but also contributes to financial reporting by providing a basis for (1) computing rates of return, (2) evaluating the capital structure of the enterprise, and (3) assessing the liquidity and financial flexibility of the enterprise.
2. Solvency refers to the ability of an enterprise to pay its debts as they mature. For example, when a company carries a high level of long-term debt relative to assets, it has lower solvency. Information on long-term obligations, such as long-term debt and notes payable, in comparison to total assets and equity can be used to assess resources that will be needed to meet these fixed obligations (such as interest and principal payments).
3. Financial flexibility is the ability of an enterprise to take effective actions to alter the amounts and timing of cash flows so it can respond to unexpected needs and opportunities. An enterprise with a high degree of financial flexibility is better able to survive bad times, to recover from unexpected setbacks, and to take advantage of profitable and unexpected investment opportunities. Generally, the greater the financial flexibility, the lower the risk of enterprise failure.
4. Some situations in which estimates affect amounts reported in the balance sheet include:
 - a) allowance for loan losses.
 - b) depreciable lives and estimated salvage values for plant and equipment.
 - c) warranty returns.
 - d) determining the amount of revenues that should be recorded as unearned.

When estimates are required, there is subjectivity in determining the amounts. Such subjectivity can impact the usefulness of the information by reducing the reliability of the measures, either because of bias or lack of verifiability.

5. An increase in inventories increases current assets, which is in the numerator of the current ratio. Therefore, inventory increases will increase the current ratio. In general, an increase in the current ratio indicates a company has better liquidity, since there are more current assets relative to current liabilities.

Note to instructors—When inventories increase faster than sales, this may not be a good signal about liquidity. That is, inventory can only be used to meet current obligations when it is sold (and converted to cash). That is why some analysts use a liquidity ratio—the acid test ratio—that excludes inventories from current assets in the numerator.

6. Liquidity describes the amount of time that is expected to elapse until an asset is converted into cash or until a liability has to be paid. The ranking of the assets given in order of liquidity is:
 - (1) (d) Short-term investments.
 - (2) (e) Accounts receivable.
 - (3) (b) Inventories.
 - (4) (c) Buildings.
 - (5) (a) Goodwill.
7. The major limitations of the balance sheet are:
 - (1) The values stated are generally historical and not current.
 - (2) Estimates have to be used in many instances, such as in the determination of collectibility of receivables or finding the approximate useful life of long-term tangible and intangible assets.
 - (3) Many items, even though they have financial value to the business, presently are not recorded. One example is the value of a company's human resources.

Questions Chapter 5 (Continued)

8. Some items of value to technology companies such as Intel or IBM are the value of research and development (new products that are being developed but which are not yet marketable), the value of the "intellectual capital" of its workforce (the ability of the companies' employees to come up with new ideas and products in the fast changing technology industry), and the value of the company reputation or name brand (e.g., the "Intel Inside" logo). In most cases, the reasons why the value of these items are not recorded in the balance sheet concern the lack of reliability of the estimates of the future cash flows that will be generated by these "assets" (for all three types) and the ability to control the use of the asset (in the case of employees). Being able to reliably measure the expected future benefits and to control the use of an item are essential elements of the definition of an asset, according to the Conceptual Framework.
9. Classification in financial statements helps users by grouping items with similar characteristics and separating items with different characteristics. Current assets are expected to be converted to cash within one year or one operating cycle, while property, plant and equipment, will provide cash inflows over a longer period of time. Thus, separating long-term assets from current assets facilitates computation of useful ratios such as the current ratio.
10. Separate amounts should be reported for accounts receivable and notes receivable. The amounts should be reported gross, and an amount for the allowance for doubtful accounts should be deducted. The amount and nature of any nontrade receivables, and any amounts pledged or discounted, should be clearly stated.
11. Available-for-sale securities should be reported as a current asset only if management expects to convert them into cash as needed within one year or the operating cycle, whichever is longer. If available-for-sale securities are not held with this expectation, they should be reported as long-term investments.
12. The relationship between current assets and current liabilities is that current liabilities are those obligations that are reasonably expected to be liquidated either through the use of current assets or the creation of other current liabilities.
13. The total selling price of the season tickets is \$10,000,000 (10,000 X \$1,000). of this amount, \$4,500,000 has been earned by 12/31/04 (18/40 X \$10,000,000). The remaining \$5,500,000 should be reported as unearned revenue, a current liability in the 12/31/04 balance sheet (22/40 X \$10,000,000).
14. Working capital is the excess of total current assets over total current liabilities. This excess is sometimes called net working capital, with current assets and current liabilities being the components of working capital. Current assets and current liabilities consist of items that will be converted into cash or paid within a year or the operating cycle, whichever is longer. The working capital components are the financial resources utilized by an enterprise in its operating cycle.
15. (a) Stockholders' Equity. "Capital stock (_____ shares) reacquired and held in treasury—at cost."
Note: This is a reduction of stockholders' equity.
(b) Current Assets. Included in "Cash."
(c) Investments. "Land held as an investment."
(d) Investments. "Sinking Fund."
(e) Long-term debt (adjunct account to bonds payable). "Unamortized premium on bonds payable."
(f) Intangible Assets. "Copyrights."
(g) Investments. "Employees' pension fund," with subcaptions of "Cash" and "Securities" if desired. (Assumes that the company still owns these assets.)
(h) Stockholders' Equity. "Premium on capital stock" or "Additional paid-in capital in excess of par value."

Questions Chapter 5 (Continued)

- (i) Investments. Nature of investments should be given together with parenthetical information as follows: "pledged to secure loans payable to banks."
16. (a) Allowance for doubtful accounts receivable should be deducted from accounts receivable.
- (b) Merchandise held on consignment should not appear on the consignee's balance sheet except possibly as a note to the financial statements.
- (c) Advances received on sales contract are normally a current liability and should be shown as such in the balance sheet.
- (d) Cash surrender value of life insurance should be shown as a long-term investment.
- (e) Land should be reported in property, plant, and equipment unless held for investment.
- (f) Merchandise out on consignment should be shown among current assets under the heading of inventories.
- (g) Pension fund on deposit with trustee should be shown among noncurrent assets under a separate heading or grouped with similar funds and deposits in investment section. Note: Some pension funds are not reported on the balance sheet. This situation occurs when the company funds the pension plan through another party such that the company loses control over the funds.
- (h) Franchises should be itemized in a section for intangible assets.
- (i) Accumulated depreciation of plant and equipment should be deducted from the plant and equipment accounts.
- (j) Materials in transit should not be shown on the balance sheet of the buyer, if purchased f.o.b. destination.
17. (a) Trade accounts receivable should be stated at their estimated realizable value. The method most generally followed is to deduct from the total accounts receivable the amount of the allowance for doubtful accounts.
- (b) Land is generally stated in the balance sheet at cost.
- (c) Inventories are generally stated at the lower of cost or market to provide for any possible losses and to avoid the anticipation of profits not yet realized.
- (d) Trading securities consisting of common stock are generally stated at fair value.
- (e) Prepaid expenses should be stated at cost less the amount apportioned to and written off over the previous accounting periods.
18. Assets are defined as probable future economic benefits obtained or controlled by a particular entity as a result of past transactions or events. If a building is leased, the future economic benefits of using the building are controlled by the lessee as the result of a past event (the signing of a lease agreement).
19. Agazzi is incorrect. Retained earnings is a **source** of assets, but is not an asset itself. For example, even though the funds obtained from issuing a note payable are invested in the business, the note payable is not reported as an asset. It is a **source** of assets, but it is reported as a liability because the company has an obligation to repay the note in the future. Similarly, even though the earnings are invested in the business, retained earnings is not reported as an asset. It is reported as part of stockholders' equity because it is, in effect, an investment by owners which increases the ownership interest in the assets of an entity.
20. The notes should appear as long-term liabilities with full disclosure as to their terms. Each year, as the profit is determined, notes of an amount equal to two-thirds of the year's profits should be transferred from the long-term liabilities to current liabilities until all of the notes have been liquidated.
21. Some of the techniques of disclosure for the balance sheet are:
- 1. Parenthetical explanations.
 - 2. Notes to the financial statements.

Questions Chapter 5 (Continued)

3. Supporting schedules.
 4. Cross references and contra and adjunct items.
22. A statement entitled "Summary of Significant Accounting Policies" would indicate the basic accounting principles used by that enterprise. This statement should be very useful from a comparative standpoint, since it should be easy to determine whether the company uses the same accounting policies as other companies in the same industry.
23. General debt obligations, lease contracts, pension arrangements and stock option plans are four items for which disclosure is mandatory in the financial statements. The reason for disclosing these contractual situations is that these commitments are of a long-term nature, are often significant in amount, and are very important to the company's well-being.
24. The profession has recommended that the use of the word "surplus" be discontinued in balance sheet presentations of owners' equity. This term has a connotation outside accounting that is quite different from its meaning in the accounts or in the balance sheet. The use of the terms capital surplus, paid-in surplus, and earned surplus is confusing to the nonaccountant and leads to misinterpretation.
25. The purpose of a statement of cash flows is to provide relevant information about the cash receipts and cash payments of an enterprise during a period. It differs from the balance sheet and the income statement in that it reports the sources and uses of cash by operating, investing, and financing activity classifications. While the income statement and the balance sheet are accrual basis statements, the statement of cash flows is a cash basis statement—noncash items are omitted.
26. The difference between these two amounts may be due to increases in current assets, or decreases in current liabilities, or both. Such items would increase net income under accrual basis accounting, as opposed to cash basis accounting.
27. The difference between these two amounts is due to noncash charges that appear in the income statement. Examples of noncash charges are depreciation, depletion, amortization of intangibles, discount amortization, and expenses recorded but unpaid.
28. **Operating activities** involve the cash effects of transactions that enter into the determination of net income. **Investing activities** include making and collecting loans and acquiring and disposing of debt and equity instruments and property, plant, and equipment. **Financing activities** involve liability and owners' equity items and include obtaining capital from owners and providing them with a return on (dividends) and a return of their investment and borrowing money from creditors and repaying the amounts borrowed.
29. (a) Net income is adjusted downward by deducting \$7,000 from \$90,000 and reporting cash provided by operating activities as \$83,000.
- (b) The issuance of the preferred stock is a financing activity. The issuance is reported as follows:
- | | |
|--------------------------------------|--------------------|
| Cash flows from financing activities | |
| Issuance of preferred stock | <u>\$1,150,000</u> |

Questions Chapter 5 (Continued)

- (c) Net income is adjusted as follows:
- | | |
|---|-----------------|
| Cash flows from operating activities | |
| Net income | \$90,000 |
| Adjustments to reconcile net income to net cash provided by operating activities: | |
| Depreciation expense | 14,000 |
| Premium amortization | <u>(5,000)</u> |
| Net cash provided by operating activities | <u>\$99,000</u> |
- (d) The increase of \$20,000 reflects an investment activity. The increase in Land is reported as follows:
- | | |
|--|-------------------|
| Cash flows from investment activities: | |
| Investment in Land | <u>\$(20,000)</u> |

30. The company appears to have good liquidity and reasonable financial flexibility. Its current cash debt coverage ratio is $.90 \left(\frac{\$900,000}{\$1,000,000} \right)$, which indicates that it can almost pay off its current liabilities in given year from its operations. In addition, its cash debt coverage ratio is also good at $.60 \left(\frac{\$900,000}{\$1,500,000} \right)$, which indicates that it can pay off more than 50% of its debt out of current operations.
31. Free cash flow = \$860,000 – \$75,000 – \$20,000 = \$ 765,000.
32. Free cash flow is net cash provided by operating activities less capital expenditures and dividends. The purpose of free cash flow analysis is to determine the amount of discretionary cash flow a company has for purchasing additional investments, retiring its debt, purchasing treasury stock, or simply adding to its liquidity.

SOLUTIONS TO BRIEF EXERCISES

BRIEF EXERCISE 5-1

Current assets

Cash		\$27,000
Accounts receivable	\$110,000	
Less allowance for doubtful accounts	<u>(8,000)</u>	102,000
Inventories		290,000
Prepaid insurance		<u>9,500</u>
Total current assets		<u>\$428,500</u>

BRIEF EXERCISE 5-2

Current assets

Cash		\$ 7,000
Trading securities		11,000
Accounts receivable	\$90,000	
Less allowance for doubtful accounts	<u>(4,000)</u>	86,000
Inventory		34,000
Prepaid insurance		<u>5,200</u>
Total current assets		<u>\$143,200</u>

BRIEF EXERCISE 5-3

Long-term investments

Held-to-maturity securities		\$ 61,000
Land held for investment		39,000
Long-term receivables		<u>42,000</u>
Total investments		<u>\$142,000</u>

BRIEF EXERCISE 5-4

Property, plant, and equipment

Land		\$ 61,000
Buildings	\$207,000	
Less accumulated depreciation	<u>(45,000)</u>	162,000
Equipment	\$190,000	
Less accumulated depreciation	<u>(19,000)</u>	171,000
Capital leases		<u>70,000</u>
Total property, plant, and equipment		<u>\$464,000</u>

BRIEF EXERCISE 5-5

Intangible assets

Goodwill		\$150,000
Patents		220,000
Franchises		<u>110,000</u>
Total intangibles		<u>\$480,000</u>

BRIEF EXERCISE 5-6

Intangible assets

Goodwill		\$40,000
Franchises		47,000
Patents		33,000
Trademarks		<u>10,000</u>
Total intangible assets		<u>\$130,000</u>

BRIEF EXERCISE 5-7

Current liabilities

Accounts payable		\$72,000
Accrued salaries		4,000
Notes payable		12,500
Income taxes payable		<u>7,000</u>
Total current liabilities		<u>\$95,500</u>

BRIEF EXERCISE 5-8

Current liabilities

Accounts payable		\$240,000
Advances from customers		41,000
Wages payable		27,000
Interest payable		12,000
Income taxes payable		<u>29,000</u>
Total current liabilities		<u>\$349,000</u>

BRIEF EXERCISE 5-9

Long-term liabilities

Bonds payable	\$400,000	
Less discount on bonds payable	<u>24,000</u>	\$376,000
Obligations under capital leases		<u>375,000</u>
Total long-term liabilities		<u>\$751,000</u>

BRIEF EXERCISE 5-10

Stockholders' equity

Common stock	\$700,000
Additional paid-in capital	200,000
Retained earnings	120,000
Accumulated other comprehensive loss	<u>(150,000)</u>
Total stockholders' equity	<u>\$870,000</u>

BRIEF EXERCISE 5-11

Stockholders' equity

Preferred stock	\$172,000
Common stock	55,000
Additional paid-in capital	174,000
Retained earnings	<u>114,000</u>
Total stockholders' equity	<u>\$515,000</u>

BRIEF EXERCISE 5-12

Cash Flow Statement

Operating Activities

Net Income	\$40,000
Increase in Accounts Receivable	(10,000)
Increase in Accounts Payable	5,000
Depreciation Expense	<u>4,000</u>
Net Cash from operations	<u>39,000</u>

BRIEF EXERCISE 5-12 (Continued)

Investing Activities

Purchase of Equipment	(8,000)
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Financing Activities

Issue Notes Payable	20,000
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Dividends	<u>(5,000)</u>
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Net cash flow from financing activities	<u>15,000</u>
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Net Change in Cash	<u>\$46,000</u>
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Free Cash Flow = \$39,000 (Cash flow from operations) – \$8,000 (Purchase of equipment) – \$5,000 (Dividends) = \$26,000.

BRIEF EXERCISE 5-13

Cash flows from operating activities

Net income		\$151,000
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Adjustments to reconcile net income to net cash provided by operating activities

Depreciation expense	\$39,000	
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Increase in accounts payable	9,500	
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Increase in accounts receivable	<u>(13,000)</u>	<u>35,500</u>
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Net cash provided by operating activities		<u>\$186,500</u>
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BRIEF EXERCISE 5-14

Sale of land and building	\$181,000
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Purchase of land	(37,000)
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Purchase of equipment	<u>(53,000)</u>
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Net cash provided by investing activities	<u>\$ 91,000</u>
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BRIEF EXERCISE 5-15

Issuance of common stock	\$147,000
Purchase of treasury stock	(40,000)
Payment of cash dividend	(85,000)
Retirement of bonds	<u>(100,000)</u>
Net cash used by financing activities	<u>\$ (78,000)</u>

BRIEF EXERCISE 5-16

Free Cash Flow Analysis

Net cash provided by operating activities	\$400,000
Less: Purchase of equipment	(53,000)
Purchase of land*	(37,000)
Dividends	<u>(85,000)</u>
Free cash flow	<u>\$225,000</u>

*If the land were purchased as an investment, it would be excluded in the computation of free cash flow.

SOLUTIONS TO EXERCISES

EXERCISE 5-1 (15-20 minutes)

- (a) If the investment in preferred stock is readily marketable and held with the intention of converting the stock to cash if the need should arise, then the account should appear as a current asset and be included with trading securities. If, on the other hand, the preferred stock is not readily marketable or is not held with the intention of selling, the account should be classified in the investment section.
- (b) If the company accounts for the treasury stock on the cost basis, the account should properly be shown as a reduction of total stockholders' equity.
- (c) Capital stock.
- (d) Current liability.
- (e) Property, plant, and equipment (as a deduction).
- (f) If the warehouse in process of construction is being constructed for another party, it is properly classified as an inventory account in the current asset section. This account will be shown net of any billings on the contract. On the other hand, if the warehouse is being constructed for the use of this particular company, it should be classified as a separate item in the property, plant, and equipment section.
- (g) Current asset.
- (h) Current liability.
- (i) Retained earnings.

EXERCISE 5-1 (Continued)

(j) Current asset.

(k) Current liability.

(l) Current liability.

(m) Current asset.

(n) Current liability.

EXERCISE 5-2 (15-20 minutes)

- | | |
|---------------|---------------|
| 1. h. | 11. b. |
| 2. d. | 12. f. |
| 3. f. | 13. a. |
| 4. f. | 14. h. |
| 5. c. | 15. c. |
| 6. a. | 16. b. |
| 7. f. | 17. a. |
| 8. g. | 18. a. |
| 9. a. | 19. g. |
| 10. a. | 20. f. |

EXERCISE 5-3 (15-20 minutes)

- | | | | |
|----|----------|-----|--------------------------|
| 1. | a. | 10. | f. |
| 2. | b. | 11. | a. |
| 3. | f. or g. | 12. | f. |
| 4. | a. | 13. | a. or e. (preferably a.) |
| 5. | f. or g. | 14. | c. and n. |
| 6. | h. | 15. | f. |
| 7. | i. | 16. | x. |
| 8. | d. | 17. | f. |
| 9. | a. | 18. | c. |

EXERCISE 5-4 (30-35 minutes)**Denis Savard Inc.
Balance Sheet
December 31, 20–**

<u>Assets</u>			
<u>Current assets</u>			
Cash	\$XXX		
Less cash restricted for plant expansion	<u>XXX</u>	\$XXX	
Accounts receivable	XXX		
Less allowance for doubtful accounts	<u>XXX</u>	XXX	
Notes receivable		XXX	
Receivables—officers		XXX	
Inventories			
Finished goods	XXX		
Work in process	XXX		
Raw materials	<u>XXX</u>	<u>XXX</u>	
Total current assets			\$XXX
 <u>Long-term investments</u>			
Preferred stock investments		XXX	
Land held for future plant site		XXX	
Cash restricted for plant expansion		<u>XXX</u>	
Total long-term investments			XXX
 <u>Property, plant, and equipment</u>			
Buildings		XXX	
Less accum. depreciation—buildings		<u>XXX</u>	XXX
 <u>Intangible assets</u>			
Copyrights			<u>XXX</u>
Total assets			<u>\$XXX</u>

EXERCISE 5-4 (Continued)**Liabilities and Stockholders' Equity****Current liabilities**

Accrued salaries payable	\$XXX	
Notes payable, short-term	XXX	
Unearned subscriptions	XXX	
Unearned rent	<u>XXX</u>	
Total current liabilities		\$XXX

Long-term debt

Bonds payable, due in four years	\$XXX	
Discount on bonds payable	<u>(XXX)</u>	<u>XXX</u>
Total liabilities		XXX

Stockholders' equity

Capital stock:		
Common stock	XXX	
Additional paid-in capital:		
Premium on common stock	<u>XXX</u>	
Total paid-in capital		XXX
Retained earnings	<u>XXX</u>	
Total paid-in capital and retained earnings		XXX
Less: Treasury stock, at cost	<u>(XXX)</u>	
Total stockholders' equity		<u>XXX</u>
Total liabilities and stockholders' equity		<u>\$XXX</u>

Note to instructor: As assumption made here is that cash included the cash restricted for plant expansion. If it did not, then a subtraction from cash would not be necessary or the cash balance would be "grossed up" and then the cash restricted for plant expansion deducted.

EXERCISE 5-5 (30-35 minutes)

**Uhura Company
Balance Sheet
December 31, 2004**

Assets

Current assets

Cash		\$ 230,000
Trading securities—at fair value		120,000
Accounts receivable	\$357,000	
Less allowance for doubtful accounts	<u>17,000</u>	340,000
Inventories, at lower of average cost or market		401,000
Prepaid expenses		<u>12,000</u>
Total current assets		1,103,000

Long-term investments

Land held for future use	175,000	
Cash surrender value of life insurance	<u>90,000</u>	265,000

Property, plant, and equipment

Building	\$730,000	
Less accum. depr.—building	<u>160,000</u>	570,000
Office equipment	265,000	
Less accum. depr.—office equipment	<u>105,000</u> <u>160,000</u>	730,000

Intangible assets

Goodwill		<u>80,000</u>
Total assets		<u>\$2,178,000</u>

EXERCISE 5-5 (Continued)

Liabilities and Stockholders' Equity

Current liabilities

Accounts payable	\$ 105,000	
Bank overdraft	30,000	
Notes payable (due next year)	125,000	
Rent payable	<u>49,000</u>	
Total current liabilities		\$309,000

Long-term liabilities

Bonds payable	\$500,000	
Add premium on bonds payable	<u>53,000</u>	\$553,000
Pension obligation	<u>82,000</u>	<u>635,000</u>
Total liabilities		944,000

Stockholders' equity

Common stock, \$1 par, authorized 400,000 shares, issued 290,000 shares	290,000	
Additional paid-in capital	<u>160,000</u>	450,000
Retained earnings	<u>784,000</u>	
Total stockholders' equity		<u>1,234,000</u>
Total liabilities and stock- holders' equity		<u>\$2,178,000</u>

EXERCISE 5-6 (30-35 minutes)

**Geronimo Company
Balance Sheet
As of July 31, 2004**

<u>Assets</u>	
<u>Current assets</u>	
Cash	\$ 60,000*
Accounts receivable	\$ 46,700**
Less allowance for doubtful accounts	<u>3,500</u> 43,200
Inventories	<u>65,300***</u>
Total current assets	168,500
 <u>Long-term investments</u>	
Bond sinking fund	15,000
 <u>Property, plant, and equipment</u>	
Equipment	112,000
Less accumulated depreciation—equipment	<u>28,000</u> 84,000
 <u>Intangible assets</u>	
Patents	<u>21,000</u>
Total assets	<u>\$288,500</u>

EXERCISE 5-6 (Continued)

Liabilities and Stockholders' Equity

Current liabilities

Notes and accounts payable	\$ 52,000****	
Taxes payable	<u>6,000</u>	
Total current liabilities		58,000

Long-term liabilities

		<u>75,000</u>
Total liabilities		133,000

Stockholders' equity

		<u>155,500</u>
Total liabilities and stockholders' equity		<u>\$288,500</u>

* $(\$69,000 - \$15,000 + \$6,000)$

** $(\$52,000 - \$5,300)$

*** $(\$60,000 + \$5,300)$

**** $(\$44,000 + \$8,000)$

EXERCISE 5-7 (15-20 minutes)

Current assets

Cash	\$ 87,000*	
Less cash restricted for plant expansion	<u>(50,000)</u>	\$ 37,000
Trading securities at fair value (cost, \$31,000)		29,000
Accounts receivable (of which \$50,000 is pledged as collateral on a bank loan)	161,000	
Less allowance for doubtful accounts	<u>(12,000)</u>	149,000
Interest receivable [(\$40,000 X 12%) X 8/12]		3,200
Inventories at lower of cost (determined using LIFO) or market		
Finished goods	52,000	
Work-in-process	34,000	
Raw materials	<u>207,000</u>	<u>293,000</u>
Total current assets		<u>\$511,200</u>

*An acceptable alternative is to report cash at \$37,000 and simply report the cash restricted for plant expansion in the investments section.

EXERCISE 5-8 (10-15 minutes)

- 1. Dividends payable of \$2,375,000 will be reported as a current liability [(1,000,000 – 50,000) X \$2.50].**
- 2. No amounts are reported as a current or long-term liability. Stock dividends distributable are reported in the stockholders' equity section.**
- 3. Bonds payable of \$25,000,000 and interest payable of \$3,000,000 (\$100,000,000 X 12% X 3/12) will be reported as a current liability. Bonds payable of \$75,000,000 will be reported as a long-term liability.**
- 4. Customer advances of \$17,000,000 will be reported as a current liability (\$12,000,000 + \$30,000,000 – \$25,000,000).**

EXERCISE 5-9 (30-35 minutes)

**(a) Alessandro Scarlatti Company
Partial Balance Sheet
As of December 31, 2004**

Current assets

Cash		\$ 34,396*
Accounts receivable	\$ 91,300**	
Less allowance for doubtful accounts	<u>7,000</u>	84,300
Inventories		159,000***
Prepaid expenses		<u>9,000</u>
Total current assets		<u>\$286,696</u>

Current liabilities

Accounts payable		\$115,000 ^a
Notes payable		<u>55,000^b</u>
Total current liabilities		<u>\$170,000</u>

EXERCISE 5-9 (Continued)

(b) Adjustment to retained earnings balance:		
Add: January sales discounts		\$ 476
Deduct: January sales	\$30,000	
January purchase discounts		
(\$39,000 X 2%)	780	
December purchases	15,000	
Consignment inventory	<u>12,000</u>	<u>(57,780)</u>
Change (decrease) to retained earnings		<u>\$(57,304)</u>
* Cash balance		\$ 40,000
Add: Cash disbursement after discount		
[\$39,000 X 98%]		<u>38,220</u>
		78,220
Less: Cash sales in January (\$30,000 – \$21,500)		(8,500)
Cash collected on account		(23,324)
Bank loan proceeds (\$35,324 – \$23,324)		<u>(12,000)</u>
Adjusted cash		<u>\$ 34,396</u>
** Accounts receivable balance		\$ 89,000
Add: Accounts reduced from January collection		
(\$23,324 plus 2% discount of \$476)		<u>23,800</u>
		112,800
Deduct: Accounts receivable in January		<u>(21,500)</u>
Adjusted accounts receivable		<u>\$ 91,300</u>
*** Inventories		\$171,000
Less: Inventory received on consignment		<u>12,000</u>
Adjustment to inventory		<u>\$159,000</u>

EXERCISE 5-9 (Continued)

^a Accounts payable balance		\$61,000
Add: Cash disbursements	\$39,000	
Purchase invoice omitted		
(\$27,000 – \$12,000)	<u>15,000</u>	<u>54,000</u>
Adjusted accounts payable		<u>\$115,000</u>
^b Notes payable balance		\$ 67,000
Less: Proceeds of bank loan		<u>12,000</u>
Adjusted notes payable		<u>\$ 55,000</u>

EXERCISE 5-10 (15-20 minutes)

- (a) In order for a liability to be reported for threatened litigation, the amount must be probable and payment reasonably estimable. Since these conditions are not met an accrual is not required.
- (b) A current liability of \$150,000 should be recorded.
- (c) Accrued interest of \$4,000 should be reported at December 31, 2004.
(\$600,000 X 8% X 1/2)
- (d) Although bad debts expense of \$300,000 should be debited and the allowance or doubtful accounts credited for \$300,000, this does not result in a liability. The allowance for doubtful accounts is a valuation account (contra asset) and is deducted from accounts receivable on the balance sheet.
- (e) A current liability of \$80,000 should be reported at December 31, 2004. The liability is recorded on the date of declaration.
- (f) Customer advances of \$110,000 will be reported as a current liability (\$160,000 – \$50,000)

EXERCISE 5-11 (25-30 minutes)

**Kelly Corporation
Balance Sheet
December 31, 2004**

Assets

Current assets

Cash		\$ 6,850
Office supplies		1,200
Prepaid insurance		<u>1,000</u>
Total current assets		9,050
Equipment	\$48,000	
Less accumulated depreciation	<u>4,000</u>	44,000
Intangible—trademark		<u>950</u>
Total assets		<u>\$54,000</u>

Liabilities and Stockholders' Equity

Current liabilities

Accounts payable		\$10,000
Wages payable		500
Unearned service revenue		<u>2,000</u>
Total current liabilities		12,500
Long-term liabilities		
Bonds payable		<u>9,000</u>
Total liabilities		<u>21,500</u>

Stockholders' equity

Common stock		10,000
Retained earnings (\$25,000 – \$2,500)		<u>22,500</u>
Total stockholders' equity		<u>32,500</u>
Total liabilities and stockholders' equity		<u>\$54,000</u>

EXERCISE 5-12 (30-35 minutes)**John Nalezny Corporation
Balance Sheet
December 31, 2004**

<u>Assets</u>			
<u>Current assets</u>			
Cash		\$197,000	
Trading securities		153,000	
Accounts receivable	\$435,000		
Less allowance for doubtful accounts	<u>(25,000)</u>	410,000	
Inventories		<u>597,000</u>	
Total current assets			1,357,000
<u>Long-term investments</u>			
Investments in bonds		299,000	
Investments in stocks		<u>277,000</u>	
Total long-term investments			576,000
<u>Property, plant, and equipment</u>			
Land		260,000	
Building	1,040,000		
Less accum. depreciation	<u>(152,000)</u>	888,000	
Equipment	600,000		
Less accum. depreciation	<u>(60,000)</u>	<u>540,000</u>	
Total property, plant, and equipment			1,688,000
<u>Intangible assets</u>			
Franchise (net of \$80,000 amortization)		160,000	
Patent (net of \$30,000 amortization)		<u>195,000</u>	
Total intangible assets			<u>355,000</u>
Total assets			<u>\$3,976,000</u>

EXERCISE 5-12 (Continued)

Liabilities and Stockholders' Equity

Current liabilities

Accounts payable	\$ 455,000	
Short-term notes payable	90,000	
Dividends payable	136,000	
Accrued liabilities	<u>96,000</u>	
Total current liabilities		\$ 777,000

Long-term debt

Long-term notes payable	900,000	
Bonds payable	<u>1,000,000</u>	
Total long-term liabilities		<u>1,900,000</u>
Total liabilities		2,677,000

Stockholder's equity

Paid-in capital		
Common stock (\$5 par)	\$1,000,000	
Additional paid-in capital	<u>80,000</u>	1,080,000
Retained earnings**		<u>410,000</u>
Total paid-in capital and retained earnings		1,490,000
Less treasury stock		<u>(191,000)</u>
Total stockholders' equity		<u>1,299,000</u>
Total liabilities and stockholders' equity		<u>\$3,976,000</u>

EXERCISE 5-12 (Continued)

**Computation of Retained Earnings:

Sales	\$8,100,000
Investment revenue	63,000
Extraordinary gain	80,000
Cost of goods sold	(4,800,000)
Selling expenses	(2,000,000)
Administrative expenses	(900,000)
Interest expense	<u>(211,000)</u>
Net income	<u>\$ 332,000</u>
Beginning retained earnings	\$218,000
Prior period adjustment—depreciation error	<u>(140,000)</u>
Beginning retained earnings, restated	\$ 78,000
Net income	<u>332,000</u>
Ending retained earnings	<u>\$410,000</u>

EXERCISE 5-13 (15-20 minutes)

(a) 4.	(f) 1.	(k) 1.
(b) 3.	(g) 5.	(l) 2.
(c) 4.	(h) 4.	(m) 2.
(d) 3.	(i) 5.	
(e) 1.	(j) 4.	

EXERCISE 5-14 (25-35 minutes)

**Constantine Cavamanlis Inc.
Statement of Cash Flows
For the Year Ended December 31, 2004**

Cash flows from operating activities		
Net income		\$44,000
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation expense	\$ 6,000	
Increase in accounts receivable	(3,000)	
Increase in accounts payable	<u>5,000</u>	<u>8,000</u>
Net cash provided by operating activities		52,000
Cash flows from investing activities		
Purchase of equipment		(17,000)
Cash flows from financing activities		
Issuance of common stock	20,000	
Payment of cash dividends	<u>(23,000)</u>	
Net cash used by financing activities		<u>(3,000)</u>
Net increase in cash		32,000
Cash at beginning of year		<u>13,000</u>
Cash at end of year		<u>\$45,000</u>

EXERCISE 5-15 (25-35 minutes)

(a) **Zubin Metha Corporation**
Statement of Cash Flows
For the Year Ended December 31, 2004

Cash flows from operating activities		
Net income		\$160,000
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation expense	\$17,000	
Loss on sale of investments	10,000	
Decrease in accounts receivable	5,000	
Decrease in current liabilities	(17,000)	<u>15,000</u>
Net cash provided by operating activities		175,000
Cash flows from investing activities		
Sale of investments [(\$74,000 – \$52,000) – \$10,000]	12,000	
Purchase of equipment	(58,000)	
Net cash used by investing activities		(46,000)
Cash flows from financing activities		
Payment of cash dividends		<u>(30,000)</u>
Net increase in cash		99,000
Cash at beginning of year		<u>78,000</u>
Cash at end of year		<u>\$177,000</u>

(b) **Free Cash Flow Analysis**

Net cash provided by operating activities		\$175,000
Less: Purchase of equipment		(58,000)
Dividends		<u>(30,000)</u>
Free cash flow		<u>\$ 87,000</u>

EXERCISE 5-16

(a) **Shabbona Corporation**
Statement of Cash Flows
For the Year Ended December 31, 2004

Cash flows from operating activities		
Net income		\$125,000
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation expense	\$27,000	
Increase in accounts receivable	(16,000)	
Decrease in inventory	9,000	
Decrease in accounts payable	<u>(13,000)</u>	<u>7,000</u>
Net cash provided by operating activities		132,000
Cash flows from investing activities		
Sale of land	39,000	
Purchase of equipment	<u>(60,000)</u>	
Net cash used by investing activities		(21,000)
Cash flows from financing activities		
Payment of cash dividends		<u>(60,000)</u>
Net increase in cash		51,000
Cash at beginning of year		<u>22,000</u>
Cash at end of year		<u>\$ 73,000</u>

The issuance of common stock to retire \$50,000 of bonds payable is a significant noncash financing transaction which would be disclosed in notes accompanying the financial statements.

EXERCISE 5-16 (Continued)

(b) Current cash debt coverage ratio =

$$\begin{aligned} &= \frac{\text{Net cash provided by operating activities}}{\text{Average current liabilities}} \\ &= \frac{\$132,000}{(\$34,000 + \$47,000) / 2} = \\ &= 3.26 \text{ to } 1 \end{aligned}$$

Cash debt coverage ratio =

$$\begin{aligned} &\frac{\text{Net cash provided by operating activities}}{\text{Average total liabilities}} = \\ &\$132,000 \div \frac{\$184,000 + \$247,000}{2} = \\ &.61 \text{ to } 1 \end{aligned}$$

Free Cash Flow Analysis

Net cash provided by operating activities	\$132,000
Less: Purchase of equipment	(60,000)
Dividends	<u>(60,000)</u>
Free cash flow	<u>\$ 12,000</u>

Shabbona has excellent liquidity. Its financial flexibility is good. It might be noted that it substantially reduced its long-term debt in 2004 which will help its financial flexibility.

EXERCISE 5-17

(a) **Grant Wood Corporation**
Statement of Cash Flows
For the Year Ended December 31, 2004

Cash flows from operating activities		
Net income		\$55,000
Adjustments to reconcile net income to net cash provided by operating activities:		
Loss on sale of equipment	\$ 2,000	
Depreciation expense	13,000	
Patent amortization	2,500	
Increase in current liabilities	13,000	
Increase in current assets (other than cash)	(29,000)	<u>1,500</u>
Net cash provided by operating activities		56,500
Cash flows from investing activities		
Sale of equipment	10,000	
Addition to building	(27,000)	
Investment in stock	(16,000)	
Net cash used by investing activities		(33,000)
Cash flows from financing activities		
Issuance of bonds	50,000	
Payment of dividends	(30,000)	
Purchase of treasury stock	(11,000)	
Net cash provided by financing activities		<u>9,000</u>
Net increase in cash		<u>\$32,500^a</u>

^aAn additional proof to arrive at the increase in cash is provided as follows:

Total current assets—end of period	\$296,500 [from part (b)]
Total current assets—beginning of period	<u>235,000</u>
Increase in current assets during the period	61,500
Increase in current assets other than cash	<u>29,000</u>
Increase in cash during year	<u>\$ 32,500</u>

EXERCISE 5-17 (Continued)

**(b) Grant Wood Corporation
Balance Sheet
December 31, 2004**

Assets		
Current assets		\$296,500^b
Long-term investments		16,000
Property, plant, and equipment		
Land	\$ 30,000	
Building (\$120,000 + \$27,000)	\$147,000	
Less accum. depreciation		
(\$30,000 + \$4,000)	<u>(34,000)</u>	113,000
Equipment (\$90,000 – \$20,000)	70,000	
Less accum. depreciation		
(\$11,000 – \$8,000 + \$9,000)	<u>(12,000)</u>	<u>58,000</u>
Total		201,000
Intangible assets—patents (\$40,000 – \$2,500)		<u>37,500</u>
Total assets		<u>\$551,000</u>
Liabilities and Stockholders' Equity		
Current liabilities (\$150,000 + \$13,000)		\$163,000
Long-term liabilities		
Bonds payable (\$100,000 + \$50,000)		<u>150,000</u>
Total liabilities		313,000
Stockholders' equity		
Common stock	\$180,000	
Retained earnings (\$44,000 + \$55,000 – \$30,000)	<u>69,000</u>	
Total	249,000	
Less cost of treasury stock	<u>(11,000)</u>	
Total stockholders' equity		<u>238,000</u>
Total liabilities and stockholders' equity		<u>\$551,000</u>

^b The amount determined for current assets is computed last and is a “plug” figure. That is, total liabilities and stockholders’ equity is computed because information is available to determine this amount. Because the total assets amount is the same as total liabilities and stockholders’ equity amount, the amount of total assets is determined. Information is available to compute all the asset amounts except current assets and therefore current assets can be determined by deducting the total of all the other asset balances from the total asset balance (i.e., \$551,000 – \$37,500 – \$201,000 – \$16,000).

EXERCISE 5-18

(a) **Madrasah Corporation**
Statement of Cash Flows
For the Year Ended December 31, 2004

Cash from Operations	
Net income	\$44,000
Depreciation	6,000
Increase in Acct. Payable	5,000
Increase in Acct. Receivable	<u>(18,000)</u>
	37,000
Cash flows from Investing activities	
Purchase of Equipment	(17,000)
Cash flows from financing activities	
Issue Stock	20,000
Pay Dividends	<u>(33,000)</u>
	(13,000)
Change in Cash	\$ 7,000
Cash at beginning of year	<u>13,000</u>
Cash at end of year	<u><u>\$20,000</u></u>

(b) Current Ratio	<u>2004</u>	<u>2003</u>
	6.3	6.73
	<u>\$126,000</u>	<u>\$101,000</u>
	\$ 20,000	\$ 15,000

Free Cash Flow Analysis

Cash from operations	\$ 37,000
Purchase Equipment	(17,000)
Pay Dividends	<u>(33,000)</u>
	<u><u>\$ (13,000)</u></u>

(c) Although, Madrasah's current ratio has declined from 2003 to 2004, it is still in excess of 6. It appears the company has good liquidity and financial flexibility.

TIME AND PURPOSE OF PROBLEMS

Problem 5-1 (Time 30-35 minutes)

Purpose—to provide the student with the opportunity to prepare a balance sheet, given a set of accounts. No monetary amounts are to be reported.

Problem 5-2 (Time 35-40 minutes)

Purpose—to provide the student with the opportunity to prepare a complete balance sheet, involving dollar amounts. A unique feature of this problem is that the student must solve for the retained earnings balance.

Problem 5-3 (Time 40-45 minutes)

Purpose—to provide an opportunity for the student to prepare a balance sheet in good form. Emphasis is given in this problem to additional important information that should be disclosed. For example, an inventory valuation method, bank loans secured by long-term investments, and information related to the capital stock accounts must be disclosed.

Problem 5-4 (Time 40-45 minutes)

Purpose—to provide the student with the opportunity to analyze a balance sheet and correct it where appropriate. The balance sheet as reported is incomplete, uses poor terminology, and is in error. A challenging problem.

Problem 5-5 (Time 40-45 minutes)

Purpose—to provide the student with the opportunity to prepare a balance sheet in good form. Additional information is provided on each asset and liability category for purposes of preparing the balance sheet. A challenging problem.

Problem 5-6 (Time 35-45 minutes)

Purpose—to provide the student with an opportunity to prepare a complete statement of cash flows. A condensed balance sheet is also required. The student is also required to explain the usefulness of the statement of cash flows. Because the textbook does not explain in Chapter 5 all of the steps involved in preparing the statement of cash flows, assignment of this problem is dependent upon additional instruction by the teacher or knowledge gained in elementary financial accounting.

Problem 5-7 (Time 40-50 minutes)

Purpose—to provide the student with an opportunity to prepare a balance sheet in good form and a more complex cash flow statement.

SOLUTIONS TO PROBLEMS

PROBLEM 5-1

Company Name
Balance Sheet
December 31, 20XX

Assets

Current assets

Cash on hand (including petty cash)
Cash in bank
Trading securities
Accounts receivable
 Less allowance for doubtful
 accounts
Interest receivable
Advances to employees
Inventory (ending)
Prepaid rent
 Total current assets

Long-term investments

Bond sinking fund
Cash surrender value of life insurance
Land for future plant site
 Total long-term investments

Property, plant, and equipment

Land
Buildings
 Less accum. depreciation—buildings
Equipment
 Less accum. depreciation—equipment
 Total property, plant, and equipment

Intangible assets

Patent (net of amortization)
Copyright (net of amortization)
 Total intangible assets
Total assets

PROBLEM 5-1 (Continued)

Liabilities and Stockholders' Equity

Current liabilities

Notes payable
FICA taxes payable
Accrued wages
Dividends payable
Unearned subscriptions revenue
Total current liabilities

Long-term debt

Bonds payable
Plus premium on bonds payable
Pension obligations
Total long-term liabilities
Total liabilities

Stockholders' equity

Capital stock
Preferred stock (description)
Common stock (description)
Additional paid-in capital
Premium on preferred stock
Retained earnings
Less treasury stock (description)
Total stockholders' equity
Total liabilities and
stockholders' equity

PROBLEM 5-2

**Letterman, Inc.
Balance Sheet
December 31, 2004**

Assets

Current assets

Cash	\$ 360,000	
Trading securities	121,000	
Notes receivable	545,700	
Refundable federal and state income taxes	97,630	
Inventories	239,800	
Prepaid expenses	<u>87,920</u>	
Total current assets		\$1,452,050

Property, plant, and equipment

Land		\$ 480,000	
Buildings	\$1,640,000		
Less accum. depreciation— building	<u>170,200</u>	1,469,800	
Equipment	1,470,000		
Less accum. depreciation— equipment	<u>292,000</u>	<u>1,178,000</u>	3,127,800

Intangible assets

Goodwill		<u>125,000</u>	
Total assets			<u>\$4,704,850</u>

PROBLEM 5-2 (Continued)

Liabilities and Stockholders' Equity

Current liabilities

Accounts payable		\$ 590,000	
Notes payable to banks		265,000	
Payroll taxes payable		177,591	
Taxes payable		98,362	
Rent payable		<u>45,000</u>	
Total current liabilities			\$1,175,953

Long-term liabilities

Unsecured notes payable (long-term)		\$1,600,000	
Bonds payable	\$300,000		
Less discount on bonds payable	<u>15,000</u>	285,000	
Long-term rental obligations		<u>480,000</u>	<u>2,365,000</u>
Total liabilities			3,540,953

Stockholders' equity

Capital stock			
Preferred stock, \$10 par; 20,000 shares authorized, 15,000 shares issued	150,000		
Common stock, \$1.00 par; 400,000 shares authorized, 200,000 issued	<u>200,000</u>	350,000	
Retained earnings (\$1,163,897 – \$350,000)		<u>813,897</u>	
Total stockholders' equity (\$4,704,850 – \$3,540,953)			<u>1,163,897</u>
Total liabilities and stockholders' equity			<u>\$4,704,850</u>

PROBLEM 5-3

**Side Kicks Company
Balance Sheet
December 31, 2004**

Assets

Current assets

Cash		\$ 41,000	
Accounts receivable	\$163,500		
Less allowance for doubtful accounts	<u>8,700</u>	154,800	
Inventory—at LIFO cost		308,500	
Prepaid insurance		<u>5,900</u>	
Total current assets			\$ 510,200

Long-term investments

Investments in stocks and bonds, of which investments costing \$120,000 have been pledged as security for notes payable—at fair value			339,000
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Property, plant, and equipment

Cost of uncompleted plant facilities			
Land	85,000		
Building in process of construction	<u>124,000</u>	209,000	
Equipment—at cost	400,000		
Less accum. depreciation	<u>140,000</u>	<u>260,000</u>	469,000

Intangible assets

Patents—at cost less amortization		<u>36,000</u>	
Total assets			<u>\$1,354,200</u>

PROBLEM 5-3 (Continued)

Liabilities and Stockholders' Equity

Current liabilities

Bank loans payable, secured by investments which cost \$120,000	\$ 94,000	
Accounts payable	148,000	
Accrued expenses	<u>49,200</u>	
Total current liabilities		\$ 291,200

Long-term liabilities

11% bonds payable, due January 1, 2013	400,000	
Less unamortized discount on bonds payable	<u>20,000</u>	<u>380,000</u>
Total liabilities		671,200

Stockholders' equity

Capital stock		
Authorized 600,000 shares of \$1 par value; issued and outstanding, 500,000 shares	\$500,000	
Additional paid-in capital	<u>45,000</u>	545,000
Retained earnings	<u>138,000</u>	<u>683,000</u>
Total liabilities and stockholders' equity		<u>\$1,354,200</u>

PROBLEM 5-4

**Russell Crowe Corporation
Balance Sheet
As of December 31, 2004**

Assets

Current assets

Cash	\$175,900	
Accounts receivable	170,000	
Inventories	<u>312,100</u>	
Total current assets		\$658,000

Long-term investments

Assets allocated to trustee for expansion:

Cash in bank	\$ 70,000	
U.S. Treasury notes, at fair value	<u>138,000</u>	208,000

Property, plant, and equipment

Land		750,000	
Buildings	\$1,070,000		
Less accum. depreciation— buildings	<u>410,000</u>	<u>660,000</u>	<u>1,410,000</u>
Total assets			<u>\$2,276,000</u>

Liabilities and Stockholders' Equity

Current liabilities

Notes payable—current installment	\$100,000	
Federal income taxes payable	<u>75,000</u>	
Total current liabilities		\$ 175,000

PROBLEM 5-4 (Continued)

Long-term liabilities

Notes payable	<u>500,000</u> (b)
Total liabilities	675,000

Stockholders' equity

Common stock, no par; 1,000,000 shares authorized and issued; 950,000 shares outstanding	\$1,150,000	
Retained earnings	<u>538,000</u> (c)	
	1,688,000	
Less treasury stock, at cost (50,000 shares of no par common)	<u>(87,000)</u>	
Total stockholders' equity		<u>1,601,000</u>
Total liabilities and stockholders' equity		<u>\$2,276,000</u>

^a\$1,640,000 – \$570,000 (to eliminate the excess of appraisal value over cost from the building account. Note that the appreciation capital account is also deleted.)

^b\$600,000 – \$100,000 (to reclassify the currently maturing portion of the note payable as a current liability.)

^c\$658,000 – \$120,000 (to remove the value of goodwill from retained earnings. Note 2 indicates that retained earnings was credited. Note that the goodwill account is also deleted.)

Note: As an alternate presentation, the cash restricted for plant expansion would be added to the general cash account and then subtracted as illustrated in the textbook. The amount reported in the investments section would not change.

PROBLEM 5-5

**Stephen King Corporation
Balance Sheet
December 31, 2004**

<u>Assets</u>			
<u>Current assets</u>			
Cash		\$ 114,000	
Trading securities—at fair value		80,000	
Accounts receivable	\$170,000		
Less allowance for doubtful accounts	10,000	160,000	
Inventories, at lower of cost (determined using FIFO) or market		180,000	
Total current assets			\$ 534,000
 <u>Long-term investments</u>			
Investments in common stock (available for sale)—at fair value	270,000		
Bond sinking fund	250,000		
Cash surrender value of life insurance	40,000		
Land held for future use	270,000	830,000	
 <u>Property, plant, and equipment</u>			
Land		500,000	
Buildings	\$1,040,000		
Less accum. depreciation—building	360,000	680,000	
Equipment	450,000		
Less accum. depreciation—equipment	180,000	270,000	1,450,000
 <u>Intangible assets</u>			
Franchise		165,000	
Goodwill		100,000	265,000
Total assets			\$3,079,000

PROBLEM 5-5 (Continued)

Liabilities and Stockholders' Equity

Current liabilities

Accounts payable				\$ 90,000
Notes payable				80,000
Bank overdraft				14,000
Taxes payable				40,000
Unearned revenue				<u>5,000</u>
Total current liabilities				\$ 229,000

Long-term liabilities

Notes payable				\$ 120,000
10% bonds payable, due 2010	\$1,000,000			
Less discount on bonds payable	<u>40,000</u>	<u>960,000</u>	<u>1,080,000</u>	
Total liabilities				1,309,000

Stockholders' equity

Capital stock

Preferred stock, no par value; 200,000 shares authorized, 70,000 issued				450,000
Common stock, \$1 par value; 400,000 shares authorized, 100,000 issued				100,000
Paid-in capital in excess of par on common stock (100,000 X [\$10.00 – \$1.00])	<u>900,000</u>	1,450,000		
Retained earnings		<u>320,000</u>		
Total stockholders' equity				<u>1,770,000</u>
Total liabilities and stockholders' equity				<u>\$3,079,000</u>

PROBLEM 5-6

(a) **Alistair Cooke, Inc.**
Statement of Cash Flows
For the Year Ended December 31, 2004

Cash flows from operating activities		
Net income		\$32,000
Adjustments to reconcile net income to net cash provided by operating activities		
Depreciation expense	12,000	
Gain on sale of investments	(3,400)	
Increase in Acct. Receivable (\$41,600 – \$21,200)	(20,400)	<u>(11,800)</u>
Net cash provided by operating activities		20,200
Cash flows from investing activities		
Sale of investments	17,000	
Purchase of land	<u>(18,000)</u>	
Net cash used in investing		(1,000)
Cash flows from financing activities		
Issuance of capital stock	24,000	
Retirement of notes payable	(16,000)	
Payment of cash dividends	<u>(8,200)</u>	
Net cash used by financing activities		<u>(200)</u>
Net increase in cash		19,000
Cash at beginning of year		<u>20,000</u>
Cash at end of year		<u>\$39,000</u>

The purchase of land through the issuance of \$30,000 of bonds is a significant noncash financing transaction that would be disclosed in notes accompanying the financial statements.

PROBLEM 5-6 (Continued)

(b)

**Alistair Cooke Inc.
Balance Sheet
December 31, 2004**

<u>Assets</u>		<u>Liabilities and Stockholders' Equity</u>	
Cash	\$39,000	Accounts payable	\$30,000
Accounts receivable	41,600	Long-term notes payable	25,000 (4)
Investments	18,400 (1)	Bonds payable	30,000 (5)
Plant assets (net)	69,000 (2)	Capital stock	124,000 (6)
Land	88,000 (3)	Retained earnings	47,000 (7)
	<u>\$256,000</u>		<u>\$256,000</u>

(1) $\$32,000 - (\$17,000 - \$3,400)$

(2) $\$81,000 - \$12,000$

(3) $\$40,000 + \$18,000 + \$30,000$

(4) $\$41,000 - \$16,000$

(5) $\$0 + \$30,000$

(6) $\$100,000 + \$24,000$

(7) $\$23,200 + \$32,000 - \$8,200$

(c) This type of information is useful for assessing the amount, timing, and uncertainty of future cash flows. For example, by showing the specific inflows and outflows from operating activities, investing activities, and financing activities, the user has a better understanding of the liquidity and financial flexibility of the enterprise. Similarly, these reports are useful in providing feedback about the flow of enterprise resources. This information should help users make more accurate predictions of future cash flow. In addition, some individuals have expressed concern about the quality of the earnings because the measurement of the income depends on a number of accruals and estimates which may be somewhat subjective. As a result, the higher the ratio of cash provided by operating activities to net income, the more comfort some users have in the reliability of the earnings. In this problem the ratio of cash provided by operating activities to net income is 63% ($\$20,200 \div \$32,000$).

PROBLEM 5-6 (Continued)

An analysis of Cooke's free cash flow indicates it is negative as shown below:

Free Cash Flow Analysis

Net cash provided by operating activities	\$20,200
Less: Purchase of land	(18,000)
Dividends	<u>(8,200)</u>
Free cash flow	<u>\$ (6,000)</u>

Its current cash debt coverage is .67 to 1 $\left(\frac{\$20,200}{\$30,000}\right)$ and its cash debt coverage ratio is .26 to 1 $\left(\$20,200 \div \frac{\$71,000 + \$85,000}{2}\right)$, which are reasonable. Overall, it appears that its liquidity position is average and overall financial flexibility should be improved.

PROBLEM 5-7

(a) **Roger Mudd Inc.**
Statement of Cash Flows
For the Year Ended December 31, 2004

Cash flows from operating activities		
Net income		\$35,000
Adjustments to reconcile net income to net cash provided by operating activities		
Depreciation expense	12,000	
Loss on sale of investments	3,000	
Increase in accounts payable (\$40,000 – \$30,000)	10,000	
Increase in accounts receivable (\$42,000 – \$21,200)	<u>(20,800)</u>	<u>4,200</u>
Net cash provided by operating activities		39,200
 Cash flows from investing activities		
Sale of investments	29,000	
Purchase of land	<u>(38,000)</u>	
Net cash used in investing		(9,000)
 Cash flows from financing activities		
Issuance of capital stock	26,000	
Payment of cash dividends	<u>(10,000)</u>	
Net cash used by financing activities		<u>16,000</u>
 Net increase in cash		 46,200
Cash at beginning of year		<u>20,000</u>
Cash at end of year		<u>\$66,200</u>

The purchase of land through the issuance of \$30,000 of bonds is a significant noncash financing transaction that would be disclosed in notes accompanying the financial statements.

PROBLEM 5-7 (Continued)

(b)

**Roger Mudd Inc.
Balance Sheet
December 31, 2004**

<u>Assets</u>		<u>Liabilities and Stockholders' Equity</u>	
Cash	\$66,200	Accounts payable	\$40,000
Accounts receivable	42,000	Bonds payable	71,000 (3)
Plant assets (net)	69,000 (1)	Capital stock	126,000 (4)
Land	<u>108,000 (2)</u>	Retained earnings	<u>48,200 (5)</u>
	<u>\$285,200</u>		<u>\$285,200</u>

(1) \$81,000 – \$12,000

(2) \$40,000 + \$38,000 + \$30,000

(3) \$41,000 + \$30,000

(4) \$100,000 + \$26,000

(5) \$23,200 + \$35,000 – \$10,000

(c) Current ratio and acid-test ratios are the same (no inventories):

2004: \$108,200 ÷ \$40,000 = 2.71

2003: \$73,200 ÷ \$30,000 = 2.44

Note: Trading securities are current assets.

(d) An analysis of Mudd's free cash flow indicates it is negative as shown below:

Free Cash Flow Analysis

Net cash provided by operating activities	\$39,200
Less: Purchase of land	(38,000)
Dividends	<u>(10,000)</u>
Free cash flow	<u>\$(8,800)</u>

PROBLEM 5-7 (Continued)

Its current cash debt coverage is 1.12 to 1 $\left(\frac{\$39,200}{\$35,000}\right)$. Overall, it appears that its liquidity position is average and overall financial flexibility should be improved.

(e) This type of information is useful for assessing the amount, timing, and uncertainty of future cash flows. For example, by showing the specific inflows and outflows from operating activities, investing activities, and financing activities, the user has a better understanding of the liquidity and financial flexibility of the enterprise. Similarly, these reports are useful in providing feedback about the flow of enterprise resources. This information should help users make more accurate predictions of future cash flow. In addition, some individuals have expressed concern about the quality of the earnings because the measurement of the income depends on a number of accruals and estimates which may be somewhat subjective. As a result, the higher the ratio of cash provided by operating activities to net income, the more comfort some users have in the reliability of the earnings.

TIME AND PURPOSE OF CASES

Case 5-1 (Time 25-30 minutes)

Purpose—to provide a varied number of financial transactions and then determine how each of these items should be reported in the financial statements. Accounting changes, additional assessments of income taxes, prior period adjustments, and changes in estimates are some of the financial transactions presented.

Case 5-2 (Time 30-35 minutes)

Purpose—to present the student with the opportunity to determine whether certain accounts should be classified as current asset and liability items. Borderline cases are included in which the student is required to state the reasons for the questionable classifications. The number of items to be classified is substantial and provides a good review to assess whether students understand what items should be classified in the current section of the balance sheet.

Case 5-3 (Time 20-25 minutes)

Purpose—to present the asset section of a partial balance sheet that must be analyzed to assess its deficiencies. Items such as improper classifications, terminology, and disclosure must be considered.

Case 5-4 (Time 25-30 minutes)

Purpose—to present a balance sheet that must be analyzed to assess its deficiencies. Items such as improper classification, terminology, and disclosure must be considered.

Case 5-5 (Time 20-25 minutes)

Purpose—to present the student an ethical issue related to the presentation of balance sheet information. The reporting involves “net presentation” of property, plant and equipment.

Case 5-6 (Time 40-50 minutes)

Purpose—to present a cash flow statement that must be analyzed to explain differences in cash flow and net income, and sources and uses of cash flow and ways to improve cash flow.

SOLUTIONS TO CASES

CASE 5-1

1. The new estimate would be used in computing depreciation expense for 2004. No adjustment of the balance in accumulated depreciation at the beginning of the year would be made. Instead, the remaining depreciable cost would be divided by the estimated remaining life. This is not a change in accounting principle, but rather a change in an estimate. Disclosure in the notes to the financial statements is appropriate, if material.
2. The additional assessment should be shown on the current period's income statement. If material it should be shown separately; if immaterial it could be included with the current year's tax expense. This transaction does not represent a prior period adjustment.
3. The effect of the error at December 31, 2003, should be shown as an adjustment of the beginning balance of retained earnings on the retained earnings statement. The current year's expense should be adjusted (if necessary) for the possible carryforward of the error into the 2004 expense computation.
4. Generally, an entry is made for a stock dividend on the date of declaration. The appropriate entry would be a charge to retained earnings for the fair market value of the stock to be distributed, with corresponding credits to Common Stock Distributable (a capital stock account) for par value and to Additional Paid-in Capital for the remainder. If the effect on earnings per share is material, footnote disclosure is required.

CASE 5-2

Current Assets

Interest accrued on U.S. government securities.
Notes receivable.
Petty cash fund.
U.S. government securities.
Cash in bank.
Inventory of operating parts and supplies.
Inventory of raw materials.
Accounts receivable.
 U.S. government contracts.
 Regular (less allowance for doubtful accounts).
 Installments—due next year.
Inventory of finished goods.
Inventory of work in process.

Current Liabilities

Preferred cash dividend, payable Nov. 1, 2004.
Federal income taxes payable.
Customers' advances (on contracts to be completed next year).
Premium on bonds redeemable in 2004.
Officers' 2004 bonus accrued.
Accrued payroll.
Notes payable.
Accrued interest on bonds.
Accounts payable
Accrued interest on notes payable.
8% 1st mortgage bonds to be redeemed in 2004.

CASE 5-2 (Continued)

Borderline cases that have been classified on the basis of assumptions are:

1. Notes receivable are assumed to be collectible within one year or the operating cycle.
2. U.S. government securities are assumed to be a temporary investment of current funds.
3. Accounts receivable--government contracts are assumed to be collectible within one year or the operating cycle. (Some authorities specify two years as an outside limit.)
4. Notes payable are assumed to be due within one year or the operating cycle.

(Note to instructor: Allowance for doubtful accounts receivable is not a current asset. It, however, would appear in the current asset section.)

CASE 5-3

- (1) Unclaimed payroll checks should be shown as a current liability if these are claims by employees.
- (2) Marketable securities should be reported as trading securities and cost need not be disclosed.
- (3) Bad Debt Reserve is an improper terminology; Allowance for Doubtful Accounts is considered more appropriate. The amount of estimated uncollectibles should be disclosed.
- (4) Next-in, First-out (NIFO) is not an acceptable inventory valuation method.
- (5) Land should not be depreciated.
- (6) Buildings and equipment and their related accumulated depreciation balances should be separately disclosed.
- (7) The valuation basis for stocks should be disclosed (fair value or equity) and the description should be Available for Sale Securities or Investment in X Company.
- (8) Treasury stock is not an asset and should be shown in the stockholders' equity section as a deduction.
- (9) Discount on bonds payable is not an asset and should be shown as a deduction from bonds payable.
- (10) Sinking fund should be reported in the long-term investments section.

CASE 5-4

Criticisms of the balance sheet of the Bellemy Brothers Corporation:

- (1) The basis for the valuation of marketable securities should be shown. Marketable securities are valued at fair value. In addition, they should be classified as either trading securities, available-for-sale securities, or held-to-maturity securities.
- (2) An allowance for doubtful accounts receivable is not indicated.

CASE 5-4 (Continued)

- (3) The basis for the valuation and the method of pricing for Merchandise Inventory are not indicated.
- (4) A stock investment in a subsidiary company is not ordinarily held to be sold within one year or the operating cycle. As such, this account should not be classified as a current asset, but rather should be included under the heading "Investments."
- (5) Treasury stock is not an asset. It should be presented as a deduction in the stockholders' equity section of the balance sheet. The class of stock, number of shares, and basis of valuation should be indicated.
- (6) Buildings and land should be segregated. The Reserve for Depreciation should be shown as a subtraction from the Buildings account only. Also, the term "reserve for" should be replaced by "accumulated."
- (7) Cash Surrender Value of Life Insurance would be more appropriately shown under the heading of "Investments."
- (8) Reserve for Income Taxes should appropriately be entitled Estimated Income Taxes Payable.
- (9) Customers' Accounts with Credit Balances is an immaterial amount. As such, this account need not be shown separately. The \$1 credit could readily be netted against Accounts Receivable without any material misstatement.
- (10) Unamortized Premium on Bonds Payable should be appropriately shown as an addition to the related Bonds Payable in the long-term liability section. The use of the term deferred credits is inappropriate.
- (11) Bonds Payable are inadequately disclosed. The interest rate, interest payment dates, and maturity date should be indicated.
- (12) Additional disclosure relative to the Capital Stock account is needed. This disclosure should include the number of shares authorized, issued, and outstanding.
- (13) Earned Surplus should appropriately be entitled Retained Earnings. Also, a separate heading should be shown for this account; it should not be shown under the heading "Capital Stock." A more appropriate heading would be "Stockholders' Equity."
- (14) Cash Dividends Declared should be disclosed on the retained earnings statement as a reduction of retained earnings. Dividends Payable, in the amount of \$8,000, should be shown on the balance sheet among the current liabilities, assuming payment has not occurred.

CASE 5-5

- (a) The ethical issues involved are integrity and honesty in financial reporting, full disclosure, and accountant's professionalism.
- (b) While presenting property, plant, and equipment net of depreciation may be acceptable under GAAP, it is inappropriate to attempt to hide information from financial statement users. Information must be useful, and the presentation Pafko is considering would not be. Users would not grasp the age of fixed assets and the company's need to concentrate its future cash outflows on replacement of these assets.

CASE 5-6

Date

James Spencer, III, CEO
James Spencer Corporation
125 Wall Street
Middleton, Kansas 67458

Dear Mr. Spencer:

I have good news and bad news about the financial statements for the year ended December 31, 2003. The good news is that net income of \$100,000 is close to what we predicted in the strategic plan last year, indicating strong performance this year. The bad news is that the cash balance is seriously low. Enclosed is the Statement of Cash Flows which best illustrates how both of these situations occurred simultaneously.

If you look at the operating activities, you can see that no cash was generated by operations due to the increase in accounts receivable and inventory and reduction in accounts payable. While these are positive activities, they reduced your cash balance by \$116,000.

The corporation made significant investments in equipment and land. These were paid from cash reserves. While it is good that no monies were borrowed against these assets, these purchases used 75% of the company's cash. In addition, the redemption of the bonds improved the equity of the corporation and reduced interest expense. However, it also used 25% of the corporation's cash. It is normal to use cash for investing and financing activities. But when cash is used, it must also be replenished.

Operations normally provide the cash for investing and financing activities. Since there is a finite amount of assets to sell and funds to borrow or raise from the sale of capital stock, operating activities are the only renewable source of cash. That is why it is important to keep the operating cash flows positive. Cash management requires careful and continuous planning.

There are several possible remedies for the current cash problem. First, prepare a detailed analysis of monthly cash requirements for the next year. Second, investigate the changes in accounts receivable and inventory and work to return them to more normal levels. Third, look for more favorable terms with suppliers to allow the accounts payable to increase without loss of discounts or other costs. Finally, since the land represents a long-term commitment without immediate plans for use, consider shopping for a low interest loan to finance the acquisition for a few years and return the cash balance to a more normal level.

If you have additional questions or need one of our staff to address this problem, please contact me at your convenience.

Sincerely yours,

Partner in Charge

FINANCIAL REPORTING PROBLEM

- (a) 3M could use the account form, report form or financial position form. 3M uses the report form.
- (b) The techniques of disclosing pertinent information include (1) parenthetical explanations, (2) notes, (3) cross-reference and contra items, and (4) supporting schedules. 3M uses parenthetical explanations (on the statement of cash flows) and notes (see notes to financial statements section) and supporting schedules.
- (c) Investments primarily include the cash surrender value of life insurance policies and real estate and venture capital investments. Unrealized gains and losses relating to investments classified as available-for-sale are recorded as a component of accumulated other comprehensive income in stockholders' equity. As of December 31, 2001, 3M had positive working capital (current assets exceed current liabilities) of \$1,787,000,000. At December 31, 2000, 3M's positive working capital was \$1,625,000,000.
- (d) The following table summarizes 3M's cash flows from operating, investing, and financing in the 1999-2001 time period (in millions).

	<u>2001</u>	<u>2000</u>	<u>1999</u>
Net cash provided by operating activities	\$ 3,078	\$ 2,326	\$ 3,081
Net cash used in investing activities	(1,050)	(1,373)	(1,114)
Net cash used in financing activities	(1,716)	(1,131)	(1,771)

Accounts payable and other current liabilities were reduced in 2001 by \$62 million. This reduction was accomplished by paying out cash, e.g., to pay off an accounts payable.

FINANCIAL REPORTING PROBLEM (Continued)

- (e) (1) Net Cash Provided by Operating Activities ÷ Average Current Liabilities = Current Cash Debt Ratio

$$\$3,078 \div \frac{(\$4,509 + \$4,754)}{2} = \underline{\underline{0.66:1}}$$

- (2) Net Cash Provided by Operating Activities ÷ Average Total Liabilities = Cash Debt Coverage Ratio

$$\$3,078 \div \frac{(\$8,520 + \$7,991)}{2} = \underline{\underline{0.37:1}}$$

- (3) Net Cash Provided by Operating Activities less capital expenditures and dividends

Net cash provided by operating activities		\$3,078
Less: Capital expenditures*	\$980	
Dividends	<u>948</u>	<u>1,928</u>
Free cash flow		<u>\$1,150</u>

Note that 3M also used cash (\$1,322 million) to repurchase common stock, which reduces its free cash flow below zero. 3M's financial position appears adequate. Over one-third of its total liabilities can be covered by the current year's cash flow and its free cash flow position indicates it is easily meeting its capital investment and financing demands from current cash flow.

FINANCIAL STATEMENT ANALYSIS CASE 1

- (a) The raw materials price increase is not a required disclosure. However, the company might well want to inform shareholders in the management discussion and analysis section, especially as a means for company management to point out an area of success. If the company had not been able to successfully meet the challenge, then the reporting in the discussion and analysis section would be for the purpose of explaining poorer than expected operating results.
- (b) The information in item (2) should be reported as follows: The \$4,000,000 outstanding should, of course, be included in the balance sheet as a part of liabilities (short- or long-term, depending on the terms of the loan). The fact that an additional \$11,000,000 or so is available for borrowing should be disclosed in the notes to the financial statements, as also the fact that the loan is based on the accounts receivable.

FINANCIAL STATEMENT ANALYSIS CASE 2

- (a) These accounts are shown in the order in which Sherwin-Williams actually presented the accounts. The order shown may be modified somewhat; however, cash should certainly be listed first and other current assets last within the current asset category; common stock should be listed first and retained earnings last in the shareholders' equity category. For the remaining items, the order may be different than that shown.

CURRENT ASSETS

Cash and cash equivalents
Short-term investments
Accounts receivable, less allowance
Finished goods inventories
Work in process and raw materials inventories
Other current assets

LONG-TERM ASSETS

Intangibles and other assets
Land
Buildings
Machinery and equipment

CURRENT LIABILITIES

Accounts payable
Employee compensation payable
Taxes payable
Other accruals
Accrued taxes

LONG-TERM LIABILITIES

Long-term debt
Postretirement benefits other than pensions
Other long-term liabilities

FINANCIAL STATEMENT ANALYSIS CASE 2 (Continued)

SHAREHOLDERS' EQUITY

Common stock

Other capital

Retained earnings

(b) There is some latitude for judgment in this question. The general answer is that the assets and liabilities specific to the automotive division will decrease and that cash will increase. Some students may be aware that retained earnings will increase or decrease, depending upon whether the assets were sold above or below historical cost.

- ◆ *Cash and cash equivalents*—increase from the sale of the assets
- ◆ *Accounts receivable, less allowance*—decrease from the sale of the Automotive Division's receivables
- ◆ *Finished goods inventories*—decrease
- ◆ *Work in process and raw materials inventories*—decrease
- ◆ *Land*—decrease
- ◆ *Building*—decrease
- ◆ *Machinery and equipment*—decrease
- ◆ *Long-term debt*—decrease
- ◆ *Retained earnings*—increase or decrease, depending on whether the assets were sold above or below cost

COMPARATIVE ANALYSIS CASE

- (a) The Coca-Cola Company uses the account form; PepsiCo, Inc. uses the report form.
- (b) The Coca-Cola Company had a negative working capital of \$1,258,000,000 (\$7,171,000,000 – \$8,429,000,000); PepsiCo, Inc. has working capital of \$855,000,000 (\$5,853,000,000 – \$4,998,000,000). The Coca-Cola Company indicates in its management discussion and analysis section that its global presence and strong capital position afford it easy access to key financial markets around the world, enabling it to raise funds with a low effective cost. This posture, coupled with the aggressive management of its short-term and long-term debt, results in a lower overall cost of borrowing. As a result, its debt management policies, in conjunction with its share repurchase program and investment activity, typically result in current liabilities exceeding current assets. PepsiCo has a similar strategy (see discussion in “Liquidity and Capital Resources.”)
- (c) The most significant difference relates to intangible assets. The Coca-Cola Company has Trademarks and Other Intangible Assets of \$2,579 million; PepsiCo, Inc. has Intangible Assets, net of amortization of \$4,841,000,000. PepsiCo, Inc. has substantial intangible assets due to the reacquiring of franchise rights and trademarks. In addition, a substantial amount of goodwill is recorded in these reacquisitions which represents the residual purchase price after allocation to all identifiable assets. In addition, PepsiCo carries higher levels of property, plant, and equipment (31.7% of assets), while Coca-Cola’s property, plant, and equipment is just 19.9% of assets. Coca-Cola has much higher investments in unconsolidated subsidiaries (24% > 13% of assets).

COMPARATIVE ANALYSIS CASE (Continued)

(d)

Total assets	<u>Annual</u>	<u>Five-Year</u>
The Coca-Cola Company	(7.6%)	32.8%
PepsiCo, Inc.	4.5%	(4.9%)

Total debt

The Coca-Cola Company	(9.4%)	32.1%
PepsiCo, Inc. (long term debt)	(11.9%)	(54.6%)

(e) The Coca-Cola Company has increased net cash provided by operating activities from 1999 to 2001 by \$227 million or 5.8%. PepsiCo, Inc. has increased net cash provided by operating activities by \$596 million or 16.5%. Both companies have favorable trends in the generation of internal funds from operations.

(f) The Coca-Cola Company

Current Cash Debt Ratio

$$\$4,110 \div \frac{\$8,429 + \$9,321}{2} = \underline{.46:1}$$

Cash Debt Coverage Ratio

$$\$4,110 \div \frac{\$11,051 + \$11,518}{2} = \underline{.36:1}$$

COMPARATIVE ANALYSIS CASE (Continued)

Free cash flow	
Net cash provided by operating activities	\$4,110,000,000
Less: Business reinvestment	<u>963,000,000</u>
Free cash flow	<u>\$3,147,000,000</u>

The Coca-Cola Company defines free cash flow as the cash remaining from operations after satisfying business reinvestment opportunities. We have defined it to also reduce dividends. In that case, the Coca-Cola Company's free cash flow would be reduced by an additional \$1,791,000,000, which would reduce its free cash flow to \$1,356,000,000. Note that Coca-Cola is also using cash to repurchase shares (\$277 million in 2001).

PepsiCo, Inc.

Current Cash Debt Ratio

$$\$4,201 \div \frac{\$4,998 + \$4,795}{2} = \underline{.86:1}$$

Cash Debt Coverage Ratio

$$\$4,201 \div \frac{\$13,021 + \$13,131}{2} = \underline{.32:1}$$

Free cash flow

Net cash provided by operating activities		\$4,201,000,000
Less: Investment activities	\$2,637,000,000	
Dividends	<u>994,000,000</u>	<u>3,631,000,000</u>
Free cash flow		<u>\$570,000,000</u>

PepsiCo also is using significant cash balances to repurchase shares (\$1.7 billion in 2001, \$1.4 billion in 2000).

Both companies have strong liquidity and financial flexibility.

COMPARATIVE ANALYSIS CASE (Continued)

- (g) The Coca-Cola Company uses the following ratios: Net debt to net capital; free cash flow to net debt; interest coverage ratio; and ratio of earnings to fixed charges.**

PepsiCo, Inc. does not use any ratios to explain its financial position related to debt financing. Thus, users must construct their own ratios for this purpose.

RESEARCH CASE 1

- (a) **Ford Motor Co. = 0000037996**
Wisconsin Electric Power Co. = 0000107815
Orion Pictures = 0000035590
- (b) **Ford separately presents the assets and liabilities of its automotive and financial services operations due to their heterogeneity. Wisconsin Electric Power presents its plant assets first due to their importance. Note that common equity is listed before liabilities for Wisconsin Electric Power, which is a common practice for utilities. Orion Pictures uses an unclassified balance sheet as the distinction between current and long-term assets is not clear for film producers.**

INTERNATIONAL REPORTING CASE

- (a) Some of the differences are:
1. Report form—Tomkins uses a modified report form with liabilities deducted from assets to arrive at “Total net assets”. This amount balances with “Total Capital and Reserves”.
 2. Subtotals—Tomkins reports a modified “working capital” subtotal within the statement by reporting “Net current assets”.
 3. Classifications—the classifications are not arranged according to decreasing liquidity. For example, “Fixed assets” are listed first, then “Current assets”. Cash is not listed as the first current asset.
 4. Terminology—“Stock” is used instead of inventory. The term “Debtors” is used instead of accounts receivable. Contributed capital is referred to as “Called up share capital” and “Share premium”, rather than Common Stock and Additional paid in capital.
 5. Units of currency—Tomkins reports in pounds sterling.
- (b) Although there are differences in terminology and some groupings and subtotals are different, similar to classified U.S. balance sheets, the British balance sheet groups assets and liabilities with similar characteristics together (Fixed assets, Current assets and liabilities). For the most part, the classifications are similar in that they are related to the liquidity of the balance sheet items. By netting liabilities against assets, a measure of solvency is provided.

Note to instructors: A final difference not mentioned above is the “Capital redemption reserve” account in the Capital and reserves section of Tomkins’ Balance sheet. This account in the U.K. corresponds to “Additional Paid-in Capital—Treasury Stock in the U.S. setting.

PROFESSIONAL SIMULATION

Financial Statement

Nicholson Industries
Statement of Cash Flows
For the Year Ended December 31, 2004

Cash from Operations	
Net income	\$125,000
Depreciation	27,000
Increase in Inventories	(31,000)
Decrease in Acct. Payables	(3,000)
Increase in Acct. Receivable	<u>(46,000)</u>
Net Cash from operations	72,000
Cash from Investing activities	
Purchase Equipment	(60,000)
Sale of Land	<u>39,000</u>
Net cash used in investing	(21,000)
Cash from Financing activities	
Pay Dividends	<u>(60,000)</u>
Net cash used in financing	(60,000)
Change in Cash	\$ (9,000)
Cash at beginning of year	<u>22,000</u>
Cash at end of year	<u>\$ 13,000</u>

(Footnote indicating that common stock was issued to retire bonds.)

PROFESSIONAL SIMULATION (Continued)

Analysis

(a)	Free Cash Flow Analysis		
	Cash from operations	\$ 72,000	
	Purchase Equipment	(60,000)	
	Pay Dividends	<u>(60,000)</u>	
		<u><u>\$(48,000)</u></u>	
	Average Current Liabilities	\$45,500	
	Current Cash debt coverage:		
	Operating Cash flow/average current liabilities	1.58	
(b)		<u>2004</u>	<u>2003</u>
	Current Ratio	7.84	5.89
	Acid-test Ratio	2.84	1.87

Explanation

Nicholson's current and acid-test ratios are both in excess of 1 and they both exhibit an increasing trend from 2003 to 2004. However, free cash flow is negative in 2004. Note also that accounts receivable and inventories have increased substantially from 2003 to 2004. While these increases impact liquidity ratios positively, if Nicholson has difficulty in collecting receivables or if sales slow and the inventory is not converted to cash, Nicholson's liquidity and financial flexibility will be negatively affected.

CHAPTER 6

Accounting and the Time Value of Money

ASSIGNMENT CLASSIFICATION TABLE

Topics	Questions	Brief		
		Exercises	Exercises	Problems
1. Present value concepts. Expected cash flows.	1, 2, 3, 4, 5, 9, 17		2, 3	6, 7
2. Use of tables.	13, 14	8	1	
3. Present and future value problems:				
a. Unknown future amount.	7, 19	1, 5, 13	2, 3, 4, 6, 8, 9, 13	
b. Unknown payments.	10, 11, 12	6, 12, 17	9, 18, 19	2, 8
c. Unknown number of periods.		4, 9	10, 17	2
d. Unknown interest rate.	15, 18	3, 11, 16	9, 11, 16	2, 9
e. Unknown present value.	8, 19	2, 7, 8, 10, 14	2, 3, 4, 5, 6, 7, 8, 10, 14, 19, 20, 21	1, 4, 6, 7, 9
4. Value of a series of irregular deposits; changing interest rates.				3, 5, 10
5. Valuation of leases, pensions, bonds; choice between projects.	6	15	12, 13, 14, 15, 16	3, 5, 7, 8, 10, 11, 12, 13, 14
6. Deferred annuity.	16			9
*7. Uses of a calculator.			22, 23, 24	15, 16, 17

ASSIGNMENT CHARACTERISTICS TABLE

Item	Description	Level of Difficulty	Time (minutes)
E6-1	Using interest tables.	Simple	5-10
E6-2	Expected Cash Flows.	Simple	5-10
E6-3	Expected Cash Flows.	Moderate	15-20
E6-4	Simple and compound interest.	Simple	5-10
E6-5	Computation of future values and present values.	Simple	10-15
E6-6	Annuity due problems.	Moderate	15-20
E6-7	Ordinary annuity problems.	Simple	10-15
E6-8	Future value and present value problems.	Moderate	15-20
E6-9	Computation of bond prices.	Moderate	12-17
E6-10	Computations for a retirement fund.	Simple	10-15
E6-11	Unknown interest rate.	Moderate	5-10
E6-12	Unknown periods and unknown interest rate.	Simple	10-15
E6-13	Evaluation of financing options.	Moderate	10-15
E6-14	Analysis of alternatives.	Simple	10-15
E6-15	Computation of present value of bonds.	Moderate	15-20
E6-16	Computation of pension liability.	Moderate	15-20
E6-17	Unknown Periods, deferred annuity.	Moderate	15-20
E6-18	Retirement of debt.	Simple	10-15
E6-19	Computation of amount of rentals.	Simple	10-15
E6-20	Least costly payoff—ordinary annuity.	Simple	10-15
E6-21	Least costly payoff—annuity due.	Simple	10-15
*E6-22	Determining the interest rate with a calculator.	Simple	3-5
*E6-23	Determining the interest rate with a calculator.	Simple	3-5
*E6-24	Determining the interest rate with a calculator.	Simple	3-5
P6-1	Computation of present value.	Moderate	15-20
P6-2	Computation of unknown interest factors.	Moderate	15-20
P6-3	Analysis of alternatives.	Moderate	20-30
P6-4	Evaluating payment alternatives.	Moderate	20-30
P6-5	Analysis of alternatives.	Moderate	20-25
P6-6	Expected cash flows and present value.	Moderate	20-25
P6-7	Expected cash flows and present value.	Moderate	20-25
P6-8	Purchase price of a business (deferred annuities).	Moderate	25-30
P6-9	Time value concepts applied to solve business problems.	Complex	30-35
P6-10	Analysis of alternatives.	Moderate	20-30
P6-11	Analysis of business problems.	Complex	30-35
P6-12	Analysis of lease versus purchase.	Complex	25-30

Assignment Characteristics Table (Continued)

P6-13	Retirement funding, deferred annuity.	Complex	25-30
P6-14	Pension funding—Ethics	Moderate	20-25
*P6-15	Solving unknowns with a calculator.	Moderate	10-15
*P6-16	Solving unknowns with a calculator.	Moderate	10-15
*P6-17	Solving unknowns with a calculator.	Moderate	10-15

ANSWERS TO QUESTIONS

1. Money has value because with it one can acquire assets and services and discharge obligations. The holding, borrowing or lending of money can result in costs or earnings. And the longer the time period involved, the greater the costs or the earnings. The cost or earning of money as a function of time is the time value of money.

Accountants must have a working knowledge of compound interest, annuities, and present value concepts because of their application to numerous types of business events and transactions which require proper valuation and presentation. These concepts are applied in the following areas: (1) sinking funds, (2) installment contracts, (3) pensions, (4) long-term assets, (5) leases, (6) notes receivable and payable, (7) business combinations, and (8) amortization of premiums and discounts.

2. Some situations in which present value measures are used in accounting include:
 - (a) Notes receivable and payable—these involve single sums (the face amounts) and may involve annuities, if there are periodic interest payments.
 - (b) Leases—involve measurement of assets and obligations, which are based on the present value of annuities (lease payments) and single sums (if there are residual values to be paid at the conclusion of the lease).
 - (c) Pensions and other deferred compensation arrangements—involve discounted future annuity payments that are estimated to be paid to employees upon retirement.
 - (d) Bond Pricing—the price of bond payable is comprised of the present value of the principal or face value of the bond plus the present value of the annuity of interest payments.
 - (e) Long-term assets—evaluating various long-term investments or assessing whether an asset is impaired requires determining the present value of the estimated cash flows (may be single sums and/or an annuity).
3. Interest is the payment for the use of money. It may represent a cost or earnings depending upon whether the money is being borrowed or loaned. The earning or incurring of interest is a function of the time, the amount of money, and the risk involved (reflected in the interest rate).

Simple interest is computed on the amount of the principal only, while compound interest is computed on the amount of the principal plus any accumulated interest. Compound interest involves interest on interest while simple interest does not.

4. The interest rate generally has three components:
 - (1) Pure rate of interest—This would be the amount a lender would charge if there were no possibilities of default and no expectation of inflation.
 - (2) Credit risk rate of interest—The government has little or no credit risk (i.e., risk of nonpayment) when it issues bonds. A business enterprise, however, depending upon its financial stability, profitability, etc. can have a low or a high credit risk.
 - (3) Expected inflation rate of interest—Lenders recognize that in an inflationary economy, they are being paid back with less valuable dollars. As a result, they increase their interest rate to compensate for this loss in purchasing power. When inflationary expectations are high, interest rates are high.

Accountants must have knowledge about these components because these components are essential in identifying an appropriate interest rate for a given company or investor at any given moment.

5.
 - (a) Present value of an ordinary annuity at 8% for 10 periods (Table 6-4).
 - (b) Future value of 1 at 8% for 10 periods (Table 6-1).
 - (c) Present value of 1 at 8% for 10 periods (Table 6-2).
 - (d) Future value of an ordinary annuity at 8% for 10 periods (Table 6-3).

Questions Chapter 6 (Continued)

6. He should choose quarterly compounding, because the balance in the account on which interest will be earned will be increased more frequently, thereby resulting in more interest earned on the investment. As shown in the following calculation:

Semi-annual compounding, assuming the amount is invested for 2 years:

$$\begin{aligned} n &= 4 \\ \$1,000 \times 1.16986 &= \$1,169.86 \\ i &= 4 \end{aligned}$$

Quarterly compounding, assuming the amount is invested for 2 years:

$$\begin{aligned} n &= 8 \\ \$1,000 \times 1.17166 &= \$1,171.66 \\ i &= 2 \end{aligned}$$

Thus, with quarterly compounding, Bill could earn \$1.80 more.

7. $\$24,208.02 = \$18,000 \times 1.34489$ (future value of 1 at $2\frac{1}{2}\%$ for 12 periods).
8. $\$27,919.50 = \$50,000 \times .55839$ (present value of 1 at 6% for 10 periods).
9. An annuity involves (1) periodic payments or receipts, called rents, (2) of the same amount, (3) spread over equal intervals, (4) with interest compounded once each interval.

Rents occur at the end of the intervals for ordinary annuities while the rents occur at the beginning of the intervals for annuities due.

10. Amount paid each year = $\frac{\$30,000}{3.03735}$ (present value of an ordinary annuity at 12% for 4 years).

Amount paid each year = \$9,877.03.

11. Amount deposited each year = $\frac{\$160,000}{4.64100}$ (future value of an ordinary annuity at 10% for 4 years).

Amount deposited each year = \$34,475.33.

12. Amount deposited each year = $\frac{\$160,000}{5.10510}$ [future value of an annuity due at 10% for 4 years (4.64100 X 1.10)].

Amount deposited each year = \$31,341.21.

13. The process for computing the future value of an annuity due using the future value of an ordinary annuity interest table is to multiply the corresponding future value of the ordinary annuity by one plus the interest rate. For example, the factor for the future value of an annuity due for 4 years at 12% is equal to the factor for the future value of an ordinary annuity times 1.12.
14. The basis for converting the present value of an ordinary annuity table to the present value of an annuity due table involves multiplying the present value of an ordinary annuity factor by one plus the interest rate.

15. Present value = present value of an ordinary annuity of \$25,000 for 20 periods at ? percent.

\$210,000 = present value of an ordinary annuity of \$25,000 for 20 periods at ? percent.

Present value of an ordinary annuity for 20 periods at ? percent = $\frac{\$210,000}{\$25,000} = 8.4$.

The factor 8.4 is closest to 8.51356 in the 10% column (Table 6-4).

16. 4.96764 Present value of ordinary annuity at 12% for eight periods.

2.40183 Present value of ordinary annuity at 12% for three periods.

2.56581 Present value of ordinary annuity at 12% for eight periods, deferred three periods.

The present value of the five rents is computed as follows:

$$2.56581 \times \$10,000 = \underline{\$25,658.10}.$$

17. (a) Present value of an annuity due.

(b) Present value of 1.

(c) Future value of an annuity due.

(d) Future value of 1.

18. \$27,000 = PV of an ordinary annuity of \$6,900 for five periods at ? percent.

$$\frac{\$27,000}{\$6,900} = \text{PV of an ordinary annuity for five periods at ? percent.}$$

3.91 = PV of an ordinary annuity for five periods at ?.

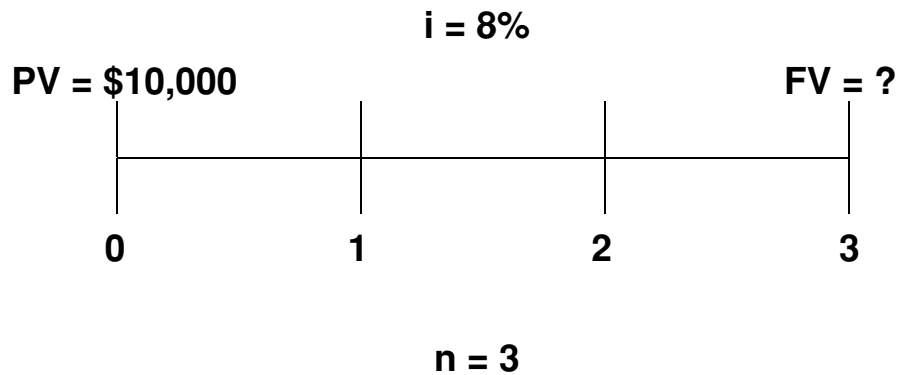
3.91 = approximately 9%.

19. The IRS argues that the future reserves should be discounted to present value. The result would be smaller reserves and therefore less of a charge to income. As a result, income would be higher and income taxes would therefore be higher as well.

SOLUTIONS TO BRIEF EXERCISES

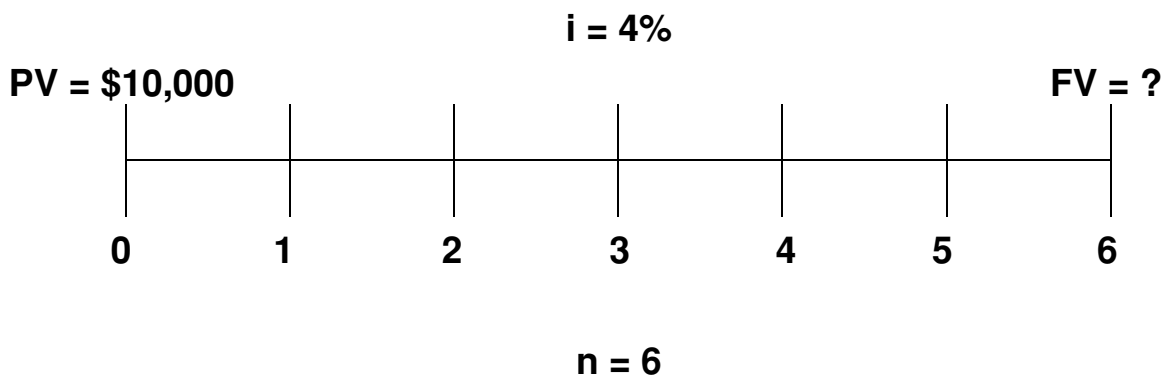
BRIEF EXERCISE 6-1

8% annual interest



$$\begin{aligned} \text{FV} &= \$10,000 (\text{FVF}_{3, 8\%}) \\ \text{FV} &= \$10,000 (1.25971) \\ \text{FV} &= \$12,597.10 \end{aligned}$$

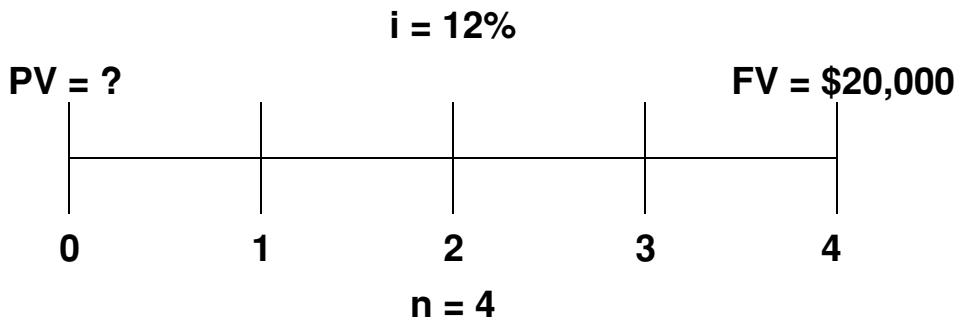
8% annual interest, compounded semiannually



$$\begin{aligned} \text{FV} &= \$10,000 (\text{FVF}_{6, 4\%}) \\ \text{FV} &= \$10,000 (1.26532) \\ \text{FV} &= \$12,653.20 \end{aligned}$$

BRIEF EXERCISE 6-2

12% annual interest

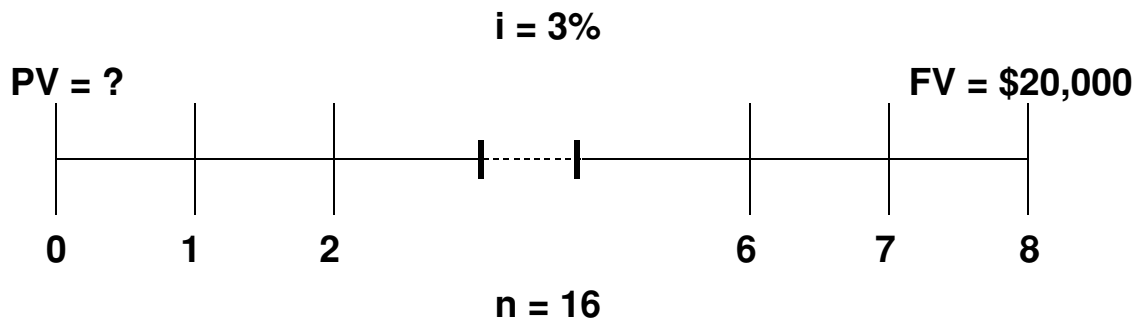


$$PV = \$20,000 (PVF_{4, 12\%})$$

$$PV = \$20,000 (.63552)$$

$$PV = \$12,710.40$$

12% annual interest, compounded quarterly



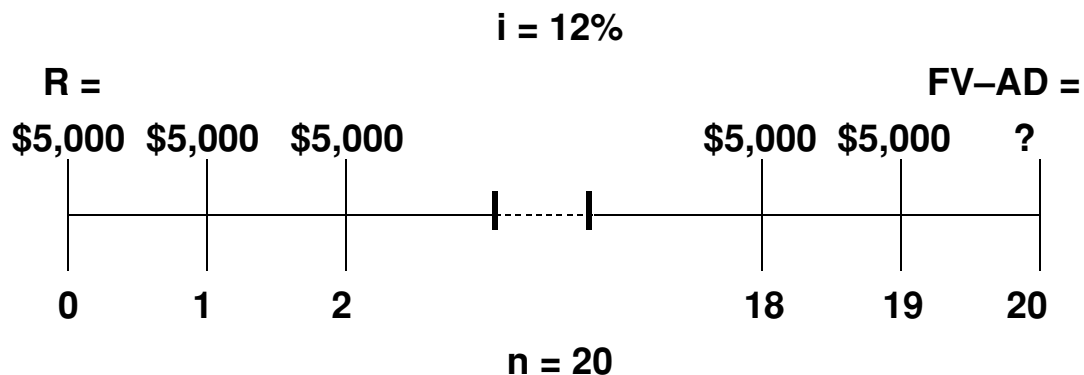
$$PV = \$20,000 (PVF_{16, 3\%})$$

$$PV = \$20,000 (.62317)$$

$$PV = \$12,463.40$$

BRIEF EXERCISE 6-5

First payment today

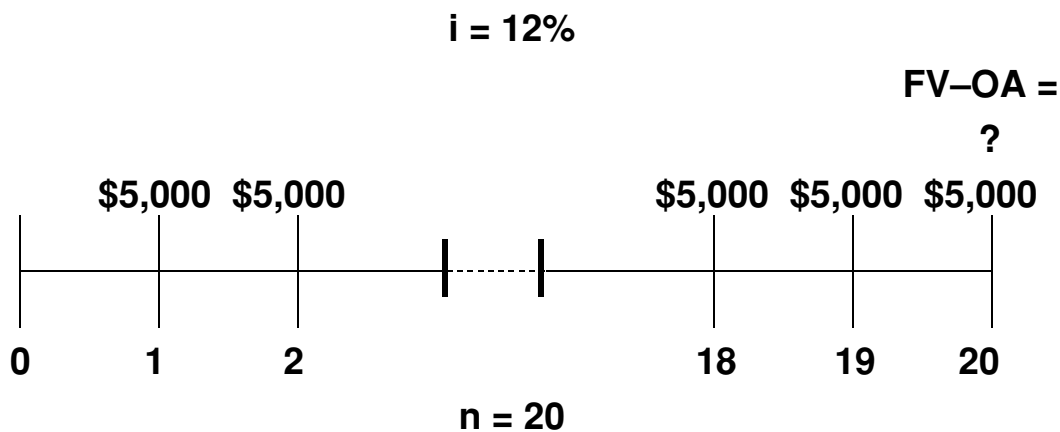


$$FV-AD = \$5,000 (FVF-OA_{20, 12\%}) 1.12$$

$$FV-AD = \$5,000 (72.05244) 1.12$$

$$FV-AD = \$403,494$$

First payment at year-end

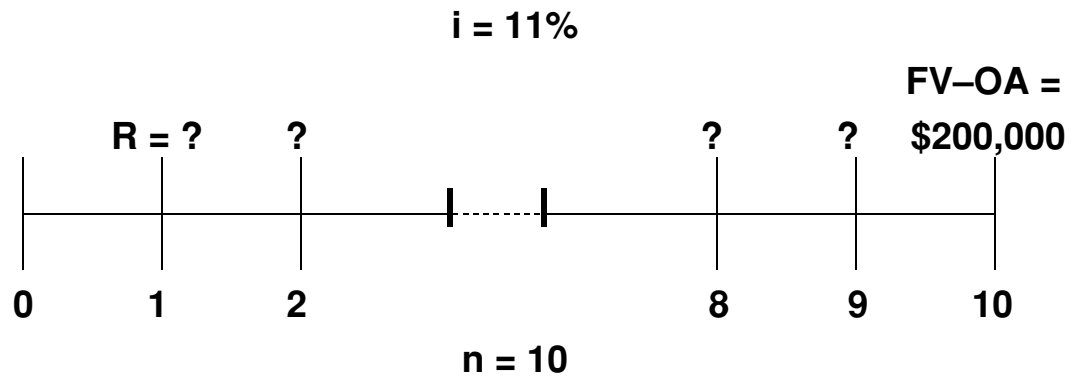


$$FV-OA = \$5,000 (FVF-OA_{20, 12\%})$$

$$FV-OA = \$5,000 (72.05244)$$

$$FV-OA = \$360,262$$

BRIEF EXERCISE 6-6



$$\$200,000 = R (FVF-OA_{10, 11\%})$$

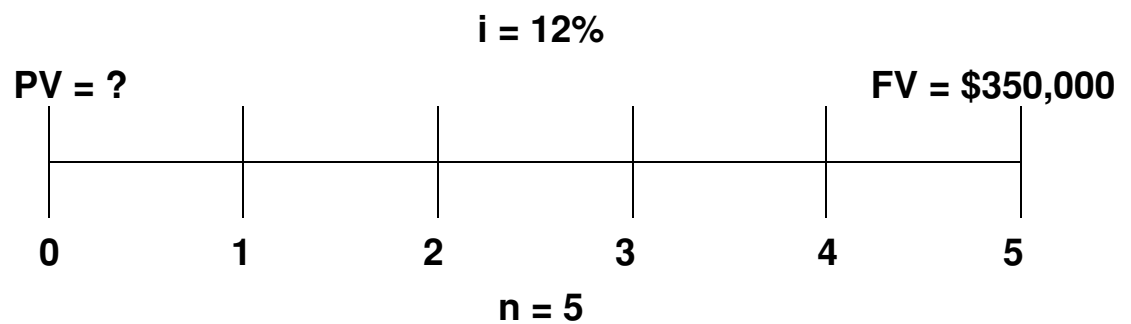
$$\$200,000 = R (16.72201)$$

$$\frac{\$200,000}{16.72201} = R$$

$$R = \$11,960$$

BRIEF EXERCISE 6-7

12% annual interest



$$PV = \$350,000 (PVF_{5, 12\%})$$

$$PV = \$350,000 (.56743)$$

$$PV = \$198,600.50$$

BRIEF EXERCISE 6-8

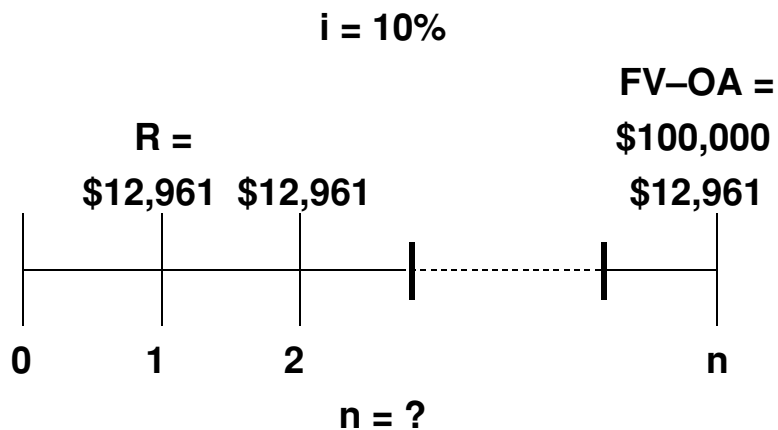
With quarterly compounding, there will be 20 quarterly compounding periods, at 1/4 the interest rate:

$$PV = \$350,000 (PVF_{20, 3\%})$$

$$PV = \$350,000 (.55368)$$

$$PV = \$193,788$$

BRIEF EXERCISE 6-9



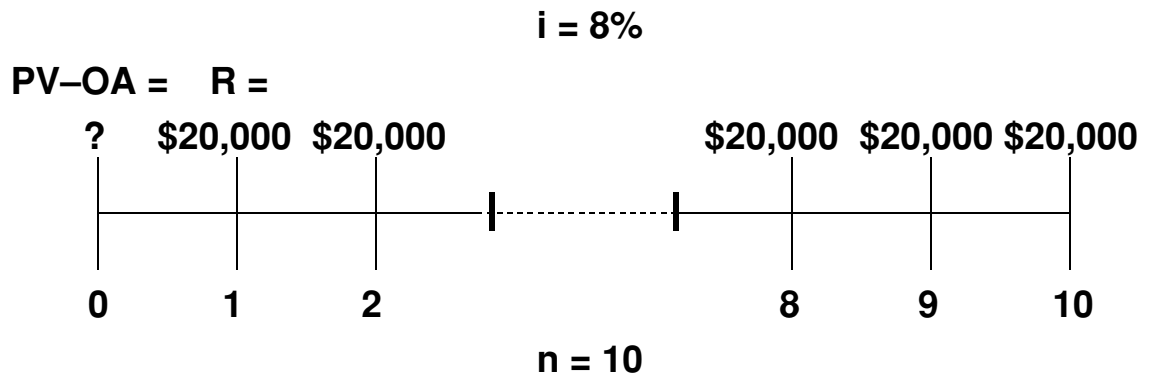
$$\$100,000 = \$12,961 (FVF-OA_{n, 10\%})$$

$$FVF-Oa_{n, 10\%} = \frac{\$100,000}{12,961} = 7.71545$$

Therefore, $n = 6$ years

BRIEF EXERCISE 6-10

First withdrawal at year-end

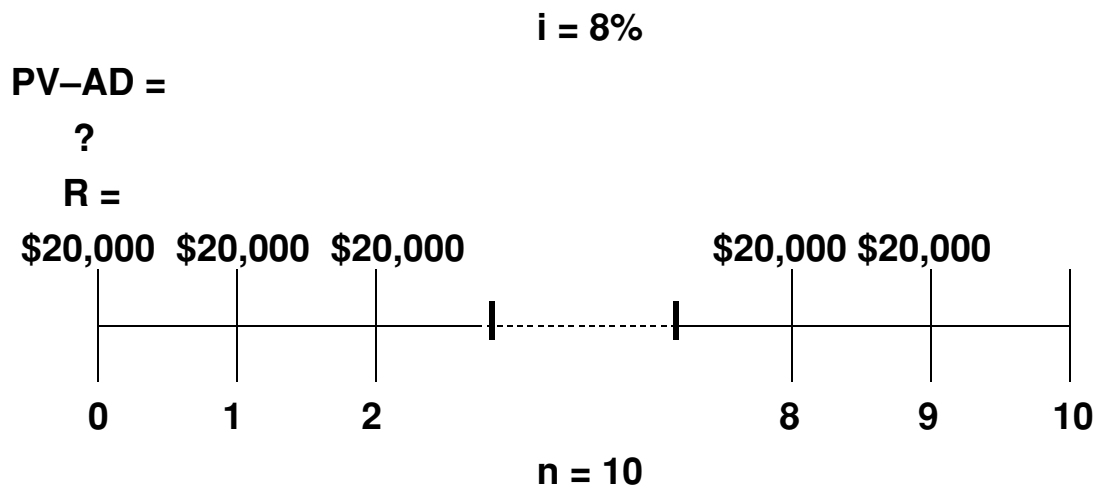


$$PV-OA = \$20,000 (PVF-OA_{10, 8\%})$$

$$PV-OA = \$20,000 (6.71008)$$

$$PV-OA = \$134,202$$

First withdrawal immediately

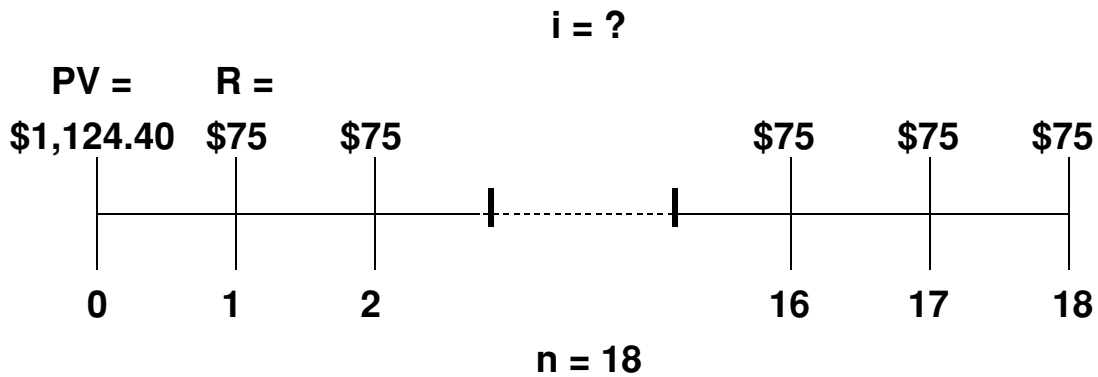


$$PV-AD = \$20,000 (PVF-AD_{10, 8\%})$$

$$PV-AD = \$20,000 (7.24689)$$

$$PV-AD = \$144,938$$

BRIEF EXERCISE 6-11

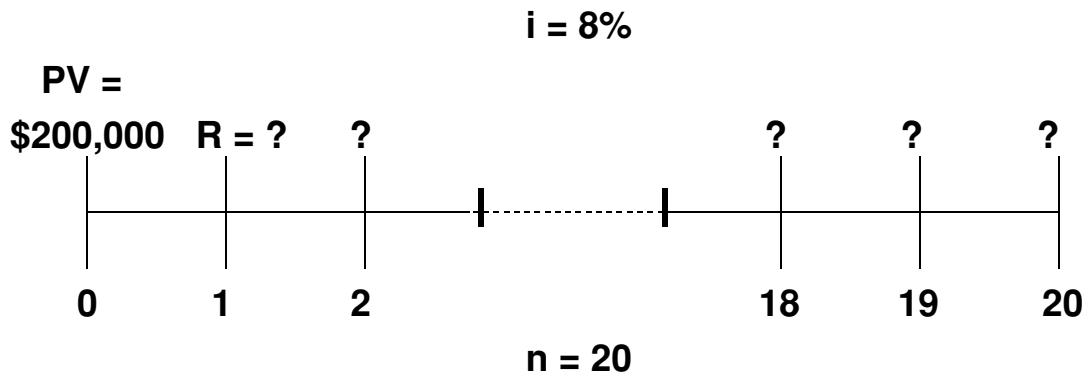


$$\$1,124.40 = \$75 (\text{PVF-}OA_{18, i})$$

$$\text{PVF}_{18, i} = \frac{\$1,124.40}{75} = 14.992$$

Therefore, $i = 2\%$ per month

BRIEF EXERCISE 6-12

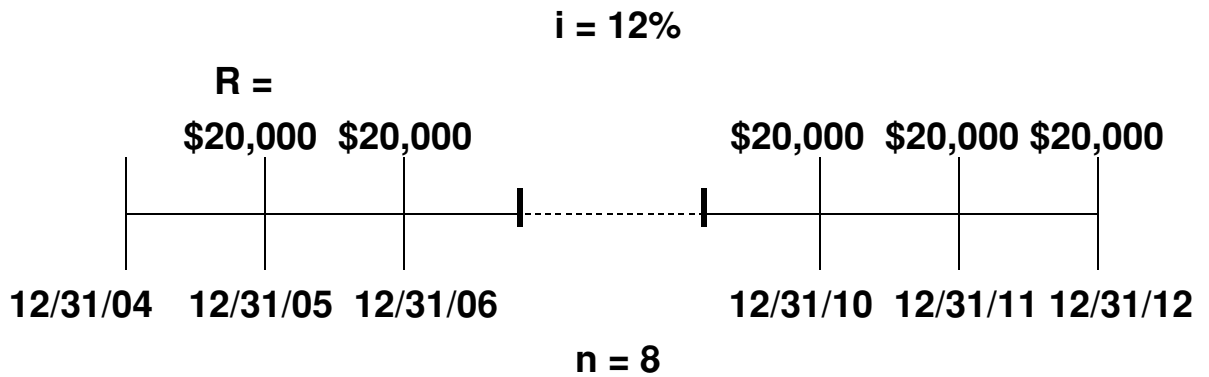


$$\$200,000 = R (\text{PVF-}OA_{20, 8\%})$$

$$\$200,000 = R (9.81815)$$

$$R = \$20,370$$

BRIEF EXERCISE 6-13

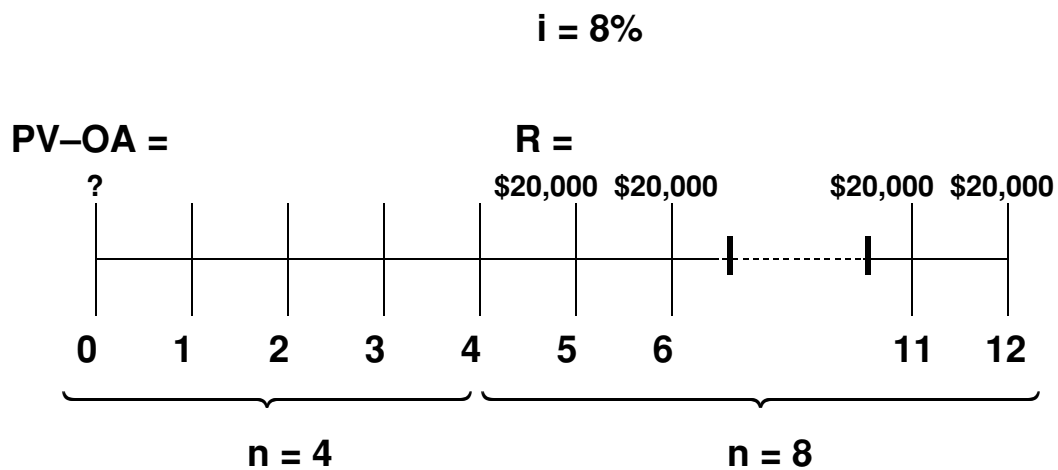


$$FV-OA = \$20,000 (FVF-OA_{8, 12\%})$$

$$FV-OA = \$20,000 (12.29969)$$

$$FV-OA = \$245,994$$

BRIEF EXERCISE 6-14



$$PV-OA = \$20,000 (PVF-OA_{12-4, 8\%})$$

$$PV-OA = \$20,000 (PVF-OA_{8, 8\%})(PVF_{4, 8\%})$$

OR

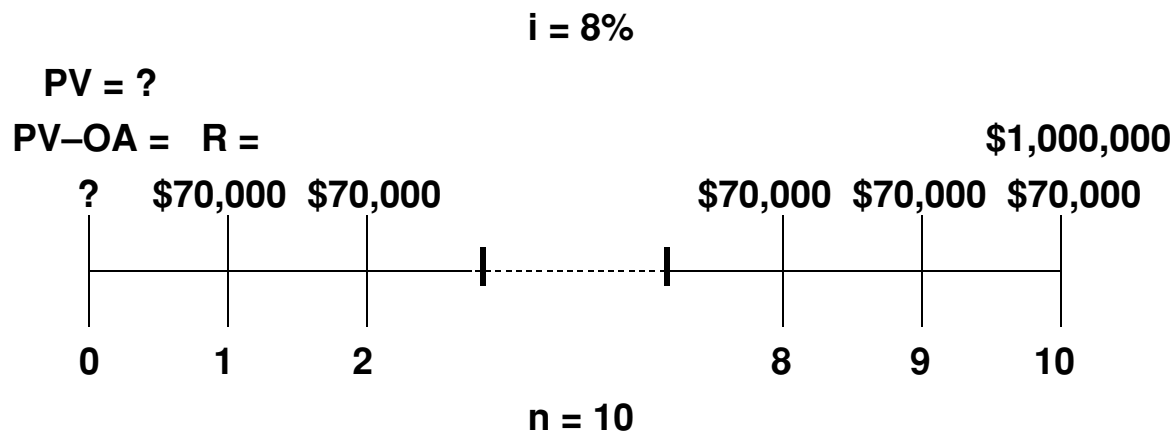
$$PV-OA = \$20,000 (7.53608 - 3.31213)$$

$$PV-OA = \$20,000 (5.74664)(.73503)$$

$$PV-OA = \$84,479$$

$$PV-OA = \$84,479$$

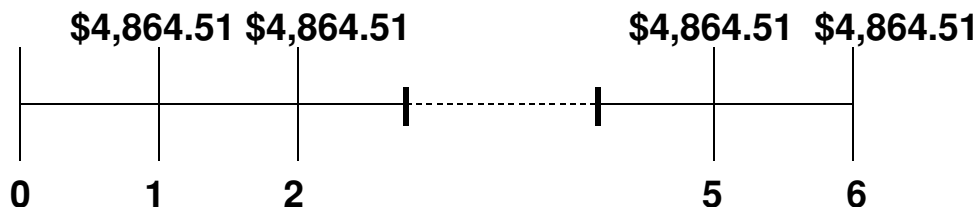
BRIEF EXERCISE 6-15



$$\begin{array}{r}
 \$1,000,000 (PVF_{10, 8\%}) = \$1,000,000 (.46319) = \$463,190 \\
 70,000 (PVF-OA_{10, 8\%}) = \$70,000 (6.71008) \quad \underline{469,706} \\
 \hline
 \underline{\underline{\$932,896}}
 \end{array}$$

BRIEF EXERCISE 6-16

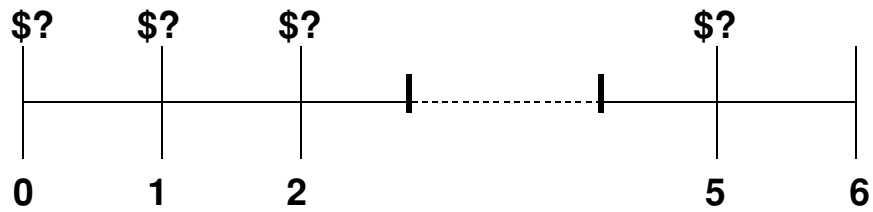
PV-OA = \$20,000



$$\begin{array}{r}
 \$20,000 \quad \quad = \$4,864.51 (PV-OA_{6, i\%}) \\
 (PV-OA_{6, i\%}) \quad = \$20,000 \div \$4,864.51 \\
 (PV-OA_{6, i\%}) \quad = 4.1114 \\
 \text{Therefore, } i\% \quad = 12
 \end{array}$$

BRIEF EXERCISE 6-17

PV-OA = \$20,000



$$\mathbf{\$20,000 = \text{Payment} (PV-AD_{6, 12\%})}$$

$$\mathbf{\$20,000 \div (PV-AD_{6, 12\%}) = \text{Payment}}$$

$$\mathbf{\$20,000 \div 4.60478 = \$4,343.31}$$

SOLUTIONS TO EXERCISES

EXERCISE 6-1 (5-10 minutes)

		<u>Rate of Interest</u>	<u>Number of Periods</u>
1.	a.	9%	9
	b.	3%	20
	c.	5%	30
2.	a.	9%	25
	b.	5%	30
	c.	3%	28

EXERCISE 6-2 (5-10 minutes)

	<u>Cash Flow</u>	<u>Probability</u>	<u>Assessment =</u>	<u>Expected Cash Flow</u>
(a)	\$ 3,800	20%		\$ 760
	6,300	50%		3,150
	7,500	30%		<u>2,250</u>
		Total Expected		
		Value		<u>\$6,160</u>
(b)	\$ 5,400	30%		\$ 1,620
	7,200	50%		3,600
	8,400	20%		<u>1,680</u>
		Total Expected		
		Value		<u>\$6,900</u>

EXERCISE 6-2 (Continued)

3. \$(1,000)	10%	\$ -100
2,000	80%	1,600
5,000	10%	<u>500</u>
Total Expected		
Value		<u>\$2,000</u>

EXERCISE 6-3 (10-15 minutes)

Estimated Cash Outflow X	Probability Assessment =	Expected Cash Flow	Present Value
\$ 200	10%	\$ 20	X PV
450	30%	135	Factor
550	50%	275	single sum,
750	10%	<u>75</u>	n = 2, I = 6%
		<u>\$ 505</u>	X 0.89
			<u>\$ 449.45</u>

EXERCISE 6-4 (5-10 minutes)

(a) Simple interest of \$1,600 per year X 8	\$12,800
Principal	<u>20,000</u>
Total withdrawn	<u>\$32,800</u>
(b) Interest compounded annually—Future value of 1 @ 8% for 8 periods	1.85093
	X \$20,000
Total withdrawn	<u>\$37,018.60</u>

EXERCISE 6-4 (Continued)

(c) Interest compounded semiannually—Future value of 1 @ 4% for 16 periods	1.87298
	<u>X \$20,000</u>
Total withdrawn	<u>\$37,459.60</u>

EXERCISE 6-5 (10-15 minutes)

- (a) $\$7,000 \times 1.46933 = \$10,285.31.$
- (b) $\$7,000 \times .43393 = \$3,037.51.$
- (c) $\$7,000 \times 31.77248 = \$222,407.36.$
- (d) $\$7,000 \times 12.46221 = \$87,235.47.$

EXERCISE 6-6 (15-20 minutes)

(a) Future value of an ordinary annuity of \$4,000 a period for 20 periods at 8%	\$183,047.8	(\$4,000 X 45.76196)
Factor (1 + .08)	<u>X 1.08</u>	
Future value of an annuity due of \$4,000 a period at 8%	<u>\$197,691.66</u>	

EXERCISE 6-6 (Continued)

- (b) Present value of an ordinary annuity of \$2,500 for 30 periods at 10% \$23,567.28 (\$2,500 X 9.42691)
Factor (1 + .10) X 1.10
Present value of annuity due of \$2,500 for 30 periods at 10% \$25,924.00 (Or see Table 6-5 which gives \$25,924.03)
- (c) Future value of an ordinary annuity of \$2,000 a period for 15 periods at 10% \$63,544.96 (\$2,000 X 31.77248)
Factor (1 + .10) X 1.10
Future value of an annuity due of \$2,000 a period for 15 periods at 10% \$69,899.46
- (d) Present value of an ordinary annuity of \$1,000 for 6 periods at 9% \$4,485.92 (\$1,000 X 4.48592)
Factor (1 + .09) X 1.09
Present value of an annuity due of \$1,000 for 6 periods at 9% \$4,889.65 (Or see Table 6-5)

EXERCISE 6-7 (10-15 minutes)

- (a) $\$30,000 \times 4.96764 = \$149,029.20.$
- (b) $\$30,000 \times 8.31256 = \$249,376.80.$
- (c) $(\$30,000 \times 3.03735 \times .50663 = \$46,164.38.$
or $(5.65022 - 4.11141) \times \$30,000 = \$46,164.30$ (difference of \$.08 due to rounding).

EXERCISE 6-8 (15-20 minutes)

- (a) Future value of \$12,000 @ 10% for 10 years
($\$12,000 \times 2.59374$) = **\$31,124.88**
- (b) Future value of an ordinary annuity of \$600,000
at 10% for 15 years ($\$600,000 \times 31.77248$) **\$19,063,488.00**
Deficiency ($\$20,000,000 - \$19,063,488$) **\$936,512.00**
- (c) \$70,000 discounted at 8% for 10 years:
 $\$70,000 \times .46319 =$ **\$32,423.30**

Accept the bonus of \$40,000 now.

(Also, consider whether the 8% is an appropriate discount rate since the president can probably earn compound interest at a higher rate without too much additional risk.)

EXERCISE 6-9 (12-17 minutes)

- (a) $\$50,000 \times .31524 = \$15,762.00$
 $+ \$5,000 \times 8.55948 = \underline{42,797.40}$
\$58,559.40
- (b) $\$50,000 \times .23939 = \$11,969.50$
 $+ \$5,000 \times 7.60608 = \underline{38,030.40}$
\$49,999.90

The answer should be \$50,000; the above computation is off by 10¢ due to rounding.

- (c) $\$50,000 \times .18270 = \$ 9,135.00$
 $+ \$5,000 \times 6.81086 = \underline{34,054.30}$
\$43,189.30

EXERCISE 6-10 (10-15 minutes)

- (a) Present value of an ordinary annuity of 1
for 4 periods @ 8% 3.31213
Annual withdrawal X \$20,000
Required fund balance on June 30, 2010 \$66,242.60
- (b) Fund balance at June 30, 2010 \$66,242.60
Future amount of ordinary annuity at 8% 4.50611 = \$14,700.62
for 4 years

Amount of each of four contributions is \$14,700.62

EXERCISE 6-11 (10 minutes)

The rate of interest is determined by dividing the future value by the present value and then find the factor in the FVF table with $n = 2$ that approximate that number:

$$\$123,210 = \$100,000 (FVF_{2, i\%})$$

$$\$123,210 \div \$100,000 = (FVF_{2, i\%})$$

1.2321 = $(FVF_{2, i\%})$ —reading across the $n = 2$ row reveals that $i = 11\%$.

EXERCISE 6-12 (10-15 minutes)

- (a) The number of interest periods is calculated by first dividing the future value of \$1,000,000 by \$92,296, which is 10.83471—the value \$1.00 would accumulate to at 10% for the unknown number of interest periods. The factor 10.83471 or its approximate is then located in the Future value of 1 Table by reading down the 10% column to the 25-period line; thus, 25 is the unknown number of years Mike must wait to become a millionaire.
- (b) The unknown interest rate is calculated by first dividing the future value of \$1,000,000 by the present investment of \$182,696, which is 5.47357—the amount \$1.00 would accumulate to in 15 years at an unknown interest rate. The factor or its approximate is then located in the Future value of 1 Table by reading across the 15-period line to the 12% column; thus, 12% is the interest rate Venus must earn on her investment to become a millionaire.

EXERCISE 6-13 (10-15 minutes)

(a) **Total interest = Total Payments—Amount owed today**
\$162,745.30 (10 X \$16,274.53) – \$100,000 = \$62,745.30.

(b) **Sosa should borrow from the bank, since the 9% rate is lower than the manufacturer's 10% rate determined below.**

$$\begin{aligned} PV-OA_{10, i\%} &= \$100,000 \div \$16,274.53 \\ &= 6.14557—\text{Inspection of the 10 period row reveals a rate of} \\ &\quad \mathbf{10\%}. \end{aligned}$$

EXERCISE 6-14 (10-15 minutes)

Building A—PV = \$600,000.

Building B—

$$\begin{aligned} \text{Rent X (PV of annuity due of 25 periods at 12\%)} &= \text{PV} \\ \$69,000 \times 8.78432 &= \text{PV} \\ \$606,118.08 &= \text{PV} \end{aligned}$$

Building C—

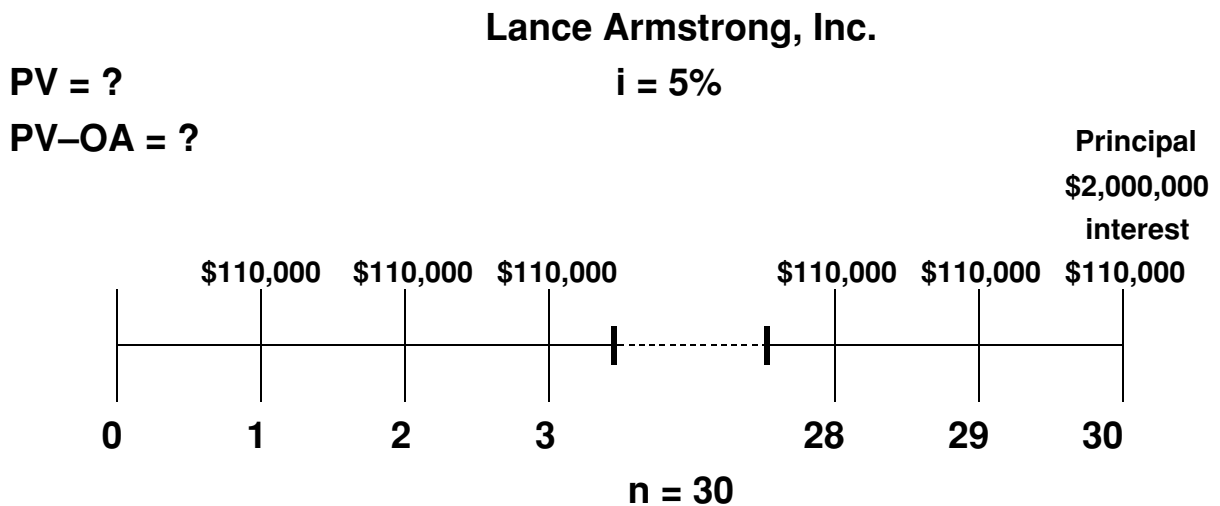
$$\begin{aligned} \text{Rent X (PV of ordinary annuity of 25 periods at 12\%)} &= \text{PV} \\ \$7,000 \times 7.84314 &= \text{PV} \\ \$54,901.98 &= \text{PV} \end{aligned}$$

Cash purchase price of	\$650,000.00
PV of rental income	– 54,901.98
Net present value	<u>\$595,098.02</u>

Answer: Lease Building C since its present value of its net cost is the smallest.

EXERCISE 6-15 (15-20 minutes)

Time diagram:



Formula for the interest payments:

$$PV-OA = R (PVF-OA_{n, i})$$

$$PV-OA = \$110,000 (PVF-OA_{30, 5\%})$$

$$PV-OA = \$110,000 (15.37245)$$

$$PV-OA = \underline{\underline{\$1,690,970}}$$

Formula for the principal:

$$PV = FV (PVF_{n, i})$$

$$PV = \$2,000,000 (PVF_{30, 5\%})$$

$$PV = \$2,000,000 (0.23138)$$

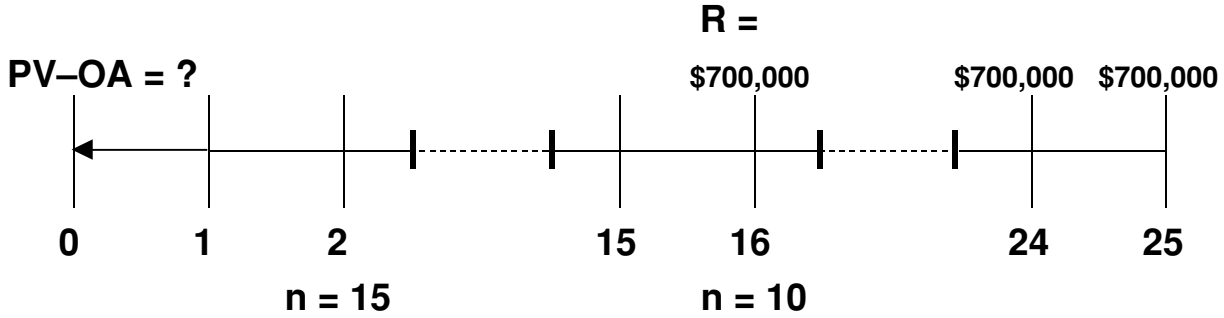
$$PV = \underline{\underline{\$462,760}}$$

The selling price of the bonds = $\$1,690,970 + \$462,760 = \$2,153,730$.

EXERCISE 6-16 (15-20 minutes)

Time diagram:

$i = 8\%$



Formula: $PV-OA = R (PVF-OA_{n,i})$

$$PV-OA = \$700,000 (PVF-OA_{25-15, 8\%})$$

$$PV-OA = \$700,000 (10.67478 - 8.55948)$$

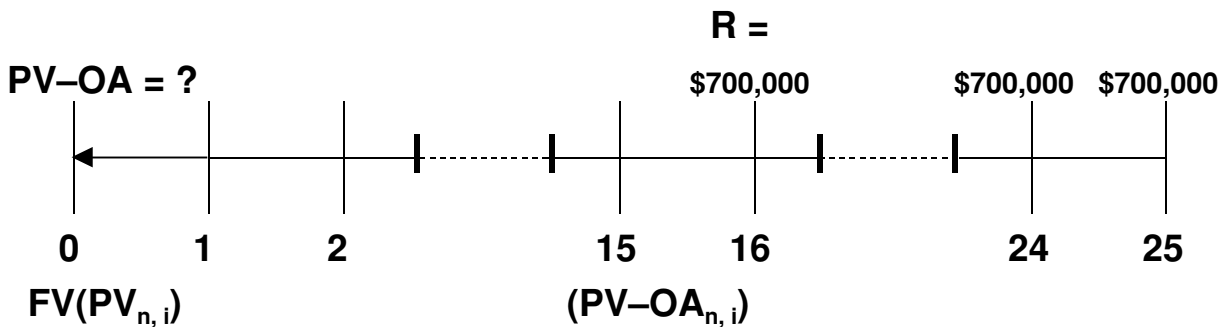
$$PV-OA = \$700,000 (2.11530)$$

$$PV-OA = \underline{\underline{\$1,480,710}}$$

OR

Time diagram:

$i = 8\%$



EXERCISE 6-16 (Continued)

- (i) Present value of the expected annual pension payments at the end of the 15th year:

$$PV-OA = R (PVF-OA_{n, i})$$

$$PV-OA = \$700,000 (PVF-OA_{10, 8\%})$$

$$PV-OA = \$700,000 (6.71008)$$

$$PV-OA = \underline{\$4,697,056}$$

- (ii) Present value of the expected annual pension payments at the beginning of the current year:

$$PV = FV (PVF-OA_{n, i})$$

$$PV = \$4,697,056 (PVF-OA_{15, 8\%})$$

$$PV = \$4,697,056 (0.31524)$$

$$PV = \underline{\$1,480,700^*}$$

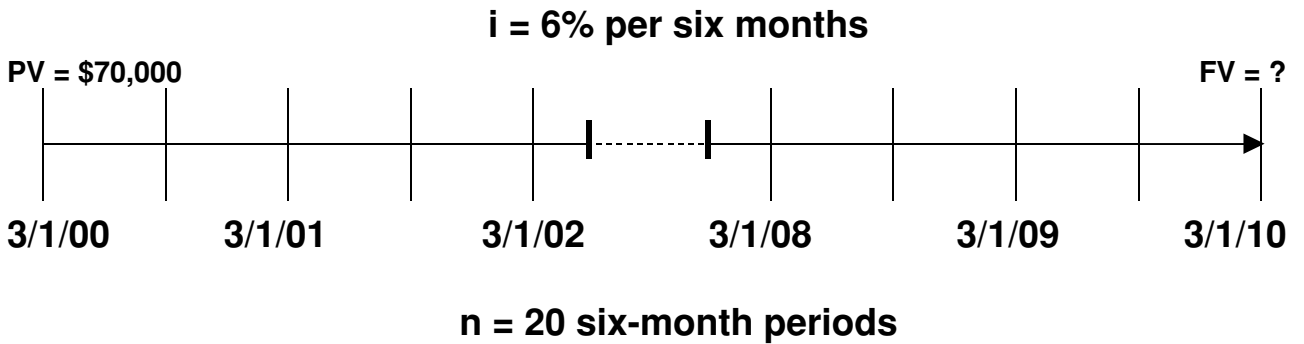
*\$10 difference due to rounding.

The company's pension obligation (liability) is \$1,480,700.

EXERCISE 6-18 (10-15 minutes)

Amount to be repaid on March 1, 2010.

Time diagram:



Formula: $FV = PV (FVF_{n,i})$

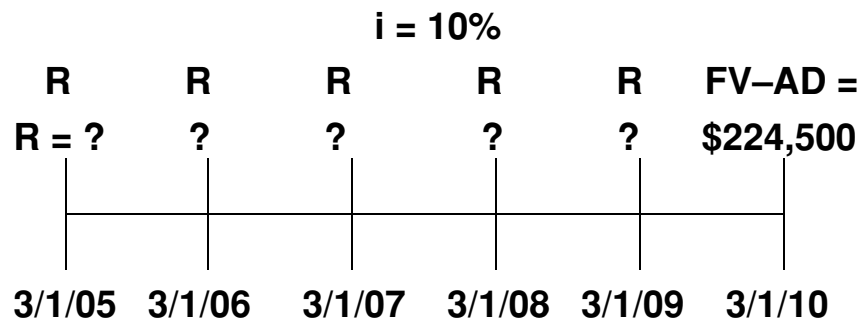
$$FV = \$70,000 (FVF_{20,6\%})$$

$$FV = \$70,000 (3.20714)$$

$$FV = \underline{\underline{\$224,500}}$$

Amount of annual contribution to retirement fund.

Time diagram:

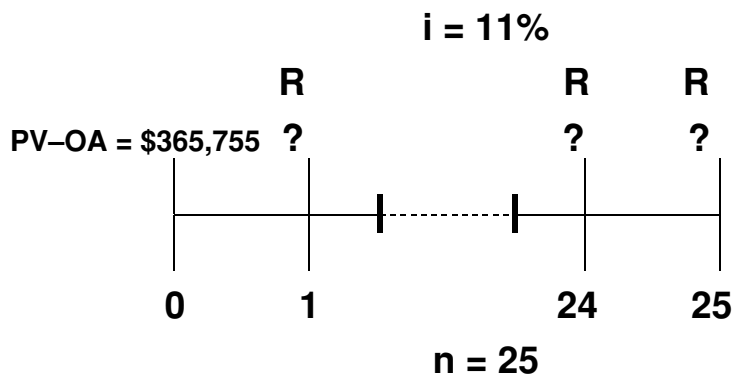


EXERCISE 6-18 (Continued)

1. Future value of ordinary annuity of 1 for 5 periods at 10%		6.10510
2. Factor (1 + .10)	X	<u>1.10000</u>
3. Future value of an annuity due of 1 for 5 periods at 10%		<u>6.71561</u>
4. Periodic rent (\$224,500 ÷ 6.71561)		<u>\$33,430</u>

EXERCISE 6-19 (10-15 minutes)

Time diagram:



Formula: $PV-OA = R (PV-OA_{n, i})$

$$\$365,755 = R (PVF-OA_{25, 11\%})$$

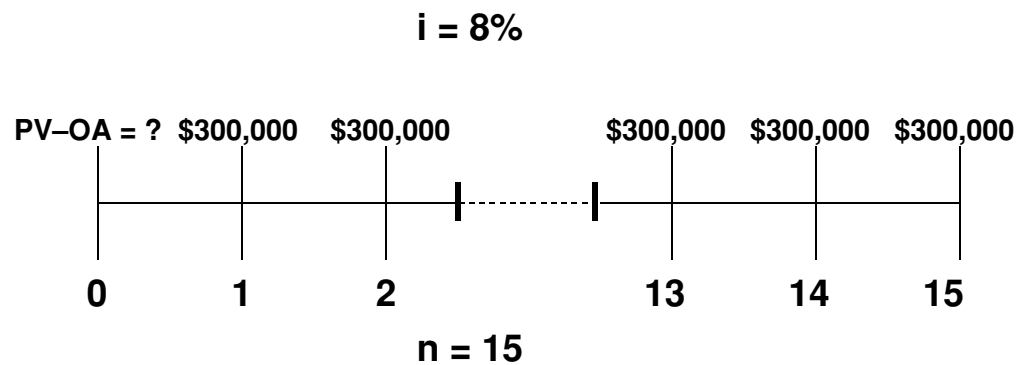
$$\$365,755 = R (8.42174)$$

$$R = \$365,755 \div 8.42174$$

$$R = \underline{\underline{\$43,429.86}}$$

EXERCISE 6-20 (10-15 minutes)

Time diagram:



Formula: $PV-OA = R (PVF-OA_{n, i})$

$$PV-OA = \$300,000 (PVF-OA_{15, 8\%})$$

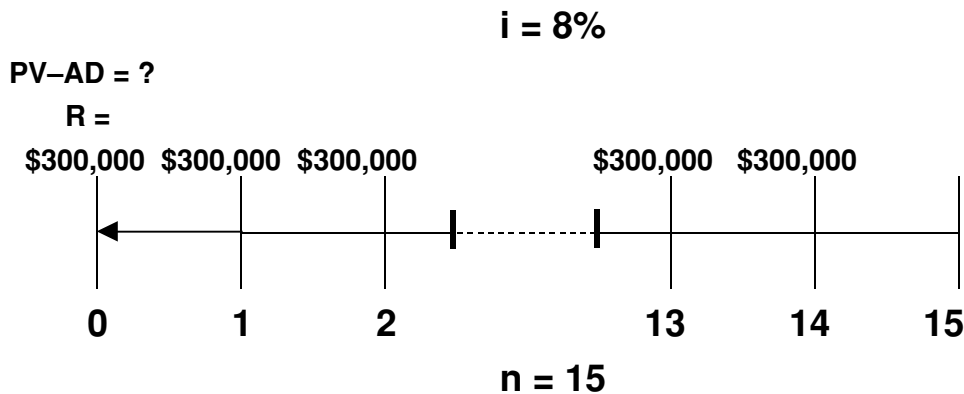
$$PV-OA = \$300,000 (8.55948)$$

$$R = \underline{\underline{\$2,567,844}}$$

The recommended method of payment would be the 15 annual payments of \$300,000, since the present value of those payments (\$2,567,844) is less than the alternative immediate cash payment of \$2,600,000.

EXERCISE 6-21 (10-15 minutes)

Time diagram:



Formula:

Using Table 6-4

$$PV-AD = R (PVF-OA_{n,i})$$

$$PV-AD = \$300,000 (8.55948 \times 1.08)$$

$$PV-AD = \$300,000 (9.24424)$$

$$PV-AD = \underline{\underline{\$2,773,272}}$$

Using Table 6-5

$$PV-AD = R (PVF-AD_{n,i})$$

$$PV-AD = \$300,000 (PVF-AD_{15, 8\%})$$

$$PV-AD = \$300,000 (9.24424)$$

$$PV-AD = \underline{\underline{\$2,773,272}}$$

The recommended method of payment would be the immediate cash payment of \$2,600,000, since that amount is less than the present value of the 15 annual payments of \$300,000 (\$2,773,272).

***EXERCISE 6-22**

10	?	-19,000	0	49,000
N	I/YR.	PV	PMT	FV
	9.94%			

***EXERCISE 6-23**

10	?	42,000	6,500	0
N	I/YR.	PV	PMT	FV
	8.85%			

***EXERCISE 6-24**

40	?	178,000	14,000	0
N	I/YR.	PV	PMT	FV
	7.49%			
	(semiannual)			

TIME AND PURPOSE OF PROBLEMS

Problem 6-1 (Time 15-20 minutes)

Purpose—to present an opportunity for the student to determine how to use the present value tables in various situations. Each of the situations presented emphasizes either a present value of 1 or a present value of an ordinary annuity situation. Two of the situations will be little more difficult for the student because a noninterest-bearing note and bonds are involved.

Problem 6-2 (Time 15-20 minutes)

Purpose—to present an opportunity for the student to determine solutions to four present and future value situations. The student is required to determine the number of years over which certain amounts will accumulate, the rate of interest required to accumulate a given amount, and the unknown amount of periodic payments. The problem develops the student's ability to set up present and future value equations and solve for unknown quantities.

Problem 6-3 (Time 20-30 minutes)

Purpose—to present the student with an opportunity to determine the future value of a series of deposits. The student is required to deal with the future value of an annuity due and the future value of a single sum. The problem presents a situation where interest rates change during the annuity period.

Problem 6-4 (Time 20-30 minutes)

Purpose—to present the student with an opportunity to determine the present value of the costs of competing contracts. Each situation requires application of a present value of an amount of 1 factor and a present value of an annuity factor. The student is required to decide on the contract to be accepted.

Problem 6-5 (Time 20-25 minutes)

Purpose—to provide the student with an opportunity to determine which of four insurance options results in the largest present value. The student is required to determine the present value of options which include the immediate receipt of cash, an ordinary annuity, an annuity due, and an annuity of changing amount. The student must also deal with interest compounded quarterly. This problem is a good summary of the application of present value techniques.

Problem 6-6 (Time 20-25 minutes)

Purpose—to present the student an opportunity to compute expected cash flows and then apply present value techniques to determine a warranty liability.

Problem 6-7 (Time 20-25 minutes)

Purpose—to present the student an opportunity to compute expected cash flows and then apply present value techniques to determine the fair value of an asset.

Problem 6-8 (Time 25-30 minutes)

Purpose—to present an opportunity for the student to determine the present value of a series of deferred annuities. The student must deal with both cash inflows and outflows to arrive at a present value of net cash inflows. A good problem to develop the student's ability to manipulate the present value table factors to efficiently solve the problem.

Problem 6-9 (Time 30-35 minutes)

Purpose—to present the student an opportunity to use time value concepts in business situations. Some of the situations are fairly complex and will require the student to think a great deal before answering the question. For example, in one situation a student must discount a note and in another must find the proper interest rate to use in a purchase transaction.

Time and Purpose of Problems (Continued)

Problem 6-10 (Time 20-30 minutes)

Purpose—to present the student with an opportunity to determine the present value of an ordinary annuity and annuity due for three different cash payment situations. The student must then decide which cash payment plan should be undertaken.

Problem 6-11 (Time 30-35 minutes)

Purpose—to present the student with the opportunity to work three different problems related to time value concepts: purchase versus lease, determination of fair value of a note, and appropriateness of taking a cash discount.

Problem 6-12 (Time 30-35 minutes)

Purpose—to present the student with the opportunity to assess whether a company should purchase or lease. The computations for this problem are relatively complicated.

Problem 6-13 (Time 25-30 minutes)

Purpose—to present the student an opportunity to apply present value to retirement funding problems, including deferred annuities.

Problem 6-14 (Time 20-25 minutes)

Purpose—to provide the student an opportunity to explore the ethical issues inherent in applying time value of money concepts to retirement plan decisions.

***Problems 6-15, 6-16, 6-17** (Time 10-15 minutes each)

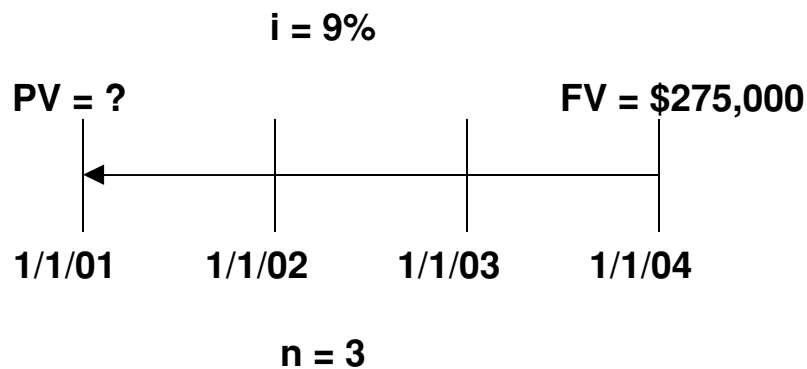
Purpose—to present the student an opportunity to use a financial calculator to solve time value of money problems.

SOLUTIONS TO PROBLEMS

PROBLEM 6-1

- (a) Given no established value for the building, the fair market value of the note would be estimated to value the building.

Time diagram:



Formula: $PV = FV (PVF_{n, i})$

$$PV = \$275,000 (PVF_{3, 9\%})$$

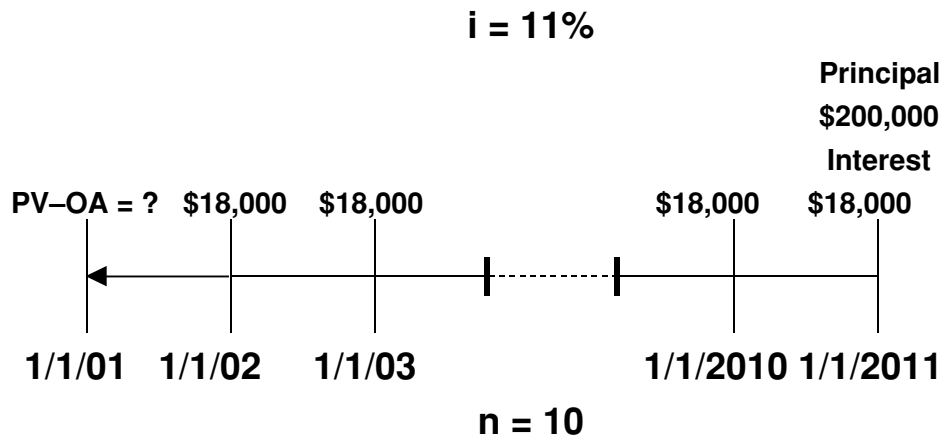
$$PV = \$275,000 (.77218)$$

$$PV = \underline{\underline{\$212,349.50}}$$

Cash equivalent price of building	\$212,349.50
Less book value (\$250,000 – \$100,000)	<u>150,000.00</u>
Gain on disposal of the building	<u>\$ 62,349.50</u>

PROBLEM 6-1 (Continued)

(b) Time diagram:



Present value of the principal

$$FV (PVF_{10, 11\%}) = \$200,000 (.35218) = \$ 70,436.00$$

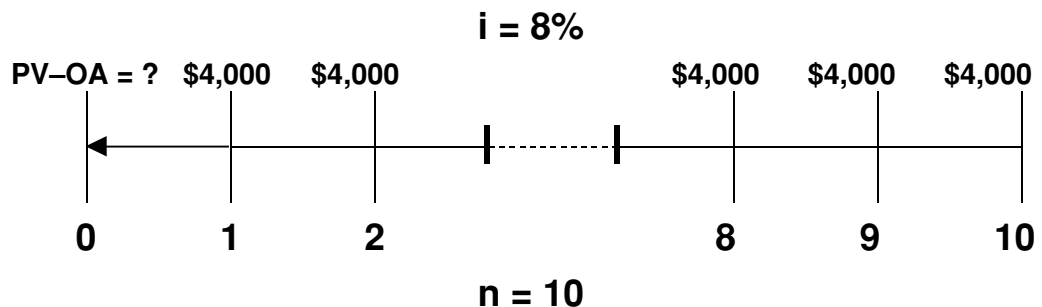
Present value of the interest payments

$$R (PVF-OA_{10, 11\%}) = \$18,000 (5.88923) = \underline{106,006.14}$$

Combined present value (purchase price)

$$\underline{\underline{\$176,442.14}}$$

(c) Time diagram:



Formula: $PV-OA = R (PVF-OA_{n,i})$

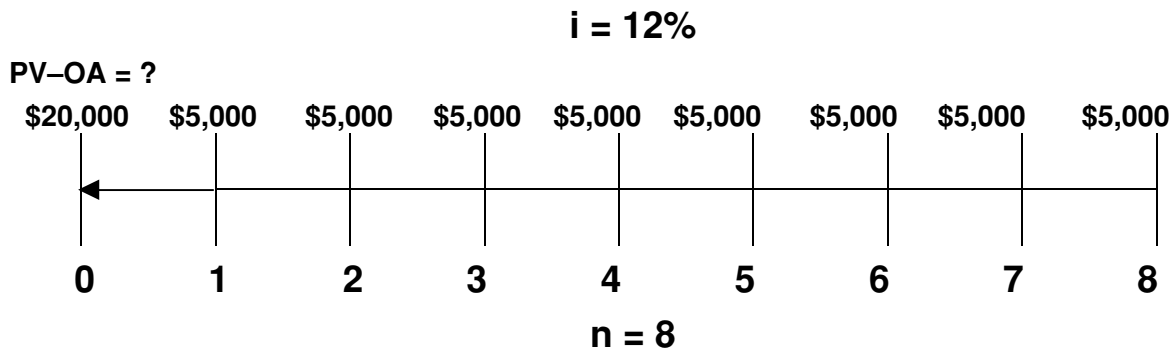
$$PV-OA = \$4,000 (PVF-OA_{10, 8\%})$$

$$PV-OA = \$4,000 (6.71008)$$

$$PV-OA = \underline{\underline{\$26,840.32}} \text{ (cost of machine)}$$

PROBLEM 6-1 (Continued)

(d) Time diagram:



Formula: $PV-OA = R (PVF-OA_{n,i})$

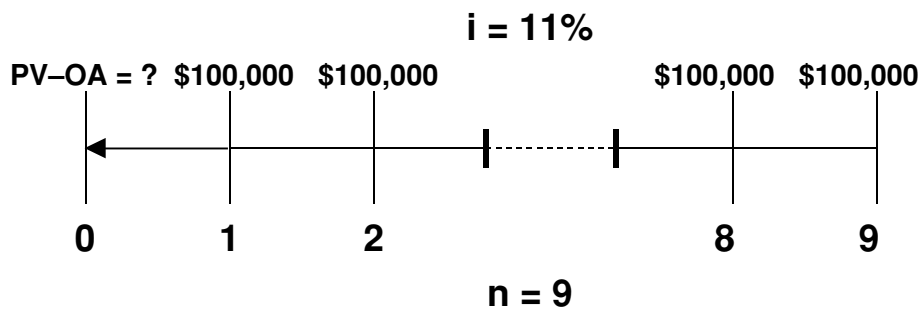
$$PV-OA = \$5,000 (PVF-OA_{8, 12\%})$$

$$PV-OA = \$5,000 (4.96764)$$

$$PV-OA = \underline{\underline{\$24,838.20}}$$

$$\text{Cost of machine} = \$20,000 + \$24,838.20 = \underline{\underline{\$44,838.20}}$$

(e) Time diagram:



Formula: $PV-OA = R (PVF-OA_{n,i})$

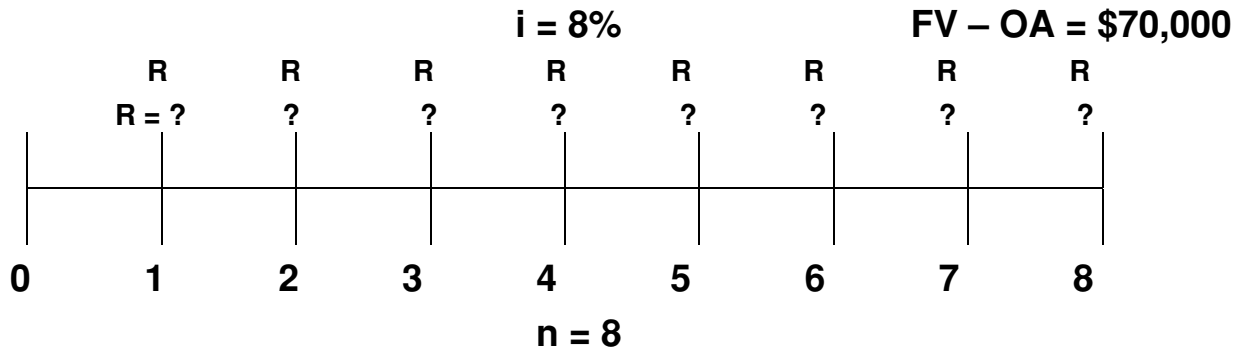
$$PV-OA = \$100,000 (PVF-OA_{9, 11\%})$$

$$PV-OA = \$100,000 (5.53705)$$

$$PV-OA = \underline{\underline{\$553,705}}$$

PROBLEM 6-2

(a) Time diagram:



Formula: $FV-OA = R (FVF-OA_{n,i})$

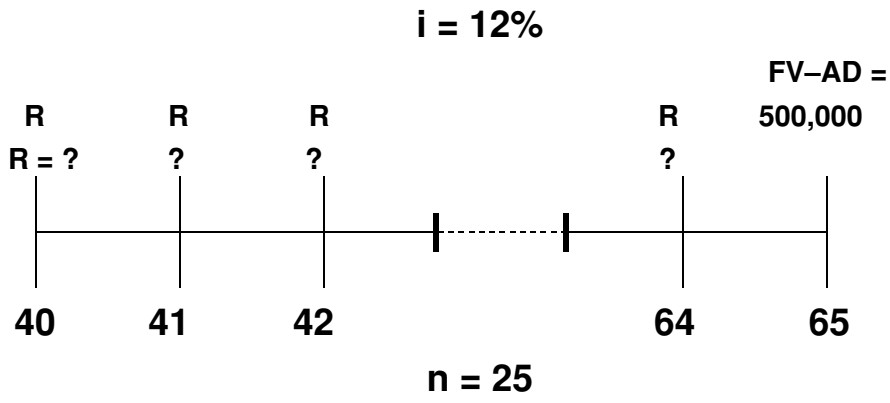
$$\$70,000 = R (FVF-OA_{8, 8\%})$$

$$\$70,000 = R (10.63663)$$

$$R = \$70,000 \div 10.63663$$

$$R = \underline{\underline{\$6,581.03}}$$

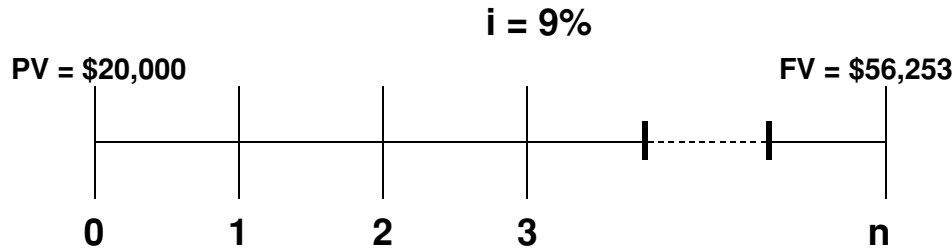
(b) Time diagram:



PROBLEM 6-2 (Continued)

1. Future value of an ordinary annuity of 1 for 25 periods at 12%	133.33387
2. Factor (1 + .12)	<u>1.1200</u>
3. Future value of an annuity due of 1 for 25 periods at 12%	<u>149.33393</u>
4. Periodic rent (\$500,000 ÷ 149.33393)	<u>\$3,348.20</u>

(c) Time diagram:



Future value approach

$$FV = PV (FVF_{n,i})$$

$$\$56,253 = \$20,000 (FVF_{n,9\%})$$

$$FVF_{n,9\%} = \frac{\$56,253}{\$20,000} = \underline{2.81265}$$

2.81265 is approximately the value of \$1 invested at 9% for 12 years.

Present value approach

$$PV = FV (PVF_{n,i})$$

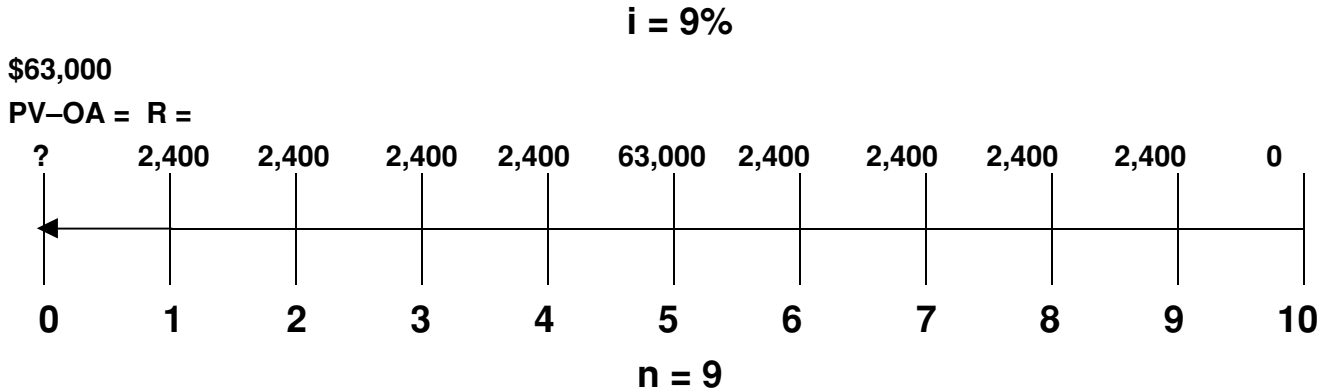
$$\$20,000 = \$56,253 (PVF_{n,9\%})$$

$$PVF_{n,9\%} = \frac{\$20,000}{\$56,253} = \underline{.35554}$$

.35554 is approximately the present value of \$1 discounted at 9% for 12 years.

PROBLEM 6-3

Time diagram (Bid A):



Present value of initial cost

$$12,000 \times \$5.25 = \underline{\$63,000} \text{ (incurred today)} \qquad \qquad \qquad \$ 63,000.00$$

Present value of maintenance cost (years 1-4)

$$12,000 \times \$0.20 = \underline{\$2,400}$$

$$R (PVF-OA_{4, 9\%}) = \$2,400 (3.23972) \qquad \qquad \qquad 7,775.33$$

Present value of resurfacing

$$FV (PVF_{5, 9\%}) = \$63,000 (.64993) \qquad \qquad \qquad 40,945.59$$

Present value of maintenance cost (years 6-9)

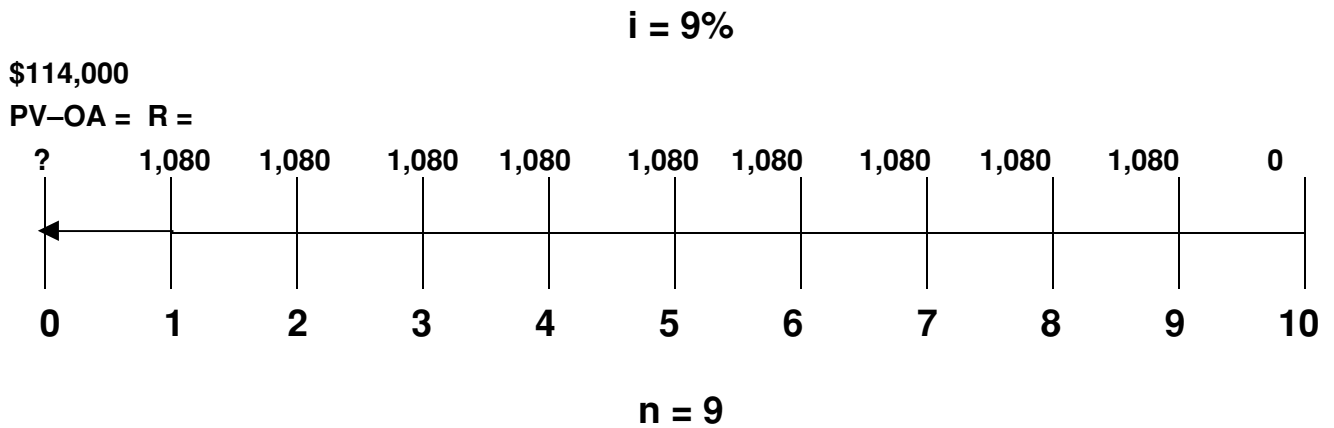
$$R (PVF-OA_{9-5, 9\%}) = \$2,400 (5.99525 - 3.88965) \qquad \qquad \underline{\underline{5,053.44}}$$

Present value of outflows for Bid A

\$116,774.36

PROBLEM 6-3 (Continued)

Time diagram (Bid B):



Present value of initial cost

$$12,000 \times \$9.50 = \$114,000 \text{ (incurred today)} \qquad \qquad \qquad \$114,000.00$$

Present value of maintenance cost

$$12,000 \times \$0.09 = \underline{\$1,080}$$

$$R (PV-OA_{9, 9\%}) = \$1,080 (5.99525) \qquad \qquad \qquad \underline{\underline{6,474.87}}$$

$$\text{Present value of outflows for Bid B} \qquad \qquad \qquad \underline{\underline{\$120,474.87}}$$

Bid A should be accepted since its present value is the lower.

PROBLEM 6-4

Lump sum alternative: Present Value = \$900,000 X (1 – .46) = \$486,000.

Annuity alternative: Payments = \$62,000 X (1 – .25) = \$46,500.

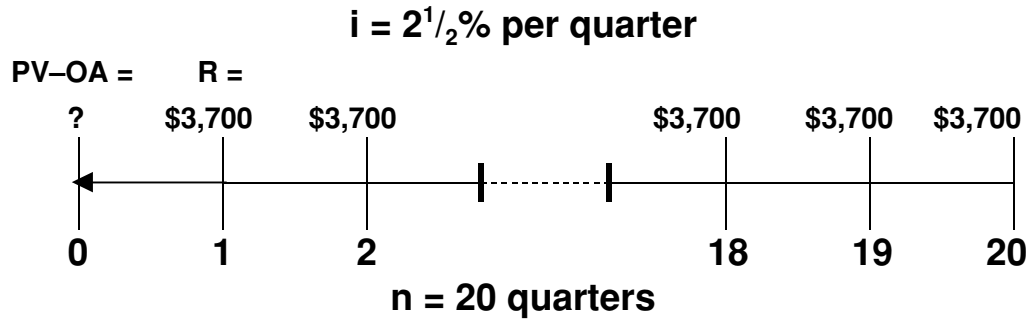
$$\begin{aligned}\text{Present Value} &= \text{Payments (PV-AD}_{20, 8\%}) \\ &= \$46,500 (10.60360) \\ &= \$493,067.40.\end{aligned}$$

O'Malley should choose the annuity payout; its present value is \$7,067.40 greater.

PROBLEM 6-5

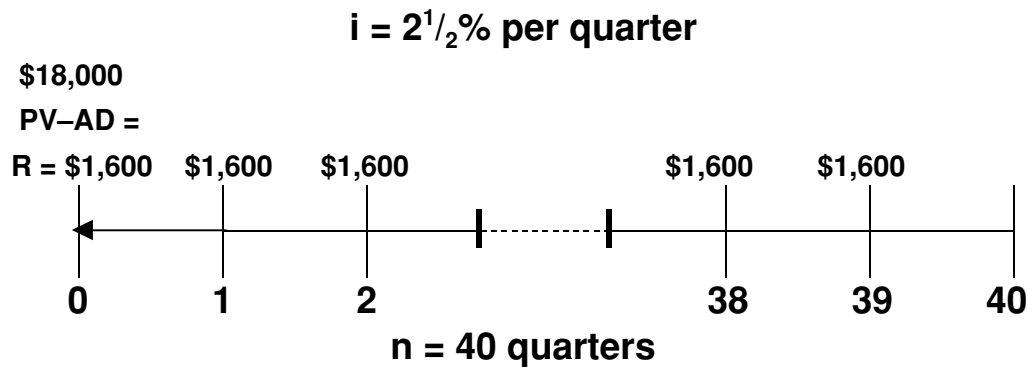
(a) The present value of \$55,000 cash paid today is \$55,000.

(b) Time diagram:



Formula: $PV-OA = R (PVF-OA_{n, i})$
 $PV-OA = \$3,700 (PVF-OA_{20, 2\frac{1}{2}\%})$
 $PV-OA = \$3,700 (15.58916)$
 $PV-OA = \underline{\underline{\$57,679.89}}$

(c) Time diagram:



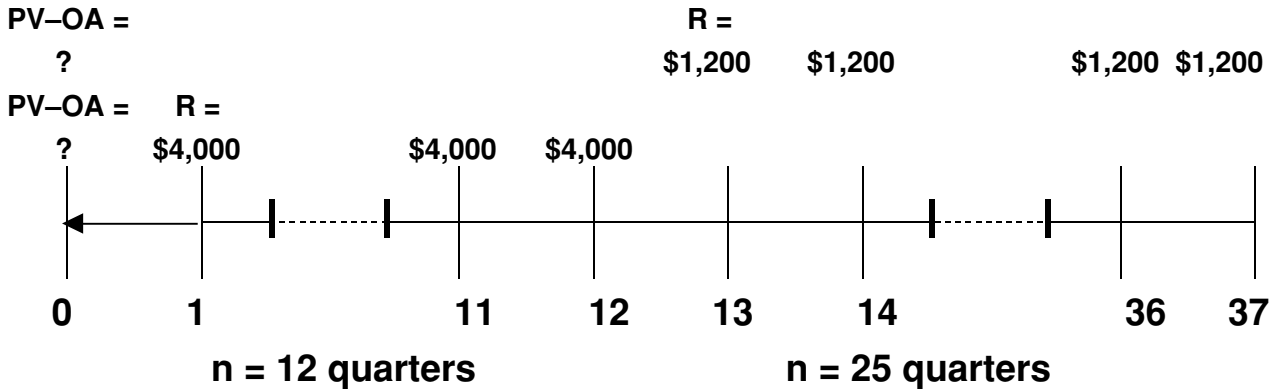
Formula: $PV-AD = R (PVF-AD_{n, i})$
 $PV-AD = \$1,600 (PVF-AD_{40, 2\frac{1}{2}\%})$
 $PV-AD = \$1,600 (25.73034)$
 $PV-AD = \underline{\underline{\$41,168.54}}$

The present value of option (c) is $\$18,000 + \$41,168.54$, or \$59,168.54.

PROBLEM 6-5 (Continued)

(d) Time diagram:

$i = 2\frac{1}{2}\%$ per quarter



Formulas:

$$PV-OA = R (PVF-OA_{n,i})$$

$$PV-OA = R (PVF-OA_{n,i})$$

$$PV-OA = \$4,000 (PVF-OA_{12, 2\frac{1}{2}\%})$$

$$PV-OA = \$1,200 (PVF-OA_{37-12, 2\frac{1}{2}\%})$$

$$PV-OA = \$4,000 (10.25776)$$

$$PV-OA = \$1,200 (23.95732 - 10.25776)$$

$$PV-OA = \underline{\underline{\$41,031.04}}$$

$$PV-OA = \underline{\underline{\$16,439.47}}$$

The present value of option (d) is $\$41,031.04 + \$16,439.47$, or \$57,470.51.

Present values:

(a) \$55,000.

(b) \$57,679.89.

(c) \$59,168.54.

(d) \$57,470.51.

Option (c) is the best option, based upon present values alone.

PROBLEM 6-6

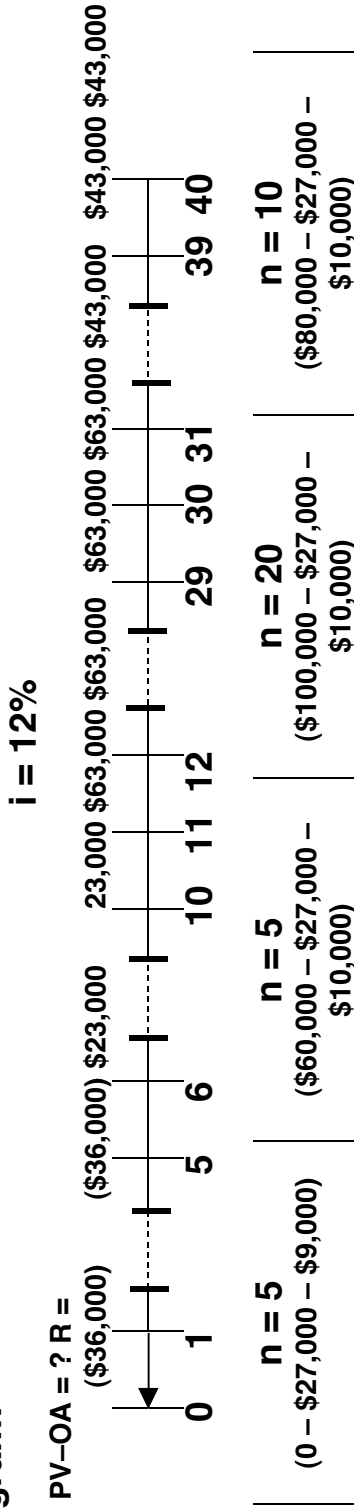
	Cash Flow	Probability	Assessment =	Expected Cash Flow		
	Estimate X		=	Expected Cash Flow		
2004	\$ 2,000	20%	\$	400		
	4,000	60%		2,400		
	5,000	20%		<u>1,000</u>	X PV	
					Factor,	
					n = 1, I = 5%	Present Value
				<u>\$ 3,800</u>	0.95238	<u>\$ 3,619.04</u>
2005	\$ 2,500	30%	\$	750		
	5,000	50%		2,500		
	6,000	20%		<u>1,200</u>	X PV	
					Factor,	
					n = 2, I = 5%	Present Value
				<u>\$ 4,450</u>	0.90703	<u>\$ 4,036.28</u>
2006	\$ 3,000	30%	\$	900		
	6,000	40%		2,400		
	7,000	30%		<u>2,100</u>	X PV	
					Factor,	
					n = 3, I = 5%	Present Value
				<u>\$ 5,400</u>	0.86384	<u>\$ 4,664.74</u>
				Total Estimated Liability		<u>\$ 12,320.06</u>

PROBLEM 6-7

Cash Flow	Probability				
Estimate X	Assessment =	Expected Cash Flow			
2004	\$ 6,000	40%	\$ 2,400		
	8,000	60%	<u>4,800</u>	X PV	
				Factor,	
				n = 1, I = 6%	Present Value
			<u>\$ 7,200</u>	0.9434	<u>\$ 6,792.48</u>
2005	\$ (500)	20%	\$ (100)		
	2,000	60%	1,200		
	3,000	20%	<u>600</u>	X PV	
				Factor,	
				n = 2, I = 6%	Present Value
			<u>\$ 1,700</u>	0.89	<u>\$ 1,513.00</u>
Scrap Value Received at the End of 2005	\$ 500	50%	\$ 250		
	700	50%	<u>350</u>	X PV	
				Factor,	
				n = 2, I = 6%	Present Value
			<u>\$ 600</u>	0.89	<u>\$ 534.00</u>
			Estimated Fair Value		<u>\$ 8,839.48</u>

PROBLEM 6-8

Time diagram:



Formulas:

$PV-OA = R (PVF-OA_{n,i})$	$PV-OA = R (PVF-OA_{n,i})$	$PV-OA = R (PVF-OA_{n,i})$	$PV-OA = R (PVF-OA_{n,i})$
$PV-OA = (\$36,000)(PVF-OA_{5,12\%})$	$PV-OA = \$23,000 (PVF-OA_{10-5, 12\%})$	$PV-OA = \$63,000 (PVF-OA_{30-10, 12\%})$	$PV-OA = \$43,000 (PVF-OA_{40-30, 12\%})$
$PV-OA = (\$36,000)(3.60478)$	$PV-OA = \$23,000 (5.65022 - 3.60478)$	$PV - OA = \$63,000 (8.05518 - 5.65022)$	$PV - OA = \$43,000 (8.24378 - 8.05518)$
$PV-OA = (\$129,772.08)$	$PV-OA = \$23,000 (2.04544)$	$PV-OA = \$63,000 (2.40496)$	$PV-OA = \$43,000 (.18860)$
	$PV-OA = \$47,045.12$	$PV-OA = \$151,512.48$	$PV-OA = \$8,109.80$

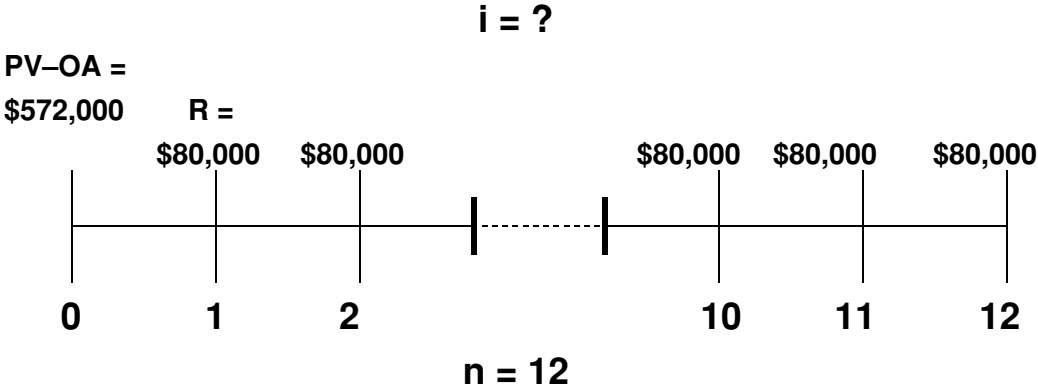
Present value of future net cash inflows:

\$(129,772.08)
47,045.12
151,512.48
8,109.80
<u>\$ 76,895.32</u>

Nicole Bobek should accept no less than \$76,895.32 for her vineyard business.

PROBLEM 6-9

(a) Time diagram (alternative one):



Formulas: $PV-OA = R (PVF-OA_{n,i})$

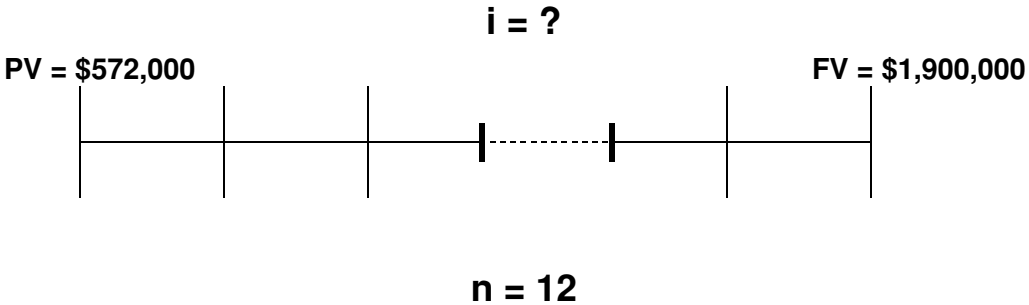
$$\$572,000 = \$80,000 (PVF-OA_{12,i})$$

$$PVF-OA_{12,i} = \$572,000 \div \$80,000$$

$$PVF-OA_{12,i} = \underline{7.15}$$

7.15 is present value of an annuity of \$1 for 12 years discounted at approximately 9%.

Time diagram (alternative two):



PROBLEM 6-9 (Continued)

Formulas: $PV-OA = R (PVF-OA_{n, i})$

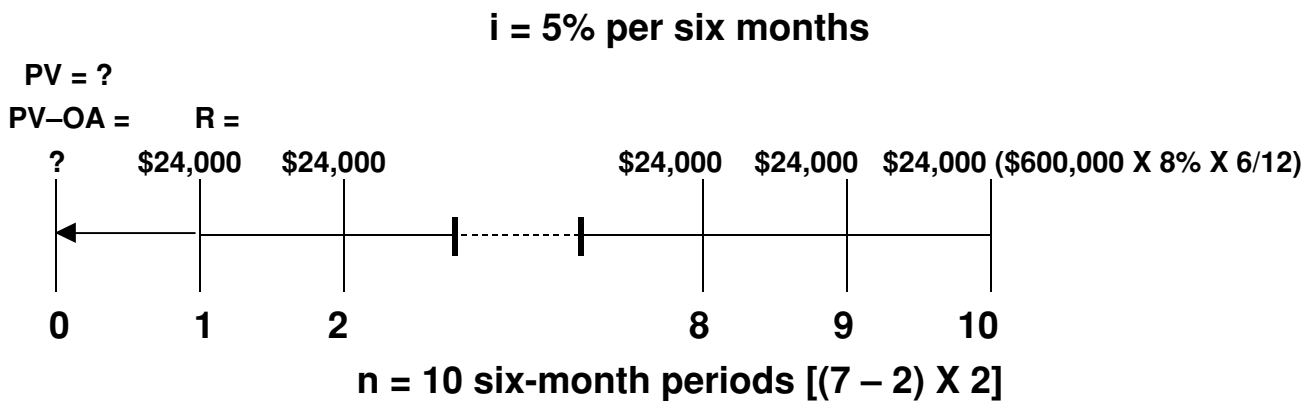
$\$624,150 = \$76,952 (PVF-OA_{10, i})$

$PV-OA_{10, i} = \$624,150 \div \$76,952$

$PV-OA_{10, i} = \underline{8.11090}$

8.11090 is the present value of a 10-period annuity of \$1 discounted at 4%. The interest rate is 4% semiannually, or 8% annually.

(c) Time diagram:



Formulas:

$PV-OA = R (PVF-OA_{n, i})$

$PV = FV (PVF_{n, i})$

$PV-OA = \$24,000 (PVF-OA_{10, 5\%})$

$PV = \$600,000 (PVF_{10, 5\%})$

$PV-OA = \$24,000 (7.72173)$

$PV = \$600,000 (.61391)$

$PV-OA = \underline{\$185,321.52}$

$PV = \underline{\$368,346}$

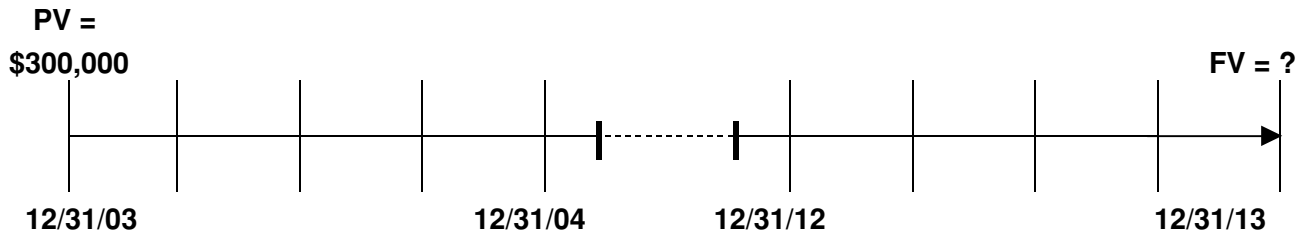
Combined present value (amount received on sale of note):

$\$185,321.52 + \$368,346 = \underline{\$553,667.52}$

PROBLEM 6-9 (Continued)

(d) Time diagram (future value of \$300,000 deposit)

$i = 2\frac{1}{2}\%$ per quarter



$n = 40$ quarters

Formula: $FV = PV (FVF_{n,i})$

$$FV = \$300,000 (FVF_{40, 2\frac{1}{2}\%})$$

$$FV = \$300,000 (2.68506)$$

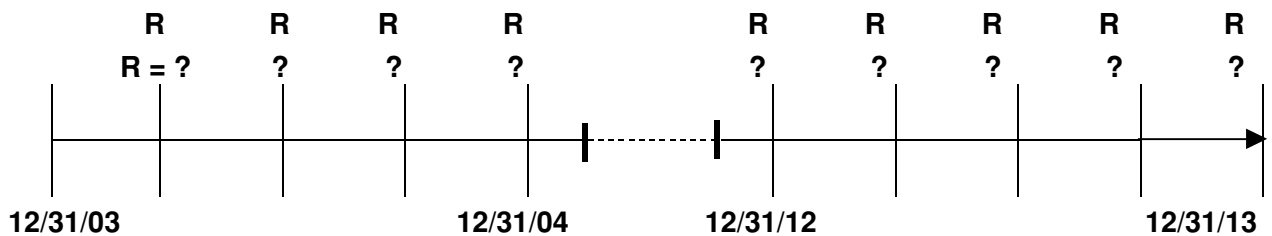
$$FV = \underline{\underline{\$805,518}}$$

Amount to which quarterly deposits must grow:

$$\$1,300,000 - \$805,518 = \underline{\underline{\$494,482.}}$$

Time diagram (future value of quarterly deposits)

$i = 2\frac{1}{2}\%$ per quarter



$n = 40$ quarters

PROBLEM 6-9 (Continued)

Formulas: $FV-OA = R (FVF-OA_{n,i})$

$$\$494,482 = R (FVF-OA_{40, 2\ 1/2\%i})$$

$$\$494,482 = R (67.40255)$$

$$R = \$494,482 \div 67.40255$$

$$R = \underline{\underline{\$7,336.25}}$$

PROBLEM 6-10

Vendor A: \$15,000 payment
 X 6.14457 (PV of ordinary annuity 10%, 10 periods)
 \$ 92,168.55
 + 45,000.00 down payment
 + 10,000.00 maintenance contract
 \$147,168.55 total cost from Vendor A

Vendor B: \$8,000 semiannual payment
 18.01704 (PV of annuity due 5%, 40 periods)
 \$144,136.32

Vendor C: \$1,000
 X 3.79079 (PV of ordinary annuity of 5 periods, 10%)
 \$ 3,790.79 PV of first 5 years of maintenance

 \$2,000 [PV of ordinary annuity 15 per., 10% (7.60608) –
 X 3.81529 PV of ordinary annuity 5 per., 10% (3.79079)]
 \$ 7,630.58 PV of next 10 years of maintenance

 \$3,000 [(PV of ordinary annuity 20 per., 10% (8.51356) –
 X .90748 PV of ordinary annuity 15 per., 10% (7.60608)]
 \$ 2,722.44 PV of last 5 years of maintenance

Total cost of press and maintenance Vendor C:
 \$125,000.00 cash purchase price
 3,790.79 maintenance years 1-5
 7,630.58 maintenance years 6-15
 2,722.44 maintenance years 16-20
 \$139,143.81

The press should be purchased from Vendor C, since the present value of the cash outflows for this option is the lowest of the three options.

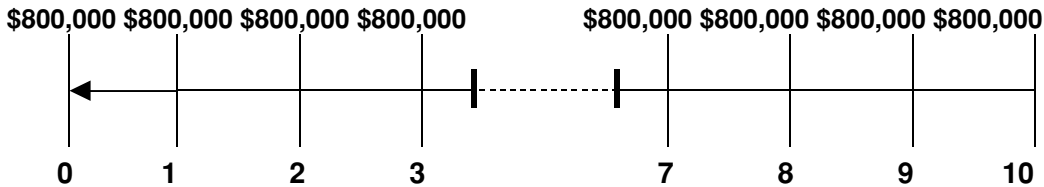
PROBLEM 6-11

(a) Time diagram for the first ten payments:

$i = 10\%$

PV-AD = ?

R =



$n = 10$

Formula for the first ten payments:

$$PV-AD = R (PVF-AD_{n,i})$$

$$PV-AD = \$800,000 (PVF-AD_{10,10\%})$$

$$PV-AD = \$800,000 (6.75902)$$

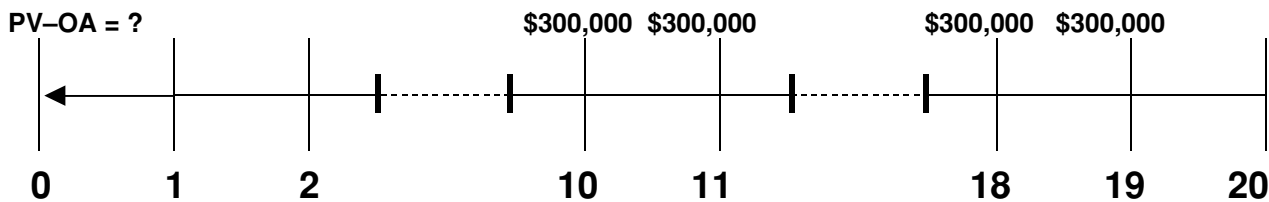
$$PV-OA = \$5,407,216$$

Time diagram for the last ten payments:

$i = 10\%$

PV-OA = ?

R =



$n = 9$

$n = 10$

PROBLEM 6-11 (Continued)

Formula for the last ten payments:

$$PV-OA = R (PVF-OA_{n,i})$$

$$PV-OA = \$300,000 (PVF-OA_{19-9, 10\%})$$

$$PV-OA = \$300,000 (8.36492 - 5.75902)$$

$$PV-OA = \$300,000 (2.6059)$$

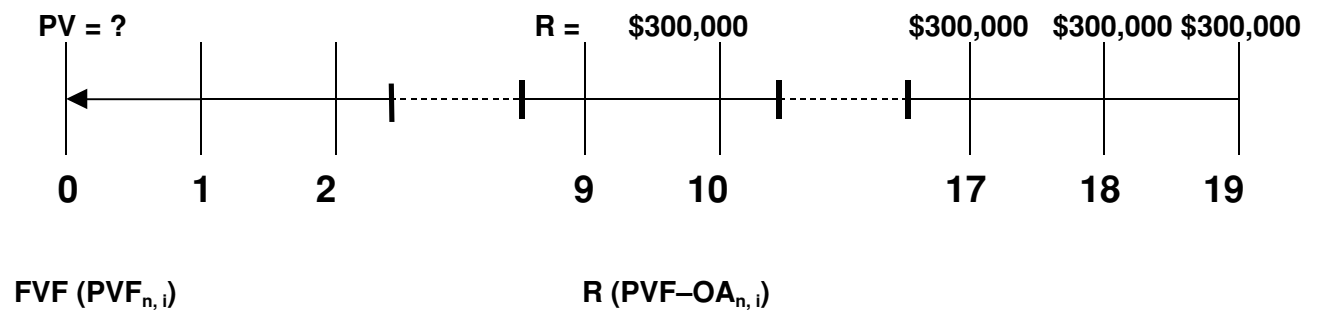
$$PV-OA = \underline{\underline{\$781,770}}$$

Note: The present value of an ordinary annuity is used here, not the present value of an annuity due.

OR

Time diagram for the last ten payments:

$i = 10\%$



PROBLEM 6-11 (Continued)

Formulas for the last ten payments:

(i) Present value of the last ten payments:

$$PV-OA = R (PVF-OA_{n, i})$$

$$PV-OA = \$300,000 (PVF-OA_{10, 10\%})$$

$$PV-OA = \$300,000 (6.14457)$$

$$PV-OA = \underline{\$1,843,371}$$

(ii) Present value of the last ten payments at the beginning of current year:

$$PV = FV (PVF_{n, i})$$

$$PV = \$1,843,371 (PVF_{9, 10\%})$$

$$PV = \$1,843,371 (.42410)$$

$$PV = \underline{\$781,774^*}$$

*\$4 difference due to rounding.

$$\text{Cost for leasing the facilities} \quad \$5,407,216 + \$781,774 = \underline{\$6,188,990}$$

Since the present value of the cost for leasing the facilities, \$6,188,990, is less than the cost for purchasing the facilities, \$7,200,000, Starship Enterprises should lease the facilities.

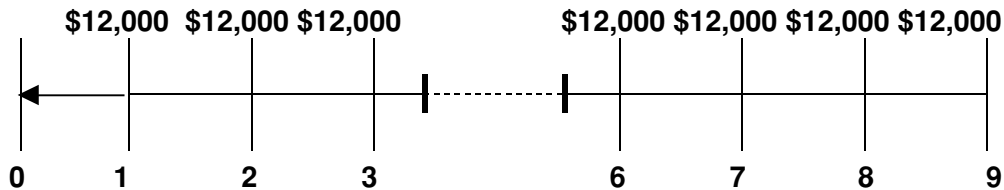
PROBLEM 6-11 (Continued)

(b) Time diagram:

$$i = 11\%$$

PV-OA = ?

R =



$$n = 9$$

Formula: $PV-OA = R (PVF-OA_{n,i})$

$$PV-OA = \$12,000 (PVF-OA_{9,11\%})$$

$$PV-OA = \$12,000 (5.53705)$$

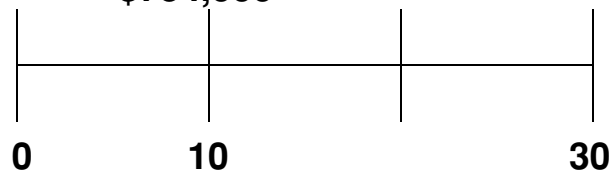
$$PV-OA = \underline{\underline{\$66,444.60}}$$

The fair value of the note is \$66,444.60.

(c) Time diagram:

Amount paid =

\$784,000



Amount paid =

\$800,000

PROBLEM 6-11 (Continued)

$$\text{Cash discount} = \$800,000 (2\%) = \$16,000$$

$$\text{Net payment} = \$800,000 - \$16,000 = \$784,000$$

If the company decides not to take the cash discount, then the company can use the \$784,000 for an additional 20 days. The implied interest rate for postponing the payment can be calculated as follows:

- (i) Implied interest for the period from the end of discount period to the due date:

Cash discount lost if not paid within the discount period

Net payment being postponed

$$= \$16,000/\$784,000$$

$$= 0.0204$$

- (ii) Convert the implied interest rate to annual basis:

$$\text{Daily interest} = 0.0204/20 = 0.00102$$

$$\text{Annual interest} = 0.00102 \times 365 = 37.23\%$$

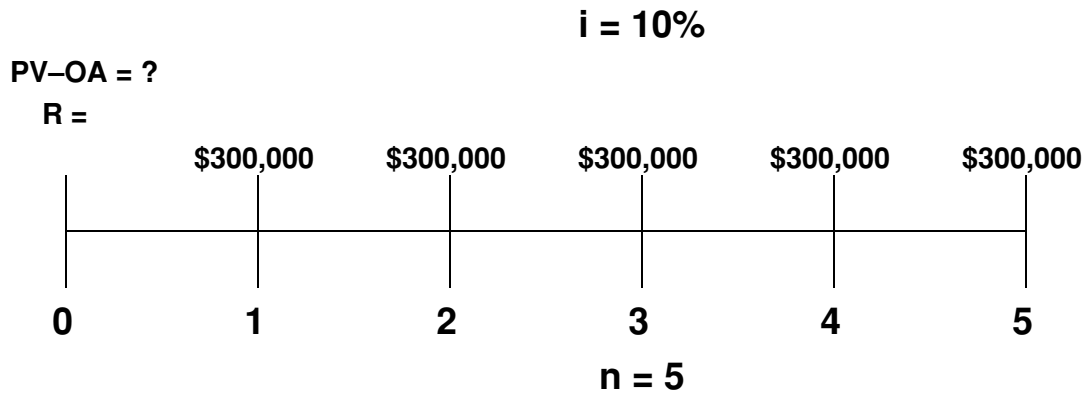
Since Starship's cost of funds, 10%, is less than the implied interest rate for cash discount, 37.23%, it should continue the policy of taking the cash discount.

PROBLEM 6-12

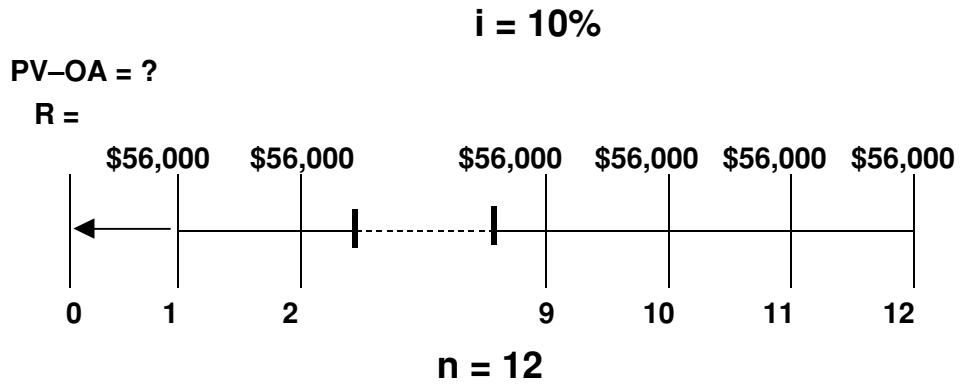
1. Purchase.

Time diagrams:

Installments

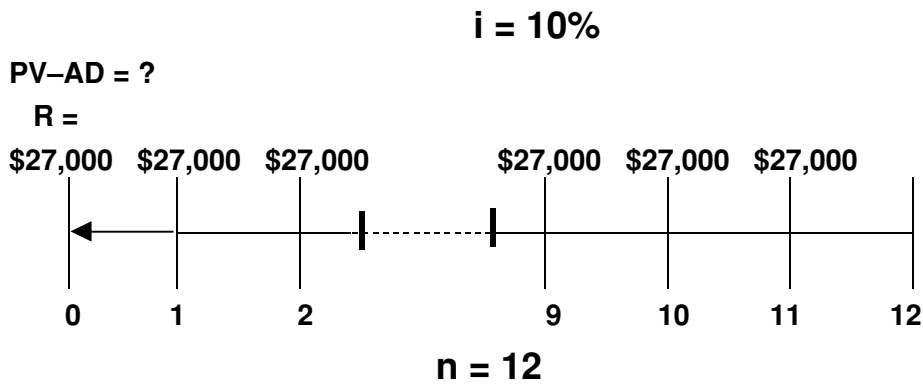


Property taxes and other costs

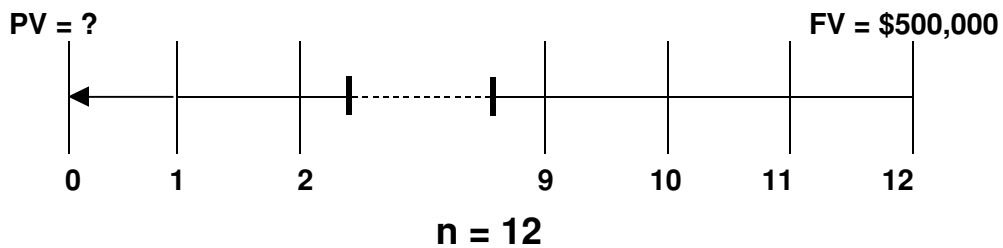


PROBLEM 6-12 (Continued)

Insurance



Salvage Value



Formula for installments:

$$PV-OA = R (PVF-OA_{n,i})$$

$$PV-OA = \$300,000 (PVF-OA_{5,10\%})$$

$$PV-OA = \$300,000 (3.79079)$$

$$PV-OA = \underline{\underline{\$1,137,237}}$$

PROBLEM 6-12 (Continued)

Formula for property taxes and other costs:

$$PV-OA = R (PVF-OA_{n, i})$$

$$PV-OA = \$56,000 (PVF-OA_{12, 10\%})$$

$$PV-OA = \$56,000 (6.81369)$$

$$PV-OA = \underline{\$381,567}$$

Formula for insurance:

$$PV-AD = R (PVF-AD_{n, i})$$

$$PV-AD = \$27,000 (PVF-AD_{12, 10\%})$$

$$PV-AD = \$27,000 (7.49506)$$

$$PV-AD = \underline{\$202,367}$$

Formula for salvage value:

$$PV = FV (PVF_{n, i})$$

$$PV = \$500,000 (PVF_{12, 10\%})$$

$$PV = \$500,000 (0.31863)$$

$$PV = \underline{\$159,315}$$

PROBLEM 6-12 (Continued)

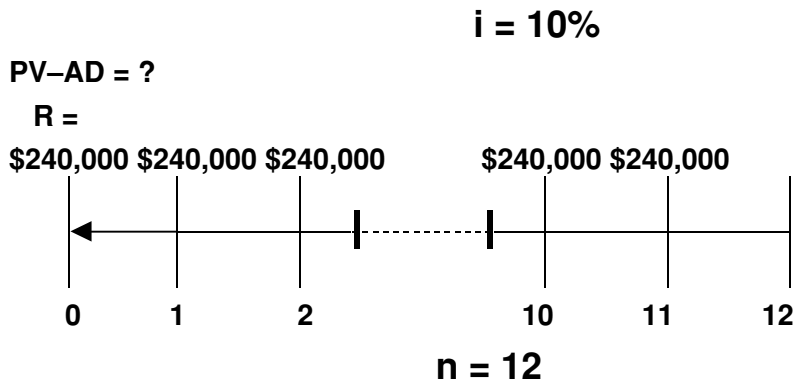
Present value of net purchase costs:

Down payment	\$ 400,000
Installments	1,137,237
Property taxes and other costs	381,567
Insurance	<u>202,367</u>
Total costs	\$2,121,171
Less: Salvage value	<u>159,315</u>
Net costs	<u>\$1,961,856</u>

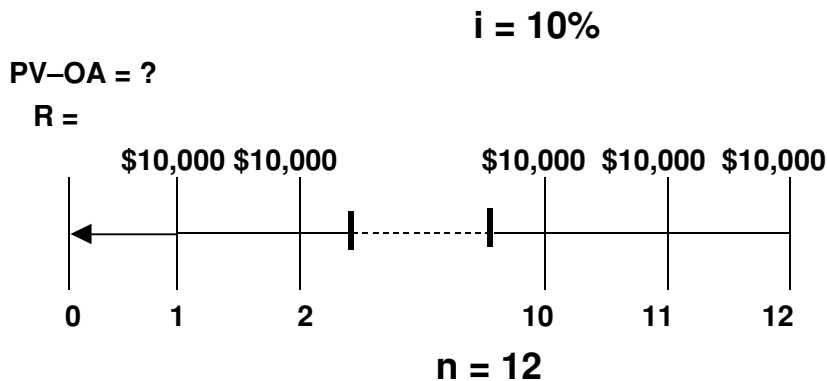
2. Lease.

Time diagrams:

Lease payments



Interest lost on the deposit



PROBLEM 6-12 (Continued)

Formula for lease payments:

$$PV-AD = R (PVF-AD_{n, i})$$

$$PV-AD = \$240,000 (PVF-AD_{12, 10\%})$$

$$PV-AD = \$240,000 (7.49506)$$

$$PV-AD = \underline{\$1,798,814}$$

Formula for interest lost on the deposit:

Interest lost on the deposit per year = \$100,000 (10%) = \$10,000

$$PV-OA = R (PVF-OA_{n, i})$$

$$PV-OA = \$10,000 (PVF-OA_{12, 10\%})$$

$$PV-OA = \$10,000 (6.81369)$$

$$PV-OA = \underline{\$68,137^*}$$

Cost for leasing the facilities = \$1,798,814 + \$68,137 = \$1,866,951

Rijo Inc. should lease the facilities because the present value of the costs for leasing the facilities, \$1,866,951, is less than the present value of the costs for purchasing the facilities, \$1,961,856.

*OR: \$100,000 – (\$100,000 X .31863) = \$68,137

PROBLEM 6-13

(a) Annual retirement benefits.

Maugarite—current salary \$ 40,000.00
X 2.56330 (future value of 1, 24 periods, 4%)
102,532.00 annual salary during last year of
work
X .50 retirement benefit %
\$ 51,266.00 annual retirement benefit

Kenny—current salary \$30,000.00
X 3.11865 (future value of 1, 29 periods, 4%)
93,559.50 annual salary during last year of
work
X .40 retirement benefit %
\$37,424.00 annual retirement benefit

Anita—current salary \$15,000.00
X 2.10685 (future value of 1, 19 periods, 4%)
31,602.75 annual salary during last year of
work
X .40 retirement benefit %
\$12,641.00 annual retirement benefit

Willie—current salary \$15,000.00
X 1.73168 (future value of 1, 14 periods, 4%)
25,975.20 annual salary during last year of
work
X .40 retirement benefit %
\$10,390.00 annual retirement benefit

PROBLEM 6-13 (Continued)

(b) Fund requirements after 15 years of deposits at 12%.

Maugarite will retire 10 years after deposits stop.

\$ 51,266.00	annual plan benefit
	[PV of an annuity due for 30 periods – PV of an
X <u>2.69356</u>	annuity due for 10 periods (9.02181 – 6.32825)]
<u>\$138,088.00</u>	

Kenny will retire 15 years after deposits stop.

\$37,424.00	annual plan benefit
X <u>1.52839</u>	[PV of an annuity due for 35 periods – PV of an
	annuity due for 15 periods (9.15656 – 7.62817)]
<u>\$57,198.00</u>	

Anita will retire 5 years after deposits stop.

\$12,641.00	annual plan benefit
X <u>4.74697</u>	[PV of an annuity due for 25 periods – PV of an
	annuity due for 5 periods (8.78432 – 4.03735)]
<u>\$60,006.00</u>	

Willie will retire the beginning of the year after deposits stop.

\$10,390.00	annual plan benefit
X <u>8.36578</u>	(PV of an annuity due for 20 periods)
<u>\$86,920.00</u>	

PROBLEM 6-13 (Continued)

\$138,088.00 Maugarite

57,198.00 Kenny

60,006.00 Anita

86,920.00 Willie

\$342,212.00 Required fund balance at the end of the 15 years of deposits.

(c) Required annual beginning-of-the-year deposits at 12%:

Deposit X (future value of an annuity due for 15 periods at 12%) = FV

Deposit X (37.27972 X 1.12) = \$342,212.00

Deposit = \$342,212.00 ÷ 41.75329

Deposit = \$8,196.00.

PROBLEM 6-14

- (a) The time value of money would suggest that NET Life's discount rate was substantially higher than First Security's. The actuaries at NET Life are making different assumptions about inflation, employee turnover, life expectancy of the work force, future salary and wage levels, return on pension fund assets, etc. NET Life may operate at lower gross and net margins and it may provide fewer services.
- (b) As the controller of KBS, Qualls assumes a fiduciary responsibility to the present and future retirees of the corporation. As a result, he is responsible for ensuring that the pension assets are adequately funded and are adequately protected from most controllable risks. At the same time, Qualls is responsible for the financial condition of KBS. In other words, he is obligated to find ethical ways of increasing the profits of KBS, even if it means switching pension funds to a less costly plan. At times, Qualls' role to retirees and his role to the corporation can be in conflict, especially if Qualls is a member of a professional group such as CPAs or CMAs.
- (c) If KBS switched to NET Life

The primary beneficiaries of Qualls' decision would be the corporation and its many stockholders by virtue of reducing 8 million dollars of annual pension costs.

The present and future retirees of KBS may be negatively affected by Qualls' decision because the change of losing a future benefit may be increased by virtue of higher risks (as reflected in the discount rate and NET Life's weaker reputation).

If KBS stayed with First Security

In the short run, the primary beneficiaries of Qualls' decision would be the employees and retirees of KBS given the lower risk pension asset plan.

KBS and its many stakeholders could be negatively affected by Qualls' decision to stay with First Security because of the company's inability to trim 8 million dollars from its operating expenses.

***PROBLEM 6-15**

(a)

Inputs:	8	7.25	0	?	70,000
	N	I	PV	PMT	FV

Answer: -6,761.57

(b)

Note—set to begin mode.

Inputs:	25	9.65	0	?	500,000
	N	I	PV	PMT	FV

Answer: -4,886.59

(c)

Inputs:	4	?	-17,000	0	26,000
	N	I	PV	PMT	FV

Answer: 11.21

***PROBLEM 6-16**

(a)

Inputs:	15	?	-150,000	20,000	0
	N	I	PV	PMT	FV

Answer: **10.25**

(b)

Inputs:	7	7.35	?	-16,000	0
	N	I	PV	PMT	FV

Answer: **85,186.34**

(c)

Inputs:	10	10.65	?	16,000	200,000
	N	I	PV	PMT	FV

Answer: **-168,323.64**

***PROBLEM 6-17**

(a)

Inputs:	20	5.25	-180,000	?	0
	<input type="text" value="N"/>	<input type="text" value="I"/>	<input type="text" value="PV"/>	<input type="text" value="PMT"/>	<input type="text" value="FV"/>
Answer:				-14,751.41	

(b)

Note—set payments at 12 per year.

Inputs:	96	9.1	35,000	?	0
	<input type="text" value="N"/>	<input type="text" value="I"/>	<input type="text" value="PV"/>	<input type="text" value="PMT"/>	<input type="text" value="FV"/>
Answer:				-514.57	

(c)

Note—set to begin mode.

Inputs:	5	8.25	8,000	?	0
	<input type="text" value="N"/>	<input type="text" value="I"/>	<input type="text" value="PV"/>	<input type="text" value="PMT"/>	<input type="text" value="FV"/>
Answer:				-1,863.16	

(d)

Note—set back to end mode.

Inputs:	5	8.25	8,000	?	0
	<input type="text" value="N"/>	<input type="text" value="I"/>	<input type="text" value="PV"/>	<input type="text" value="PMT"/>	<input type="text" value="FV"/>
Answer:				-2,016.87	

FINANCIAL REPORTING PROBLEM

(a) 1. Property, plant, and equipment

Property, plant and equipment are recorded at cost, including capitalized interest and internal engineering cost.

For Impairment of long-lived assets, fair value is determined using a discounted cash flow analysis.

2. Long-term and short-term debt

3. Pension and Postretirement Benefit Plans

4. Employee Savings and Stock Ownership Plans

(b) 1. The following rates are disclosed in the accompanying notes:

Debt

Weighted-Average Effective Interest Rate

	Total		Excluding ESOP debt	
	2001	2000	2001	2000
At December 31				
Short-Term	3.98%	6.29%	3.94%	6.30%
Long-Term	3.60%	4.84%	3.15%	4.48%

FINANCIAL REPORTING PROBLEM (Continued)

Benefit Plans

(Millions)	Pension Benefits				Postretirement	
	United States		Interntl.		Benefits	
	2001	2000	2001	2000	2001	2000
Weighted average assumptions						
Discount rate	7.25%	7.50%	5.23%	5.40%	7.25%	7.50%
Expected return on assets	9.00%	9.00%	7.42%	7.14%	9.50%	8.19%

Employee Savings and Stock Ownership Plans

MSOP Assumptions	Annual		Progressive (Reload)	
	2001	2000	2001	2000
Risk-free interest rate	4.8%	6.7%	3.8%	6.3%

2. There are so many different rates for various reasons:
 1. The maturity dates—short-term vs. long-term.
 2. The security or lack of security for debts—mortgages and collateral vs. unsecured loans.
 3. Fixed rates and variable rates.
 4. Issuances of securities at different dates when differing market rates were in effect.
 5. Different risks involved or assumed.
 6. Foreign currency differences—some investments and payables are denominated in different currencies.

FINANCIAL STATEMENT ANALYSIS CASE

- (a) Cash inflows (\$350,000) less cash outflows (\$125,000) = Net cash flows (\$225,000)

$$\$225,000 \times 2.48685 \text{ (PVF-OA}_{3, 10\%}) = \underline{\$559,541.25}$$

- (b) Cash inflows (\$275,000) less cash outflows (\$175,000) = Net cash flows (\$100,000)

$$\$100,000 \times 2.48685 \text{ (PVF-OA}_{3, 10\%}) = \underline{\$248,685}$$

- (c) The estimate of future cash flows is very useful. It provides an understanding of whether the value of gas and oil properties is increasing or decreasing from year to year. Although it is an estimate, it does provide an understanding of the direction of change in value. Also, it can provide useful information to record a write-down of the assets.

RESEARCH CASE 1

- (a) The Form 10-K items include: (1) Business, (2) Properties, (3) Legal Proceedings, (4) Submission of Matters to a Vote of Security Holders, (5) Market for Registrant’s Common Equity and Related Stockholder Matters, (6) Selected Financial Data, (7) Management’s Discussion and Analysis of Financial Condition and Results of Operations, (8) Financial Statements and Supplemental Data, (9) Changes in and Disagreements with Accountants on Accounting and Financial Disclosure, (10) Directors and Executive Officers of the Registrant, (11) Executive Compensation, (12) Security Ownership of Certain Beneficial Owners and Management, (13) Certain Relationships and Related Transactions, and (14) Exhibits, Financial Statement Schedules, and Reports on Form 8-K.**
- (b) If financials are not included, they have been “incorporated by reference” from the annual report to shareholders.**
- (c) Depends on firm selected.**

RESEARCH CASE 2

(a) FASB pronouncements usually provoke some controversy, and Concepts Statements are no exception. The principle objections raised in recent Exposure Drafts are largely the same objections raised when the Board was deliberating Concepts Statement 7. They focus on three areas:

1. Use of the *expected-cash-flow approach* in developing present value measurements
2. Use of *fair value* as the objective for measurements on initial recognition and subsequent fresh-start measurements that employ present value.
3. Inclusion of the *entity's credit standing* in the measurement of its liabilities.

(b) Prior to Concepts Statement 7, many accounting pronouncements used the term *best estimate* to describe the target for estimated cash flows. The term was never defined, but its contexts seem to suggest that an accounting *best estimate* is:

1. Unbiased
2. In a range of possible outcomes, the most likely amount
3. A single amount or point estimate.

RESEARCH CASE 2 (Continued)

Few other professions follow the accounting practice of equating *best estimate* and *most likely*. Statisticians, actuaries, scientists and engineers tend to avoid the term *best estimate*. When they use it, they do so to describe the expected value—the probability-weighted average. But accountants have grown used to the *most-likely* meaning for best estimate.

The Board has long recognized that present values can be changed by altering either cash flows or discount rates. Still, the Board’s early deliberations took the traditional path of developing a best estimate of cash flows and then selecting an appropriate interest rate. Over time, the Board found that a focus on finding the “right” interest rate was unproductive. Any positive interest rate would make the discounted number smaller than the undiscounted best estimate, but there had to be more to present value than that. Moreover, it became clear that intuitions built on contractual cash flows and interest rates don’t always work when applied to assets and liabilities that don’t have contractual amounts and payment dates.

Moving the reference point from contractual to estimated cash flows disrupts the conventional relationships that apply to contractual cash flows. What is the “rate commensurate with the risk” when actual cash flows may be higher or lower than the best estimate? Is the rate higher or lower than risk free? By how much? Does the answer change if the item is a liability rather than an asset? What are the proper cash flows and interest rate when *timing* is uncertain? The traditional approach doesn’t provide ready answers to those questions. In a sense, the drafters of Opinion 21 had it right. *If* a single best-estimate of future cash flows and a single interest rate are the only tools for computing present value, then the technique cannot reasonably be applied to a broader range of measurement problems.

RESEARCH CASE 2 (Continued)

- (c) **The Board was looking at two sets of principles: the elements of economic value and the practical principles of present value.**

The elements of economic value (paragraphs 23 and 39) are:

- a. **An estimate of the future cash flow, or in more complex cases, series of future cash flows at different times**
- b. **Expectations about possible variations in the amount or timing of those cash flows**
- c. **The time value of money, represented by the risk-free rate of interest**
- d. **The price for bearing the uncertainty inherent in the asset or liability**
- e. **Other, sometimes unidentifiable, factors including illiquidity and market imperfections.**

The practical principles, stated simply, are:

- a. **Don't leave anything out. (But see item e.)**
 - b. **Use consistent assumptions and don't count the same thing twice.**
 - c. **Keep your finger off the scale.**
 - d. **Aim for the average of a range, rather than a single most-likely, minimum or maximum amount.**
 - e. **Don't make up what you don't know.**
- (d) **Most accounting estimates use nominal amounts; the estimate includes the effect of inflation. The focus here is on Practical Principle (b)—Use consistent assumptions. If the estimated cash flows do not include inflation, if instead they are real amounts, then the discount rate should not include inflation. Nominal cash flows are discounted at a nominal rate, and real cash flows at a real rate.**

PROFESSIONAL SIMULATION (Continued)

(b)

	A	B	C	D	E	F	G
1							
2	Bond Amortization Schedule						
3							
4	Date	Cash Interest	Interest Expense	Bond Discount Amortization	Carrying Value of Bonds		
5	Year 0				\$92,790.45		
6	Year 1	10,000.00	\$11,134.85	\$1,134.85	93,925.30		
7	Year 2	10,000.00	11,271.04	1,271.04	95,196.34		
8	Year 3	10,000.00	11,423.56	1,423.56	96,619.90		
9	Year 4	10,000.00	11,594.39	1,594.39	98,214.29		
10	Year 5	10,000.00	11,785.71	1,785.71	100,000.00		
11							
12							
13							
14							
15							

The following formula is entered in the cells in this column: =+C6-B6.

The following formula is entered in the cells in this column: =+E5+D6

The following formula is entered in the cells in this column: =+E5*0.12.

CHAPTER 7

Cash and Receivables

ASSIGNMENT CLASSIFICATION TABLE

Topics	Questions	Brief			Problems	Cases
		Exercises	Exercises			
1. Accounting for cash.	1, 2, 3, 4, 21	1	1, 2	1		
2. Accounting for accounts receivable, bad debts, other allowances.	5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15	2, 3, 4, 5	3, 4, 5, 6, 7, 8, 9, 10, 18, 19, 20	2, 3, 4, 5, 6, 10	1, 2, 3, 4, 5, 10, 11	
3. Accounting for notes receivable.	13, 14	6, 7, 8	16, 17	8, 9, 12	6, 7, 8, 9	
4. Assignment and factoring of accounts receivable.	16, 17, 18, 19	9, 10, 11, 12	11, 12, 13, 14, 15, 21	7, 11, 12, 13	6, 8	
5. Analysis of receivables.	20	13	18, 19, 20	1, 12, 13		
*6. Petty cash and bank reconciliations.	22	14, 15, 16	22, 23, 24, 25	12, 13, 14		

*This material is covered in an Appendix to the chapter.

ASSIGNMENT CHARACTERISTICS TABLE

Item	Description	Level of Difficulty	Time (minutes)
E7-1	Determining cash balance.	Moderate	10-15
E7-2	Determine cash balance.	Moderate	10-15
E7-3	Financial statement presentation of receivables.	Simple	10-15
E7-4	Determine ending accounts receivable.	Simple	10-15
E7-5	Record sales gross and net.	Simple	15-20
E7-6	Recording sales transactions.	Moderate	5-10
E7-7	Recording bad debts.	Moderate	10-15
E7-8	Recording bad debts.	Simple	5-10
E7-9	Computing bad debts and preparing journal entries.	Simple	8-10
E7-10	Bad debt reporting.	Simple	10-12
E7-11	Bad debts—aging.	Simple	8-10
E7-12	Journalizing various receivable transactions.	Simple	15-20
E7-13	Assigned accounts receivable.	Simple	10-15
E7-14	Journalizing various receivable transactions.	Simple	15-18
E7-15	Transfer of receivables with recourse.	Simple	10-15
E7-16	Transfer of receivables with recourse.	Moderate	15-20
E7-17	Transfer of receivables without recourse.	Simple	10-15
E7-18	Note transactions at unrealistic interest rates.	Simple	10-15
E7-19	Note receivable with unrealistic interest rates.	Moderate	20-25
E7-20	Analysis of receivables, turnover ratio.	Moderate	10-15
E7-21	Transfer of receivables, turnover ratio.	Moderate	10-15
*E7-22	Petty cash.	Simple	5-10
*E7-23	Petty cash.	Simple	10-15
*E7-24	Bank reconciliation and adjusting entries.	Moderate	15-20
*E7-25	Bank reconciliation and adjusting entries.	Simple	15-20
P7-1	Determine proper cash balance.	Simple	20-25
P7-2	Bad debt reporting.	Moderate	20-25
P7-3	Bad debt reporting—aging.	Moderate	20-30
P7-4	Bad debt reporting.	Moderate	25-35
P7-5	Bad debt reporting.	Moderate	20-30
P7-6	Journalize various accounts receivable transactions.	Moderate	25-35
P7-7	Assigned accounts receivable—journal entries.	Moderate	25-30
P7-8	Notes receivable journal entries.	Moderate	30-35
P7-9	Notes receivable journal entries.	Moderate	30-35
P7-10	Comprehensive receivables problem.	Complex	40-50
P7-11	Income effects of receivables transactions.	Moderate	20-25
*P7-12	Petty cash, bank reconciliation.	Moderate	20-25
*P7-13	Bank reconciliation and adjusting entries.	Moderate	20-30
*P7-14	Bank reconciliation and adjusting entries.	Moderate	20-30

ASSIGNMENT CHARACTERISTICS TABLE (Continued)

C7-1	Bad debt accounting.	Simple	10-15
C7-2	Various receivable accounting issues.	Simple	15-20
C7-3	Bad debt reporting issues.	Moderate	25-30
C7-4	Basic note and accounts receivable transactions.	Moderate	25-30
C7-5	Bad debt reporting issues.	Moderate	25-30
C7-6	Sale of notes receivable.	Moderate	20-25
C7-7	Zero-interest-bearing note receivable.	Moderate	20-30
C7-8	Reporting of notes receivable, interest, and sale of receivables.	Moderate	25-30
C7-9	Accounting for non-interest-bearing note.	Moderate	25-30
C7-10	Receivables management.	Moderate	25-30
C7-11	Bad debt reporting, ethics.	Moderate	25-30

ANSWERS TO QUESTIONS

1. Cash normally consists of coins and currency on hand, bank deposits, and various kinds of orders for cash such as bank checks, money orders, travelers' checks, demand bills of exchange, bank drafts, and cashiers' checks. Balances on deposit in banks which are subject to immediate withdrawal are properly included in cash. Money market funds that provide checking account privileges may be classified as cash. There is some question as to whether deposits not subject to immediate withdrawal are properly included in cash or whether they should be set out separately. Savings accounts, time certificates of deposit, and time deposits fall in this latter category. Unless restrictions on these kinds of deposits are such that they cannot be converted (withdrawn) within one year or the operating cycle of the entity, whichever is longer, they are properly classified as current assets. At the same time, they may well be presented separately from other cash and the restrictions as to convertibility reported.
2.

<p>(a) Cash</p> <p>(b) Trading securities.</p> <p>(c) Temporary investments.</p> <p>(d) Accounts receivable.</p> <p>(e) Accounts receivable, a loss if uncollectible.</p> <p>(f) Other assets if not expendable, cash if expendable for goods and services in the foreign country.</p> <p>(g) Receivable if collection expected within one year; otherwise, other asset.</p>	<p>(h) Investments, possibly other assets.</p> <p>(i) Cash.</p> <p>(j) Trading securities.</p> <p>(k) Cash.</p> <p>(l) Cash.</p> <p>(m) Postage expense, or prepaid expense, or office supplies inventory.</p> <p>(n) Receivable from employee if the company is to be reimbursed; otherwise, prepaid expense.</p>
--	--
3. A compensating balance is that portion of any cash deposit maintained by an enterprise which constitutes support for existing borrowing arrangements with a lending institution.

A compensating balance representing a legally restricted deposit held against short-term borrowing arrangements should be stated separately among the cash and cash-equivalent items. A restricted deposit held as a compensating balance against long-term borrowing arrangements should be separately classified as a noncurrent asset in either the investments or other assets section.
4. Restricted cash for debt redemption would be reported in the long-term asset section, probably in the investments section. Another alternative is the other assets section. Given that the debt is long term, the restricted cash should also be reported as long term.
5. The seller normally uses trade discounts to avoid frequent changes in its catalogs, to quote different prices for different quantities purchased, and to hide the true invoice price from competitors. Trade discounts are not recorded in the accounts because the price finally quoted is generally an accurate statement of the fair market value of the product on that date. In addition, no subsequent changes can occur to affect this value from an accounting standpoint. With a cash discount, the buyer receives a choice and events subsequent to the original transaction dictate that additional entries may be needed.
6. Two methods of recording accounts receivable are:
 1. Record receivables and sales gross.
 2. Record receivables and sales net.

Questions Chapter 7 (Continued)

The latter method is desirable from a theoretical standpoint because it values the receivable at its net realizable value. In addition, recording the sales at net provides a better assessment of the revenue that was earned from the sale of the product. If the purchasing company fails to take the discount, then the company should reflect this amount as income. The gross method for receivables and sales is used in practice normally because it is expedient and its use does not generally have any significant effect on the presentation of the financial statements.

7. The basic problems that relate to the valuation of receivables are (1) the determination of the face value of the receivable, (2) the probability of future collection of the receivable, and (3) the length of time the receivable will be outstanding. The determination of the face value of the receivable is a function of the trade discount, cash discount, and certain allowance accounts such as the Allowance for Sales Returns and Allowances.
8. The theoretical superiority of the allowance method over the direct write-off method of accounting for bad debts is two-fold. First, since revenue is considered to be recognized at the point of sale on the assumption that the resulting receivables are valid liquid assets merely awaiting collection, periodic income will be overstated to the extent of any receivables that eventually become uncollectible. The proper matching of revenue and expense requires that gross sales in the income statement be partially offset by a charge to bad debt expense that is based on an estimate of the receivables arising from gross sales that will not be converted into cash.

Second, accounts receivable on the balance sheet should be stated at their estimated net realizable value. The allowance method accomplishes this by deducting from gross receivables the allowance for doubtful accounts. The latter is derived from the charges for bad debt expense on the income statement.

9. **The percentage-of-sales method.** Under this method bad debt expense is debited and the allowance for doubtful accounts is credited with a percentage of the current year's credit or total sales. The rate is determined by reference to the relationship between prior years' credit or total sales and actual bad debts arising therefrom. Consideration should also be given to changes in credit policy and current economic conditions. Although the rate should theoretically be based on and applied to credit sales, the use of total sales is acceptable if the ratio of credit sales to total sales does not vary significantly from year to year.

The percentage-of-sales method of providing for estimated uncollectible receivables is intended to charge bad debt expense to the period in which the corresponding sales are recorded and is, therefore, designed for the preparation of a fair income statement. Due to annually insignificant but cumulatively significant errors in the experience rate which may result in either an excessive or inadequate balance in the allowance account, however, this method may not accurately report accounts receivable in the balance sheet at their estimated net realizable value. This can be prevented by periodically reviewing and, if necessary, adjusting the balance in the allowance account. The materiality of any such adjustment would govern its treatment for reporting purposes.

The necessity of such adjustments of the allowance account indicates that bad debt expenses have not been accurately matched against related sales. Further, even when the experience rate does not result in an excessive or inadequate balance in the allowance account, this method tends to have a smoothing effect on reported periodic income due to year-to-year differences between the amounts of bad debt write-offs and estimated bad debts.

Questions Chapter 7 (Continued)

The aging method. With this method each year's debit to the expense account and credit to the valuation account are determined by an evaluation of the collectibility of open accounts receivable at the close of the year. An analysis of the accounts according to their due dates is the usual procedure. For each of the age categories established in the analysis, average percentage rates may be developed on the basis of past experience and applied to the accounts in the respective age categories. This method may also utilize individual analysis for some accounts, especially those that are considerably past due, in arriving at estimated uncollectible receivables. On the basis of the foregoing analysis the balance in the valuation account is then adjusted to the amount estimated to be uncollectible.

This method of providing for uncollectible accounts is quite accurate for purposes of reporting accounts receivable at their estimated net realizable value in the balance sheet. From the standpoint of the income statement, however, the aging method may not match accurately bad debt expenses with the sales which caused them because the charge to bad debt expense is not based on sales. The accuracy of both the charge to bad debt expense and the reported value of receivables depends on the current estimate of uncollectible accounts. The accuracy of the expense charge, however, is additionally dependent upon the timing of actual write-offs.

10. A major part of accounting is the measurement of financial data. Changes in values should be recognized as soon as they are measurable in objective terms in order for accounting to provide useful information on a periodic basis.

The very existence of accounts receivable is based on the decision that a credit sale is an objective indication that revenue should be recognized. The alternative is to wait until the debt is paid in cash. If revenue is to be recognized and an asset recorded at the time of a credit sale, the need for fairness in the statements requires that both expenses and the asset be adjusted for the estimated amounts of the asset that experience indicates will not be collected.

The argument may be persuasive that the evidence supporting write-offs permits a more accurate decision than that which supports the allowance method. The latter method, however, is "objective" in the sense in which accountants use the term and is justified by the need for fair presentation of receivables and income. The direct write-off method is not wholly objective; it requires the use of judgment in determining when an account has become uncollectible.

11. Because estimation of the allowance requires judgment, management could either over-estimate or under-estimate the amount of uncollectible accounts depending on whether a higher or lower earnings number is desired. For example, Sun Trust bank (referred to in the text) was having a very profitable year. By over-estimating the amount of bad debts, Sun Trust could record a higher allowance and expense, thereby reducing income in the current year. In a subsequent year, when earnings are low, they could under-estimate the allowance, record less expense and get a boost to earnings.
12. The receivable due from Kishwaukee Company should be written off to an appropriately named loss account and reported in the income statement as part of income from operations. Note that the profession specifically excludes write-offs of receivables from being extraordinary. In this case, classification as an unusual item would seem appropriate. The loss may properly be reduced by the portion of the allowance for doubtful accounts at the end of the preceding year that was allocable to the Kishwaukee Company account.

Estimates for doubtful accounts are based on a firm's prior bad debt experience with due consideration given to changes in credit policy and forecasted general or industry business conditions.

Questions Chapter 7 (Continued)

The purpose of the allowance method is to anticipate only that amount of bad debt expense which can be reasonably forecasted in the normal course of events; it is not intended to anticipate bad debt losses which are abnormal and nonrecurring in nature.

13. If the direct write-off method is used, the only alternative is to debit Cash and credit a revenue account entitled Uncollectible Amounts Recovered. If the allowance method is used, then the accountant may debit Accounts Receivable and credit the Allowance for Doubtful Accounts. An entry is then made to credit the customer's account and debit Cash upon receipt of the remittance.

14. The journal entry on John Singer's books would be:

Notes Receivable	1,000,000	
Discount on Notes Receivable		380,000
Sales Revenue		620,000*

*Assumes that seller is a dealer in this property. If not, the property might be credited, and a loss on sale of \$70,000 would be recognized.

15. Imputed interest is the interest ascribed or attributed to a situation or circumstance which is void of a stated or otherwise appropriate interest factor. Imputed interest is the result of a process of interest rate estimation called imputation.

An interest rate is imputed for notes receivable when (1) no interest rate is stated for the transaction, or (2) the stated interest rate is unreasonable, or (3) the stated face amount of the note is materially different from the current cash price for the same or similar items or from the current market value of the debt instrument.

In imputing an appropriate interest rate, consideration should be given to the prevailing interest rates for similar instruments of issuers with similar credit ratings, the collateral, and restrictive covenants.

16. A company might sell receivables because money is tight and access to normal credit is not available or prohibitively expensive. Also, a company may have to sell its receivables, instead of borrowing, to avoid violating existing lending arrangements. In addition, billing and collection of receivables are often time-consuming and costly.
17. A financial components approach is used when receivables are sold but there is continuing involvement by the seller in the receivable. Examples of continuing involvement are recourse provisions or continuing rights to service the receivable. A transfer of receivables should be recorded as a sale when the following three conditions are met:
- (a) The transferred asset has been isolated from the transferor (put beyond reach of the transferor and its creditors).
 - (b) The transferees have obtained the right to pledge or exchange either the transferred assets or beneficial interests in the transferred assets.
 - (c) The transferor does not maintain effective control over the transferred assets through an agreement to repurchase or redeem them before their maturity.
18. Recourse is a guarantee from Hale that if any of the sold receivables are uncollectible, Hale will pay the factor for the amount of the uncollectible account. This recourse obligation represents continuing involvement by Hale after the sale. Under the financial components model, the estimated fair value of the recourse obligation will be reported as a liability on Hale's balance sheet.

Questions Chapter 7 (Continued)

19. Several acceptable solutions are possible depending upon assumptions made as to whether certain items are collectible within the operating cycle or not. The following illustrates one possibility:

Current Assets

Accounts receivable—Trade (of which accounts in the amount of \$75,000 have been assigned as security for loans payable) (\$523,000 + \$75,000)	\$598,000
Federal income tax refund receivable	15,500
Advance payments on purchases	61,000
Investments	
Advance to subsidiary	45,500
Other Assets	
Travel advance to employee	22,000
Notes receivable past due plus accrued interest	27,000

20. The accounts receivable turnover ratio is computed by dividing net sales by average net receivables outstanding during the year. This ratio is used to assess the liquidity of the receivables; it measures the number of times, on average, receivables are collected during the period. It provides some indication of the quality of the receivables and how successful the company is in collecting its outstanding receivables.
21. Because the restricted cash can not be used by Hawthorn to meet current obligations, it should not be reported as a current asset – it should be reported in investments or other assets. Thus, although this item has cash in its label, it should not be reflected in liquidity measures, such as the current or acid-test ratios.
- *22. (1) The **general checking account** is the principal bank account of most companies and frequently the only bank account of small companies. Most if not all transactions are cycled through the general checking account, either directly or on an imprest basis.
- (2) **Imprest bank accounts** are used to disburse cash (checks) for a specific purpose, such as dividends, payroll, commissions, or travel expenses. Money is deposited in the imprest fund from the general fund in an amount necessary to cover a specific group of disbursements.
- (3) **Lockbox accounts** are local post office boxes to which a multilocation company instructs its customers to mail remittances. A local bank is authorized to empty the box daily and credit the company's accounts for collections.

SOLUTIONS TO BRIEF EXERCISES

BRIEF EXERCISE 7-1

Cash in bank—savings account	\$63,000
Cash on hand	9,300
Checking account balance	<u>17,000</u>
Cash to be reported	<u>\$89,300</u>

BRIEF EXERCISE 7-2

June 1	Accounts Receivable	40,000	
	Sales		40,000
June 12	Cash	38,800*	
	Sales Discounts	1,200	
	Accounts Receivable		40,000

*\$40,000 – (\$40,000 X .03) = \$38,800

BRIEF EXERCISE 7-3

June 1	Accounts Receivable	38,800*	
	Sales		38,800
June 12	Cash	38,800	
	Accounts Receivable		38,800

*\$40,000 – (\$40,000 X .03) = \$38,800

BRIEF EXERCISE 7-4

Bad Debt Expense	24,000	
Allowance for Doubtful Accounts		24,000
(\$1,200,000 X 2% = \$24,000)		

BRIEF EXERCISE 7-5

(a) Bad Debt Expense.....	22,900	
Allowance for Doubtful Accounts.....		22,900
[(10% X \$250,000) – \$2,100]		

(b) Bad Debt Expense.....	22,500	
Allowance for Doubtful Accounts.....		22,500
(\$24,600 – \$2,100)		

BRIEF EXERCISE 7-6

11/1/04	Notes Receivable	20,000	
	Sales		20,000

12/31/04	Interest Receivable	400	
	Interest Revenue		400
	(\$20,000 X 12% X 2/12)		

5/1/05	Cash	21,200	
	Notes Receivable.....		20,000
	Interest Receivable.....		400
	Interest Revenue		800
	(\$800 = \$20,000 X 12% X 4/12)		

BRIEF EXERCISE 7-7

Notes Receivable	20,000	
Discount on Notes Receivable.....		4,056
Cash.....		15,944
Discount on Notes Receivable	1,913	
Interest Revenue.....		1,913
(\$15,944 X 12%)		
Discount on Notes Receivable	2,143	
Interest Revenue.....		2,143
(\$17,857 X 12%)		
Cash	20,000	
Notes Receivable.....		20,000

BRIEF EXERCISE 7-8

Akira, Inc.

Cash	680,000	
Finance Charge	20,000	
Notes Payable		700,000

Alisia National Bank

Notes Receivable	700,000	
Cash.....		680,000
Financing Revenue		20,000

BRIEF EXERCISE 7-9

CRC

Cash	92,000	
Due from Factor	6,000*	
Loss on Sale of Receivables	2,000**	
Accounts Receivable		100,000

*6% X \$100,000 = \$6,000

**2% X \$100,000 = \$2,000

Fredrick

Accounts Receivable	100,000	
Due to CRC		6,000
Financing Revenue		2,000
Cash.....		92,000

BRIEF EXERCISE 7-10

CRC

Cash	92,000	
Due from Factor	6,000*	
Loss on Sale of Receivables	9,500**	
Accounts Receivable		100,000
Recourse Obligation		7,500

*6% X \$100,000 = \$6,000

**2% X \$100,000 = \$2,000 + \$7,500

BRIEF EXERCISE 7-11

Sale

Cash \$200,000 – [\$200,000 X (.05 + .04)]	182,000	
Due from Factor (\$200,000 X .04)	8,000	
Loss on Sale of Receivables	18,000*	
Accounts Receivable		200,000
Recourse Obligation		8,000

*(\$200,000 X .05) + \$8,000

BRIEF EXERCISE 7-12

The entry for the sale now would be:

Cash \$200,000 – [(\$200,000 X (.05 + .04))]	182,000	
Due from Factor (\$200,000 X .04)	8,000	
Loss on Sale of Receivables	14,000*	
Account Receivable		200,000
Recourse Obligation		4,000

*(\$200,000 X .05) + \$4,000

This lower estimate for the recourse obligation reduces the amount of the loss—this will result in higher income in the year of the sale. Keyser’s liabilities will be lower by \$4,000.

BRIEF EXERCISE 7-13

The accounts receivable turnover ratio is computed as follows:

$$\frac{\text{Net Sales}}{\text{Average Trade Receivables (net)}} = \frac{\$5,416,000,000}{\frac{\$277,300,000 + \$337,800,000}{2}} = 17.61 \text{ times}$$

BRIEF EXERCISE 7-13 (Continued)

The average collection period for accounts receivable in days is

$$\frac{365 \text{ days}}{\text{Accounts Receivable Turnover}} = \frac{365}{17.61} = 20.73 \text{ days}$$

As indicated from these ratios, General Mills' accounts receivable turnover ratio is excellent.

***BRIEF EXERCISE 7-14**

Petty Cash	200	
Cash.....		200
Office Supplies	94	
Miscellaneous Expense	87	
Cash Over and Short.....	2	
Cash.....		183

***BRIEF EXERCISE 7-15**

- (a) Added to balance per bank statement (1)
- (b) Added to balance per books (3)
- (c) Deducted from balance per books (4)
- (d) Deducted from balance per bank statement (2)
- (e) Deducted from balance per books (4)

***BRIEF EXERCISE 7-16**

(b)	Cash	31	
	Interest Revenue		31
(c)	Office Expense—Bank Charges	25	
	Cash		25
(e)	Accounts Receivable	377	
	Cash		377

SOLUTIONS TO EXERCISES

EXERCISE 7-1 (10-15 minutes)

(a) Cash includes the following:

1. Commercial savings account— First National Bank of Yojimbo	\$ 600,000
1. Commercial checking account— First National Bank of Yojimbo	900,000
2. Money market fund—Volante	5,000,000
5. Petty cash	1,000
12. Currency and coin on hand	<u>7,700</u>
Cash reported on December 31, 2003, balance sheet	<u>\$6,508,700</u>

(b) Other items classified as follows:

3. Travel advances (reimbursed by employee)* should be reported as receivable—employee in the amount of \$180,000.
4. Cash restricted in the amount of \$1,500,000 for the retirement of long-term debt should be reported as a noncurrent asset identified as “Cash restricted for retirement of long-term debt.”
6. An IOU from Marianne Koch should be reported as a receivable in the amount of \$190,000.
7. The bank overdraft of \$110,000 should be reported as a current liability.**
8. Certificates of deposits of \$500,000 each should be classified as temporary investments.
9. Postdated check of \$125,000 should be reported as an accounts receivable.
10. The compensating balance requirement does not affect the balance in cash. A note disclosure indicating the arrangement and the amounts involved should be described in the notes.

EXERCISE 7-1 (Continued)

11. Commercial paper should be reported as temporary investments.

*If not reimbursed, charge to prepaid expense.

**If cash is present in another account in the same bank on which the overdraft occurred, offsetting is required.

EXERCISE 7-2 (10-15 minutes)

1. Cash balance of \$925,000. Only the checking account balance should be reported as cash. The certificates of deposit of \$1,400,000 should be reported as a temporary investment, the cash advance to subsidiary of \$980,000 should be reported as a receivable, and the utility deposit of \$180 should be identified as a receivable from the gas company.

2. Cash balance is \$584,650 computed as follows:

Checking account balance	\$600,000
Overdraft	(17,000)
Petty cash	300
Coin and currency	<u>1,350</u>
	<u>\$584,650</u>

Cash held in a bond sinking fund is restricted. Assuming that the bonds are noncurrent, the restricted cash is also reported as noncurrent.

EXERCISE 7-2 (Continued)

3. Cash balance is \$599,800 computed as follows:

Checking account balance	\$590,000
Certified check from customer	<u>9,800</u>
	<u>\$599,800</u>

The postdated check of \$11,000 should be reported as a receivable. Cash restricted due to compensating balance should be described in a note indicating the type of arrangement and amount. Postage stamps on hand are reported as part of office supplies inventory or prepaid expenses.

4. Cash balance is \$85,000 computed as follows:

Checking account balance	\$37,000
Money market mutual fund	<u>48,000</u>
	<u>\$85,000</u>

The NSF check received from customer should be reported as a receivable.

5. Cash balance is \$700,900 computed as follows:

Checking account balance	\$700,000
Cash advance received from customer	<u>900</u>
	<u>\$700,900</u>

Cash restricted for future plant expansion of \$500,000 should be reported as a noncurrent asset. Short-term treasury bills of \$180,000 should be reported as a temporary investment. Cash advance received from customer of \$900 should also be reported as a liability; cash advance of \$7,000 to company executive should be reported as a receivable; refundable deposit of \$26,000 paid to federal government should be reported as a receivable.

EXERCISE 7-3 (10-15 minutes)

Current assets

Accounts receivable

Customers

Accounts (of which accounts in the amount of \$40,000 have been pledged as security for a bank loan)	\$79,000		
Installment accounts collectible due in 2004	23,000		
Installment accounts collectible due after December 31, 2004*	<u>34,000</u>	\$136,000	
Other** (\$2,640 + \$1,500)		<u>4,140</u>	\$140,140

Investments

Advance to subsidiary company			81,000
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*This classification assumes that these receivables are collectible within the operating cycle of the business.

**These items could be separately classified, if considered material.

EXERCISE 7-4 (10-15 minutes)

Computation of cost of goods sold:

Merchandise purchased	\$320,000
Less: Ending inventory	<u>90,000</u>
Cost of goods sold	<u>\$230,000</u>

EXERCISE 7-4 (Continued)

Selling price = 1.4 (Cost of good sold)
= 1.4 (\$230,000)
= \$322,000

Sales on account	\$322,000	
Less collections	<u>198,000</u>	
Uncollected balance	124,000	
Balance per ledger	<u>82,000</u>	
Apparent shortage	<u>\$ 42,000</u>	—Enough for a new car

EXERCISE 7-5 (15-20 minutes)

(a) (1) June 3 Accounts Receivable—Chester

Arthur.....	3,000	
Sales.....		3,000
June 12 Cash	2,940	
Sales Discounts (\$3,000 X 2%)	60	
Accounts Receivable—Chester		
Arthur		3,000

(2) June 3 Accounts Receivable—Chester

Arthur.....	2,940	
Sales (\$3,000 X 98%).....		2,940
June 12 Cash	2,940	
Accounts Receivable—Chester		
Arthur		2,940

EXERCISE 7-5 (Continued)

(b)	July 29	Cash	3,000	
		 Accounts Receivable—Chester		
		 Arthur.....		2,940
		 Sales Discounts Forfeited		60

(Note to instructor: Sales discounts forfeited could have been recognized at the time the discount period lapsed. The company, however, would probably not record this forfeiture until final cash settlement.)

EXERCISE 7-6 (5-10 minutes)

July 1	Accounts Receivable	20,000	
	 Sales		20,000
July 10	Cash	19,400*	
	 Sales Discounts	600	
	 Accounts Receivable		20,000
*\$20,000 – (.03 X \$20,000) = <u>\$19,400</u>			
July 17	Accounts Receivable	200,000	
	 Sales		200,000
July 30	Cash	200,000	
	 Accounts Receivable		200,000

EXERCISE 7-7 (10-15 minutes)

(a) Bad Debt Expense.....	8,500	
Allowance for Doubtful Accounts.....		8,500*

***.01 X (\$900,000 – \$50,000) = \$8,500**

(b) Bad Debt Expense.....	3,000	
Allowance for Doubtful Accounts.....		3,000*

***Step 1: .05 X \$100,000 = \$5,000 (desired credit balance in Allowance account)**

Step 2: \$5,000 – \$2,000 = \$3,000 (required credit entry to bring allowance account to \$5,000 credit balance)

EXERCISE 7-8 (15-20 minutes)

(a) Allowance for Doubtful Accounts	6,000	
Accounts Receivable.....		6,000

(b) Accounts Receivable	\$800,000
Less: Allowance for Doubtful Accounts	<u>40,000</u>
Net realizable value	<u>\$760,000</u>

(c) Accounts Receivable	\$794,000
Less: Allowance for Doubtful Accounts	<u>34,000</u>
Net realizable value	<u>\$760,000</u>

EXERCISE 7-9 (8-10 minutes)

(a)	Bad Debt Expense.....	5,350	
	Allowance for Doubtful Accounts		5,350
	[($\$90,000 \times 4\%$) + $\$1,750$]		
(b)	Bad Debt Expense.....	6,800	
	Allowance for Doubtful Accounts		6,800
	($\$680,000 \times 1\%$)		

EXERCISE 7-10 (10-12 minutes)

(a) The direct write-off approach is not theoretically justifiable even though required for income tax purposes. Direct write-off does not match expenses with revenues of the period, nor does it result in receivables being stated at estimated realizable value on the balance sheet.

(b) Bad Debt Expense – 2% of Sales = $\$44,000$ ($\$2,200,000 \times 2\%$)
Bad Debt Expense – Direct Write-Off = $\$31,330$ ($\$7,800 + \$6,700 + \$7,000 + \$9,830$)

Net income would be $\$12,670$ ($\$44,000 - \$31,330$) lower under the percentage-of-sales approach.

EXERCISE 7-11 (8-10 minutes)

Balance 1/1 (\$700 – \$155)	\$ 545	Over one year
4/12 (#2412) (\$1,710 – \$1,000 – \$300*)	410	Eight months and 19 days
11/18 (#5681) (\$2,000 – \$1,250)	<u>750</u>	One month and 13 days
	<u>\$1,705</u>	

*($\$790 - \490)

Inasmuch as later invoices have been paid in full, all three of these amounts should be investigated in order to determine why Hopkins Co. has not paid them. The amounts in the beginning balance and #2412 should be of particular concern.

EXERCISE 7-12 (15-20 minutes)

7/1	Accounts Receivable—Harding Co.....	7,840	
	Sales (\$8,000 X 98%)		7,840
7/5	Cash [\$9,000 X (1 – .09)]	8,190	
	Loss on Sale of Receivables.....	810	
	Accounts Receivable (\$9,000 X 98%) ..		8,820
	Sales Discounts Forfeited.....		180

(Note: It is possible that the company already recorded the Sales Discounts Forfeited. In this case, the credit to Accounts Receivable would be for \$9,000. The same point applies to the next entry as well.)

EXERCISE 7-12 (Continued)

7/9	Accounts Receivable.....	180	
	Sales Discounts Forfeited		
	(\$9,000 – 2%).....		180
	Cash	5,640	
	Finance Charge (\$6,000 X 6%).....	360	
	Notes Payable		6,000
7/11	Account Receivable—Harding Co.....	160	
	Sales Discounts Forfeited		160
	(\$8,000 X 2%		

This entry may be made at the next time financial statements are prepared. Also, it may occur on 12/29 when Harding Company's receivable is adjusted.

12/29	Allowance for Doubtful Accounts	7,200	
	Accounts Receivable—Harding Co. ...		7,200
	[\$7,840 + \$160 = \$8,000;		
	\$8,000 – (10% X \$8,000) = \$7,200]		

EXERCISE 7-13 (10-15 minutes)

(a)	Cash	192,000	
	Finance Charge	8,000*	
	Notes Payable		200,000

*2% X \$400,000 = \$8,000

(b)	Cash	350,000	
	Accounts Receivable.....		350,000

EXERCISE 7-13 (Continued)

(c) Notes Payable.....	200,000	
Interest Expense	5,000*	
Cash		205,000

*10% X \$200,000 3/12 = \$5,000

EXERCISE 7-14 (15-18 minutes)

1. Cash	22,500	
Loss on Sale of Receivables.....	2,500	
(\$25,000 X 10%)		
Accounts Receivable.....		25,000
2. Cash	50,600	
Finance Charge (\$55,000 X 8%)	4,400	
Notes Payable		55,000
3. Bad Debt Expense.....	6,220	
Allowance for Doubtful Accounts		6,220
[((\$82,000 X 5%) + \$2,120)]		
4. Bad Debt Expense.....	6,450	
Allowance for Doubtful Accounts		6,450
(\$430,000 X 1.5%)		

EXERCISE 7-15 (10-15 minutes)

Computation of net proceeds:

Cash received	\$160,000
Less: Recourse liability	<u>1,000</u>
Net proceeds	<u>\$159,000</u>

EXERCISE 7-15 (Continued)

Computation of gain or loss:

Carrying value	\$200,000
Net proceeds	<u>159,000</u>
Loss on sale of receivables	<u>\$ 41,000</u>

The following journal entry would be made:

Cash.....	\$160,000	
Loss on Sale of Receivables.....	41,000	
Recourse Liability		1,000
Accounts Receivable		200,000

EXERCISE 7-16 (15-20 minutes)

(a) To be recorded as a sale, all of the following conditions would be met:

- (1) The transferred asset has been isolated from the transferor (put beyond reach of the transferor and its creditors).
- (2) The transferees have obtained the right to pledge or to exchange either the transferred assets or beneficial interests in the transferred assets.
- (3) The transferor does not maintain effective control over the transferred assets through an agreement to repurchase or redeem them before their maturity.

(b) Computation of net proceeds:

Cash received (\$175,000 X 94%)	\$164,500	
Due from factor (\$175,000 X 4%)	<u>7,000</u>	\$171,500
Less: Recourse obligation		<u>2,000</u>
Net proceeds		<u>\$169,500</u>

EXERCISE 7-16 (Continued)

Computation of gain or loss:

Carrying value	\$175,000
Net proceeds	<u>169,500</u>
Loss on sale of receivables	<u>\$ 5,500</u>

The following journal entry would be made:

Cash	\$164,500	
Due from Factor	7,000	
Loss on Sale of Receivables.....	5,500	
Recourse Liability		2,000
Accounts Receivable.....		175,000

EXERCISE 7-17 (10-15 minutes)

(a) July 1

Cash	283,500	
Due from Factor.....	12,000	
Loss on Sale of Receivables.....	4,500	
Accounts Receivable.....		300,000
(\$12,000 = 4% X \$300,000)		
(\$4,500 = 1 1/2% X \$300,000)		

(b) July 1

Accounts Receivable	300,000	
Due to JFK Corp.....		12,000
Financing Revenue.....		4,500
Cash		283,500

EXERCISE 7-18 (10-15 minutes)

1.	7/1/04	Notes Receivable.....	1,101,460.00
		Discount on Notes Receivable ...	401,460.00
		Land.....	590,000.00
		Gain on Sale of Land	110,000.00
		[((\$700,000 – \$590,000)	
		\$1,101,460	Face value of note
		<u>.63552</u>	Present value of 1 for 4 periods at 12%
		\$ 700,000	Present value of note
		<u>1,101,460</u>	Face value of note
		<u>\$ 401,460</u>	Discount on note receivable]
2.	7/1/04	Notes Receivable.....	400,000.00
		Discount on Notes Receivable ...	178,836.32
		Service Revenue	221,163.68

Computation of the present value of the note:

Maturity value	400,000.00
Present value of \$400,000 due in 8 years at 12%—\$400,000	
X .40388	\$161,552.00
Present value of \$12,000 payable annually for 8 years at 12% annually—\$12,000	
X 4.96764	<u>59,611.68</u>
Present value of the note and interest	<u>221,163.68</u>
Discount	<u>\$178,836.32</u>

EXERCISE 7-19 (20-25 minutes)

(a) Notes Receivable	200,000	
Discount on Notes Receivable		48,772
Consulting Revenue		151,228*

*Computation of present value of note:

PV of \$200,000 due in 2 years at 15%

\$200,000 X .75614 = \$151,228

(b) Discount on Notes Receivable	22,684.20	
Interest Revenue		22,684.20*

*\$151,228 X 15% = \$22,684.20

(c) Discount on Notes Receivable	26,087.80*	
Interest Revenue		26,087.80

*\$48,772.00 – \$22,684.20

Cash	200,000	
Notes Receivable		200,000

EXERCISE 7-20 (10-15 minutes)

(a) Cash	85,000	
Accounts Receivable	100,000	
Sales		185,000

Cash	70,000	
Accounts Receivable		70,000

EXERCISE 7-20 (Continued)

(b) **Accounts Receivable Turnover** = Sales ÷ Average Receivables
= \$185,000 ÷ (\$15,000 + \$45,000*)/2
= 6.17 times (or about 59 days)

*(\$15,000 + \$100,000 – \$70,000)

(c) Jones Company's turnover ratio has declined. That is, relative to sales, their receivables are being collected at a slower rate – 6.17 < 13.65 or 59 days to collect versus 27 days in the prior year. This could be a bad trend for future liquidity, if customers continue to pay slowly. Jones may want to consider offering early payment (cash) discounts.

EXERCISE 7-21

(a) Cash [\$25,000 X (1 – .09)].....	22,750	
Due from Factor	1,250	
Loss on Sale of Accounts Receivable.....	2,200*	
Accounts Receivable		25,000
Recourse Obligation		1,200

*(\$25,000 X .04) + \$1,200

(b) **Accounts Receivable Turnover** = Sales ÷ Average Receivables
= \$185,000 ÷ (\$15,000 + \$20,000*)/2
= 10.57 times (or about 35 days)

*(\$15,000 + \$100,000 – \$70,000 – \$25,000)

With the factoring transaction, Jones Company's turnover ratio still declines but by less than in the earlier example. While Jones' collections have slowed, by factoring the receivables, Jones is able to convert them to cash. The cost of this approach to converting receivables to cash is captured in the Loss on the Sale of Accounts Receivable account.

***EXERCISE 7-22 (5-10 minutes)**

1. April 1 Petty Cash.....	200	
Cash		200
2. April 10 Cash Over and Short	2	
Transportation-In.....	60	
Supplies Expense.....	25	
Postage Expense.....	33	
Receivables—Employees.....	17	
Miscellaneous Expense.....	36	
Cash (\$200 – \$27).....		173
3. April 20 Petty Cash.....	100	
Cash		100

***EXERCISE 7-23 (10-15 minutes)**

Cash Over and Short	6.45	
Accounts Receivable—Employees	74.00	
(\$40.00 + \$34.00)		
Nick Fonzarelli, Drawings*	170.00	
Repair Expense	14.35	
Postage Expense (\$20.00 – \$2.90).....	17.10	
Office Supplies	2.90	
Cash (\$300.00 – \$15.20)		284.80

***Note: This debit might also be made to the capital account.**

***EXERCISE 7-24 (15-20 minutes)**

**(a) Angela Lansbury Company
Bank Reconciliation
July 31**

Balance per bank statement, July 31		\$8,650
Add: Deposits in transit		2,350^a
Deduct: Outstanding checks		<u>(1,100)^b</u>
Correct cash balance, July 31		<u>\$9,900</u>
Balance per books, July 31		\$9,250
Add: Collection of note		1,000
Less: Bank service charge	\$ 15	
NSF check	<u>335</u>	<u>(350)</u>
Corrected cash balance, July 31		<u>\$9,900</u>

^aComputation of deposits in transit

Deposits per books		\$5,810
Deposits per bank in July	\$5,000	
Less deposits in transit (June)	<u>(1,540)</u>	
Deposits mailed and received in July		<u>(3,460)</u>
Deposits in transit, July 31		<u>\$2,350</u>

^bComputation of outstanding checks

Checks written per books		\$3,100
Checks cleared by bank in July	\$4,000	
Less outstanding checks (June)*	<u>(2,000)</u>	
Checks written and cleared in July		<u>(2,000)</u>
Outstanding checks, July 31		<u>\$1,100</u>

***Assumed to clear bank in July**

EXERCISE 7-24 (Continued)

(b) Cash	650	
Office Expenses—Bank Service Charge.....	15	
Accounts Receivable	335	
Notes Receivable		1,000

***EXERCISE 7-25 (15-20 minutes)**

(a) **Logan Bruno Company**
Bank Reconciliation, August 31, 2004
County National Bank

Balance per bank statement, August 31, 2004		\$ 8,089
Add: Cash on hand	\$ 310	
Deposits in transit	<u>3,800</u>	<u>4,110</u>
		12,199
Deduct: Outstanding checks		<u>1,050</u>
Correct cash balance		<u>\$11,149</u>

Balance per books, August 31, 2004		
(\$10,050 + \$35,000 – \$34,903)		\$10,147
Add: Note (\$1,000) and interest (\$40) collected		<u>1,040</u>
		11,187
Deduct: Bank service charges	\$ 20	
Understated check for supplies	<u>18</u>	<u>38</u>
Correct cash balance		<u>\$11,149</u>

(b) Cash	1,040	
Notes Receivable		1,000
Interest Revenue		40
(To record collection of note and interest)		

EXERCISE 7-25 (Continued)

Office Expense—Bank Service Charges	20	
 Cash		20
 (To record August bank charges)		
Supplies Expense	18	
 Cash		18
 (To record error in recording check for supplies)		

- (c) The corrected cash balance of \$11,149 would be reported in the August 31, 2004, balance sheet.**

TIME AND PURPOSE OF PROBLEMS

Problem 7-1 (Time 20-25 minutes)

Purpose—to provide the student with an understanding of the balance sheet effect that occurs when the cash book is left open. In addition, the student is asked to adjust the present balance sheet to an adjusted balance sheet, reflecting the proper cash presentation.

Problem 7-2 (Time 20-25 minutes)

Purpose—to provide the student with the opportunity to determine various items related to accounts receivable and the allowance for doubtful accounts. Five independent situations are provided.

Problem 7-3 (Time 20-30 minutes)

Purpose—to provide a short problem related to the aging of accounts receivable. The appropriate balance for doubtful accounts must be determined. In addition, the manner of reporting accounts receivable on the balance sheet must be shown.

Problem 7-4 (Time 25-35 minutes)

Purpose—the student prepares an analysis of the changes in the allowance for doubtful accounts and supports it with an aging schedule. The adjusting entry is prepared.

Problem 7-5 (Time 20-30 minutes)

Purpose—a short problem that must be analyzed to make the necessary correcting entries. It is not a pencil-pushing problem but requires a great deal of conceptualization. A good problem for indicating the types of adjustments that might occur in the receivables area.

Problem 7-6 (Time 25-35 minutes)

Purpose—to provide the student with a number of business transactions related to notes and accounts receivable that must be journalized. Recoveries of receivables, and write-offs are the types of transactions presented. The problem provides a good cross section of a number of accounting issues related to receivables.

Problem 7-7 (Time 25-30 minutes)

Purpose—a short problem involving the reporting problems associated with the assignment of accounts receivable. The student is required to make the journal entries necessary to record an assignment. A straightforward problem.

Problem 7-8 (Time 30-35 minutes)

Purpose—to provide the student with a problem in the imputation of interest. Our hope is that a good conceptual discussion can develop, related to the proper accounting for this item.

Problem 7-9 (Time 30-35 minutes)

Purpose—to provide the student with another problem requiring the imputation of interest. The student is required to make journal entries on a series of dates when note installments are collected. A relatively straightforward problem.

Problem 7-10 (Time 40-50 minutes)

Purpose—the student calculates the current portion of long-term receivables and interest receivable, and prepares the long-term receivables section of the balance sheet. Then the student prepares a schedule showing interest income. The problem includes interest-bearing and noninterest-bearing notes and an installment receivable.

Problem 7-11 (Time 20-25 minutes)

Purpose—to provide the student the opportunity to record the sales of receivables with and without recourse and determine the income effects.

Time and Purpose of Problems (Continued)

***Problem 7-12** (Time 20-25 minutes)

Purpose—to provide the student the opportunity to do the accounting for petty cash and a bank reconciliation.

***Problem 7-13** (Time 20-30 minutes)

Purpose—to provide the student with the opportunity to prepare a bank reconciliation which is reconciled to a corrected balance. Traditional types of adjustments are presented. Journal entries are also required.

***Problem 7-14** (Time 20-30 minutes)

Purpose—to provide the student with the opportunity to prepare a bank reconciliation which goes from balance per bank to corrected balance. Traditional types of adjustments are presented such as deposits in transit, bank service charges, NSF checks, and so on. Journal entries are also required.

SOLUTIONS TO PROBLEMS

PROBLEM 7-1

(a) December 31

Accounts Receivable	18,000	
Sales	22,000	
Cash		39,640
Sales Discounts		360

December 31

Cash	26,200	
Purchase Discounts	250	
Accounts Payable		26,450

(b)

	<u>Per balance sheet</u>	<u>After Adjustment</u>
Current assets		
Cash (\$39,000 – \$39,640 + \$26,200)	\$ 39,000	\$ 25,560
Receivables (\$42,000 + \$18,000)	42,000	60,000
Inventories	<u>67,000</u>	<u>67,000</u>
Total	<u>148,000</u>	<u>152,560</u>
Current liabilities		
Accounts payable (\$45,000 + \$26,450)	45,000	71,450
Other current liabilities	<u>14,200</u>	<u>14,200</u>
Total	<u>59,200</u>	<u>85,650</u>
Working capital	<u>\$ 88,800</u>	<u>\$ 66,910</u>
Current ratio	2.5 to 1	1.78 to 1

PROBLEM 7-2

1.	Net Sales	\$1,500,000
	Percentage	<u>1 1/2%</u>
	Bad debt expense	<u>\$ 22,500</u>
2.	Accounts receivable	\$1,750,000
	Amounts estimated to be uncollectible	<u>(180,000)</u>
	Net realizable value	<u>\$1,570,000</u>
3.	Allowance for doubtful accounts 1/1/03	\$17,000
	Establishment of accounts written off in prior years	8,000
	Customer accounts written off in 2003	(30,000)
	Bad debt expense for 2003 (\$2,100,000 X 3%)	<u>63,000</u>
	Allowance for doubtful accounts 12/31/03	<u>\$58,000</u>
4.	Bad debt expense for 2003	\$84,000
	Customer accounts written off as uncollectible during 2003	<u>(24,000)</u>
	Allowance for doubtful accounts balance 12/31/03	<u>\$60,000</u>
	Accounts receivable, net of allowance for doubtful accounts	\$ 950,000
	Allowance for doubtful accounts balance 12/31/03	<u>60,000</u>
	Accounts receivable, before deducting allowance for doubtful accounts	<u>\$1,010,000</u>
5.	Accounts receivable	\$410,000
	Percentage	<u>3%</u>
	Bad debt expense, before adjustment	12,300
	Allowance for doubtful accounts (debit balance)	<u>14,000</u>
	Bad debt expense, as adjusted	<u>\$ 26,300</u>

PROBLEM 7-3

- (a) The Allowance for Doubtful Accounts should have a balance of \$50,000 at year-end. The supporting calculations are shown below:

Days Account Outstanding	Amount	Expected Percentage Uncollectible	Estimated Uncollectible
0-15 days	\$300,000	.02	\$ 6,000
16-30 days	100,000	.10	10,000
31-45 days	80,000	.15	12,000
46-60 days	40,000	.25	10,000
61-75 days	20,000	.60	<u>12,000</u>
Balance for Allowance for Doubtful Accounts			<u>\$50,000</u>

The accounts which have been outstanding over 75 days (\$15,000) and have zero probability of collection would be written off immediately and not be considered when determining the proper amount for the Allowance for Doubtful Accounts.

(b) Accounts receivable	\$540,000
Less: Allowance for doubtful accounts	<u>50,000</u>
Accounts receivable (net)	<u>\$490,000</u>

- (c) The year-end bad debt adjustment would decrease before-tax income \$30,000 as computed below:

Estimated amount required in the Allowance for Doubtful Accounts	\$50,000
Balance in the account after write-off of uncollectible accounts but before adjustment (\$35,000 – \$15,000)	<u>20,000</u>
Required charge to expense	<u>\$30,000</u>

PROBLEM 7-4

(a) **Blaise Pascal Corporation**
Analysis of Changes in the
Allowance for Doubtful Account
For the Year Ended December 31, 2004

Balance at January 1, 2004	\$154,000
Provision for doubtful accounts (\$9,000,000 X 2%)	180,000
Recovery in 2004 of bad debts written off previously	<u>15,000</u>
	349,000
Deduct write-offs for 2004 (\$95,000 + \$60,000)	<u>155,000</u>
Balance at December 31, 2004 before change in accounting estimate	194,000
Increase due to change in accounting estimate during 2004 (\$254,600 – \$194,000)	<u>60,600</u>
Balance at December 31, 2004 adjusted (Schedule 1)	<u>\$254,600</u>

Schedule 1

Computation of Allowance for Doubtful Accounts
at December 31, 2004

Aging category	Balance	%	Doubtful accounts
Nov – Dec 2004	\$1,080,000	2	\$ 21,600
July – Oct	650,000	10	65,000
Jan – Jun	420,000	25	105,000
Prior to 1/1/04	90,000 (a)	70	<u>63,000</u>
			<u>\$254,600</u>

(a) \$150,000 – \$60,000

PROBLEM 7-4 (Continued)

(b)

Account	Dr.	Cr.
Bad Debt Expense.....	\$60,600	
 Allowance for Doubtful Accounts.....		\$60,600
 (To increase the allowance for doubtful accounts at December 31, 2004, resulting from a change in accounting estimate)		

PROBLEM 7-5

Bad Debt Expense	2,740.00	
Accounts Receivable		2,740.00
(To correct bad debt expense and write off accounts receivable)		
Accounts Receivable	4,840.00	
Advance on Sales Contract.....		4,840.00
(To reclassify credit balance in accounts receivable)		
Allowance for Doubtful Accounts.....	4,200.00	
Accounts Receivable		4,200.00
(To write off \$4,200 of uncollectible accounts)		

(Note to instructor: Many students will not make this entry at this point. Because \$4,200 is totally uncollectible, a write-off immediately seems most appropriate. The remainder of the solution therefore assumes that the student made this entry.)

Allowance for Doubtful Accounts.....	7,374.64	
Bad Debt Expense.....		7,374.64
(To reduce allowance for doubtful account balance)		
Balance (\$8,750 + \$18,620 – \$2,740 – \$4,200)	\$20,430.00	
Corrected balance (see below)	<u>13,055.36</u>	
Adjustment	<u>\$ 7,374.64</u>	

Age	Balance	Aging Schedule	
Under 60 days	\$172,342	1%	\$ 1,723.42
61-90 days	141,330 (\$136,490 + \$4,840)	3%	4,239.90
91-120 days	37,184 (\$39,924 – \$2,740)	6%	2,231.04
Over 120 days	19,444 (\$23,644 – \$4,200)	25%	4,861.00
			<u>\$13,055.36</u>

PROBLEM 7-5 (Continued)

If the student did not make the entry to record the \$4,200 write-off earlier, the following would change in the problem. After the adjusting entry for \$7,374.64, an entry would have to be made to write off the \$4,200.

Balance (\$8,750 + \$18,620 – \$2,740)	\$24,630.00
Corrected balance (see below)	<u>17,255.36</u>
Adjustment	<u>\$ 7,374.64</u>

<u>Age</u>	<u>Balance</u>	<u>Aging Schedule</u>	
Under 60 days	\$172,342	1%	\$ 1,723.42
61-90 days	141,330	3%	4,239.90
91-120 days	37,184	6%	2,231.04
Over 120 days	23,644	—	<u>9,061.00*</u>
			<u>\$17,255.36</u>

*\$4,200 + (25% X \$19,444)

PROBLEM 7-6

-1-

Cash	137,200	
Sales Discounts	800	
Accounts Receivable		138,000

-2-

Accounts Receivable.....	6,300	
Allowance for Doubtful Accounts		6,300
Cash	6,300	
Accounts Receivable		6,300

-3-

Allowance for Doubtful Accounts.....	17,500	
Accounts Receivable		17,500

-4-

Bad Debt Expense	13,900	
Allowance for Doubtful Accounts		13,900
(\$17,300 + \$6,300 – \$17,500 = \$6,100; \$20,000 – \$6,100 = \$13,900)		

PROBLEM 7-7

July 1, 2004

Cash	79,500	
Finance Charge (.005 X \$100,000).....	500	
Notes Payable (80% X \$100,000)		80,000

July 31, 2004

Notes Payable	55,000	
Accounts Receivable		55,000
Finance Charge.....	225	
Finance Charge Payable (.005 X \$45,000)		225

August 31, 2004

Notes Payable	25,000	
Cash*	4,700	
Finance Charge		
(.005 X [\$100,000 – \$55,000 – \$30,000])	75	
Finance Charge Payable	225	
Accounts Receivable		30,000

*Total cash collection	\$30,000	
Less finance charge payable (from previous entry)	(225)	
finance charge (current month)		
[(.005 X (\$100,000 – \$55,000 – \$30,000)]	(75)	
note payable (balance) (\$80,000 – \$55,000)	(25,000)	
Cash collected	<u>\$ 4,700</u>	

PROBLEM 7-8

10/1/04	Notes Receivable	100,000	
	Sales		100,000

12/31/04	Interest Receivable	3,000*	
	Interest Revenue		3,000

*\$100,000 X .12 X 3/12 = \$3,000

10/1/05	Cash	12,000*	
	Interest Receivable		3,000
	Interest Revenue.....		9,000

*\$100,000 X .12 = \$12,000

12/31/05	Interest Receivable	3,000*	
	Interest Revenue.....		3,000

*\$100,000 X .12 X 3/12 = \$3,000

10/1/06	Cash	12,000*	
	Interest Receivable		3,000
	Interest Revenue.....		9,000

	Cash	100,000	
	Notes Receivable		100,000

Note: Entries at 10/1/05 and 10/1/06 assumes reversing entries were not made on January 1, 2005 and January 1, 2006.

PROBLEM 7-9

(a) December 31, 2004

Cash	36,000.00	
Notes Receivable	72,000.00	
Discount on Notes Receivable		16,155.90
Revenue from Services		91,844.10
To record revenue at the present value of the note plus the immediate cash payment:		
PV of \$18,000 annuity @ 11% for 4 years (\$18,000 X 3.10245)		
	\$55,844.10	
Down payment	<u>36,000.00</u>	
Capitalized value of services		<u>\$91,844.10</u>

(b) December 31, 2005

Cash	18,000.00	
Notes Receivable		18,000.00
Discount on Notes Receivable	6,142.85	
Interest Revenue		6,142.85

Schedule of Note Discount Amortization

Date	Debit, Discount on Notes Receivable/ Credit, Interest Revenue	Installment Paid	Present Value of Note
12/31/04	—	—	\$55,844.10
12/31/05	\$6,142.85 ^a	\$18,000.00	43,986.95 ^b
12/31/06	4,838.56	18,000.00	30,825.51
12/31/07	3,390.81	18,000.00	16,216.32
12/31/08	1,783.68 ^c	18,000.00	—

^a\$6,142.85 = \$55,844.10 X 11%

^b\$43,986.95 = \$55,844.10 + \$6,142.85 – \$18,000.00

^cRounded by \$.12

PROBLEM 7-9 (Continued)

(c)	December 31, 2006		
	Cash	18,000.00	
	Notes Receivable.....		18,000.00
	Discount on Notes Receivable	4,838.56	
	Interest Revenue		4,838.56
(d)	December 31, 2007		
	Cash	18,000.00	
	Notes Receivable.....		18,000.00
	Discount on Notes Receivable	3,390.81	
	Interest Revenue		3,390.81
(e)	December 31, 2008		
	Cash	18,000.00	
	Notes Receivable.....		18,000.00
	Discount on Notes Receivable	1,783.68	
	Interest Revenue		1,783.68

PROBLEM 7-10

(a) **Connecticut Inc.**
Long-Term Receivables Section of Balance Sheet
December 31, 2004

9% note receivable from sale of division, due in annual installments of \$600,000 to May 1, 2006, less current installment	\$600,000	(1)
8% note receivable from officer, due Dec. 31, 2006, collateralized by 10,000 shares of Connecticut, Inc., common stock with a fair value of \$450,000	400,000	
Noninterest-bearing note from sale of patent, net of 12% imputed interest, due April 1, 2006	173,746	(2)
Installment contract receivable, due in annual installments of \$45,125 to July 1, 2008, less current installment	<u>110,275</u>	(3)
Total long-term receivables	<u>\$1,284,021</u>	

(b) **Connecticut Inc.**
Selected Balance Sheet Balances
December 31, 2004

Current portion of long-term receivables:		
Note receivable from sale of division	\$600,000	(1)
Installment contract receivable	<u>29,725</u>	(3)
Total current portion of long-term receivables	<u>\$629,725</u>	
 Accrued interest receivable:		
Note receivable from sale of division	72,000	(4)
Installment contract receivable	<u>7,700</u>	(5)
Total accrued interest receivable	<u>\$79,700</u>	

PROBLEM 7-10 (Continued)

(c) Connecticut Inc.
Interest Revenue from Long-Term Receivables
For the Year Ended December 31, 2004

Interest income:		
Note receivable from sale of division	\$126,000	(6)
Note receivable from sale of patent	14,346	(2)
Note receivable from officer	32,000	(7)
Installment contract receivable from sale of land	<u>7,700</u>	(5)
Total interest income for year ended 12/31/04	<u>\$180,046</u>	

Explanation of Amounts

(1) Long-term Portion of 9% Note Receivable at 12/31/04	
Face amount, 5/1/03	\$1,800,000
Less installment received 5/1/04	<u>600,000</u>
Balance, 12/31/04	1,200,000
Less installment due 5/1/05	<u>600,000</u>
Long-term portion, 12/31/04	<u>\$ 600,000</u>
(2) Noninterest-bearing Note, Net of Imputed Interest at 12/31/04	
Face amount 4/1/04	\$ 200,000
Less imputed interest	
[\$200,000 – (\$200,000 X 0.797)]	<u>40,600</u>
Balance, 4/1/04	159,400
Add interest earned to 12/31/04	
(\$159,400 X 12% X 9/12)	<u>14,346</u>
Balance, 12/31/04	<u>\$ 173,746</u>

PROBLEM 7-10 (Continued)

(3) Long-term Portion of Installment Contract

Receivable at 12/31/04

Contract selling price, 7/1/04	\$ 200,000
Less down payment, 7/1/04	<u>60,000</u>
Balance, 12/31/04	140,000
Less installment due, 7/1/05	
[\$45,125 – (\$140,000 X 11%)]	<u>29,725</u>
Long-term portion, 12/31/04	<u>\$ 110,275</u>

(4) Accrued Interest—Note Receivable, Sale of Division at 12/31/04

Interest accrued from 5/1 to 12/31/04	
(\$1,200,000 X 9% X 8/12)	<u>\$ 72,000</u>

(5) Accrued Interest—Installment Contract at 12/31/04

Interest accrued from 7/1 to 12/31/04	
(\$140,000 X 11% X 1/2)	<u>\$ 7,700</u>

(6) Interest Revenue—Note Receivable, Sale of Division, for 2004

Interest earned from 1/1 to 5/1/2004	
(\$1,800,000 X 9% X 4/12)	\$ 54,000
Interest earned from 5/1 to 12/31/04	
(\$1,200,000 X 9% X 8/12)	<u>72,000</u>
Interest income	<u>\$ 126,000</u>

(7) Interest Revenue—Note Receivable, Officer, for 2004

Interest earned 1/1/ to 12/31/04	
(\$400,000 X 8%)	<u>\$ 32,000</u>

PROBLEM 7-11

Radisson Company
INCOME STATEMENT EFFECT
For the year ended December 31, 2003

Expenses resulting from accounts receivable assigned (Schedule 1)	\$22,920
Loss resulting from accounts receivable sold (\$300,000 – \$250,000)	<u>50,000</u>
Total expenses	<u>\$72,920</u>

Schedule 1

**Computation of Expense
for Accounts Receivable Assigned**

Assignment expense:		
Accounts receivable assigned	\$400,000	
	<u>X 85%</u>	
Advance by Stickum Finance Company	340,000	
	<u>X 3%</u>	\$10,200
Interest expense		<u>12,720</u>
Total expenses		<u>\$22,920</u>

***PROBLEM 7-12**

(a)	Petty Cash	250.00	
	Cash.....		250.00
	Postage Expense.....	33.00	
	Supplies.....	75.00	
	Accounts Receivable.....	30.00	
	Shipping Expense.....	57.45	
	Advertising Expense.....	22.80	
	Misc. Expense.....	15.35	
	Cash.....		233.60
	Petty Cash.....	50.00	
	Cash.....		50.00
(b)	Balances per bank:		\$6,522
	Add:		
	Cash on hand	246	
	Deposit in transit	3,000	3,246
			<u>9,768</u>
	Deduct Checks outstanding		<u>(550)</u>
			<u>\$9,218</u>
	Balance per books:		\$8,315
	Add: Note receivable		<u>930</u>
			9,245
	Deduct Service Charge		<u>(27)</u>
	Correct cash balance, May 31		<u>\$9,218</u>
	Cash.....	930	
	Note Receivable.....		900
	Interest Revenue.....		30
	Office Expense.....	27	
	Cash.....		27
(c)	$\$9,218 + \$300 = \$9,518.$		

***PROBLEM 7-13**

(a)

**Jose Orozco Co.
Bank Reconciliation
June 30, 2003**

Balance per bank, June 30		\$4,150.00
Add: Deposits in transit		2,890.00
Deduct: Outstanding checks		<u>(2,136.05)</u>
Correct cash balance, June 30		<u>\$4,903.95</u>
Balance per books, June 30		\$3,969.85
Add: Error in recording deposit (\$90 – \$60)	\$ 30.00	
Error on check no. 747		
(\$582.00 – \$58.20)	523.80	
Note collection (\$900 + \$36)	<u>936.00</u>	<u>1,489.80</u>
		5,459.65
Deduct: NSF check	453.20	
Error on check no. 742 (\$491 – \$419)	72.00	
Bank service charges (\$25 + \$5.50)	<u>30.50</u>	<u>(555.70)</u>
Correct cash balance, June 30		<u>\$4,903.95</u>

(b)	Cash	1,489.80	
	Accounts Receivable.....		30.00*
	Accounts Payable.....		523.80**
	Notes Receivable		900.00
	Interest Revenue		36.00
	Accounts Receivable.....	453.20	
	Accounts Payable.....	72.00***	
	Office Expense—Bank Charges	30.50	
	Cash		555.70

*Assumes sale was on account and not a cash sale.

**Assumes that the purchase of the equipment was recorded at its proper price. If a straight cash purchase, then Equipment should be credited instead of Accounts Payable.

***If a straight cash purchase, then Equipment should be debited instead of Accounts Payable.

***PROBLEM 7-14**

(a) **Tanizaki Inc.**
Bank Reconciliation
November 30, 2003

Balance per bank statement, November 30, 2003	\$56,274.20
Add:	
Cash on hand, not deposited	<u>1,915.40</u>
	58,189.60

Deduct:		
Outstanding checks		
#1224	\$1,635.29	
#1230	2,468.30	
#1232	3,625.15	
#1233	<u>482.17</u>	<u>8,210.91</u>
Correct cash balance, Nov. 30		<u>\$49,978.69</u>

Balance per books, November 30, 2003	\$49,178.22*	
Add:		
Bond interest collected by bank	<u>1,400.00</u>	
	50,578.22	
Deduct:		
Bank charges not recorded in books	\$ 27.40	
Customer's check returned NSF	<u>572.13</u>	<u>599.53</u>
Correct cash balance, Nov. 30		<u>\$49,978.69</u>

***Computation of balance per books,
November 30, 2003**

Balance per books, October 31, 2003	\$ 41,847.85
Add receipts for November	<u>173,523.91</u>
	215,371.76
Deduct disbursements for November	<u>166,193.54</u>
Balance per books, November 30, 2003	<u>\$ 49,178.22</u>

***PROBLEM 7-14 (Continued)**

(b)	November 30		
Cash		1,400.00	
Interest Revenue			1,400.00

	November 30		
Office Expense—Bank Charges.....		27.40	
Cash.....			27.40

	November 30		
Accounts Receivable.....		572.13	
Cash.....			572.13

TIME AND PURPOSE OF CASES

Case 7-1 (Time 10-15 minutes)

Purpose—to provide the student with the opportunity to discuss the deficiencies of the direct write-off method, the justification for two allowance methods for estimating bad debts, and to explain the accounting for the recoveries of accounts written off previously.

Case 7-2 (Time 15-20 minutes)

Purpose—to provide the student with the opportunity to discuss the accounting for cash discounts, trade discounts, and the factoring of accounts receivable.

Case 7-3 (Time 25-30 minutes)

Purpose—to provide the student with the opportunity to discuss the advantages and disadvantages of handling reporting problems related to the Allowance for Doubtful Accounts balance. Recommendations must be made concerning whether some type of allowance approach should be employed, how collection expenses should be handled, and finally, the appropriate accounting treatment for recoveries. A very complete case which should elicit a good discussion of this issue.

Case 7-4 (Time 25-30 minutes)

Purpose—to ask the student to discuss when interest revenue from a note receivable is reported. In Part 2, the student is asked to contrast the estimation of bad debts based on credit sales with that based on the balance in receivables, and to describe the reporting of the allowance and the bad debts expense.

Case 7-5 (Time 25-30 minutes)

Purpose—the student prepares an accounts receivable aging schedule, computes the amount of the adjustment, and prepares the journal entry to adjust the allowance. Then the student is asked to identify steps to improve collection and evaluate each step in terms of risks and costs involved.

Case 7-6 (Time 20-25 minutes)

Purpose—to provide the student with a discussion problem related to notes receivable sold without and with recourse.

Case 7-7 (Time 20-30 minutes)

Purpose—a noninterest-bearing note is exchanged for a unique machine. The student must consider valuation, financial statement disclosure, and factoring the note.

Case 7-8 (Time 25-30 minutes)

Purpose—the student calculates interest revenue on an interest-bearing note and a noninterest-bearing note, and tells how the notes should be reported on the balance sheet. The student discusses how to account for collections on assigned accounts receivable and how to account for factored accounts receivable.

Case 7-9 (Time 25-30 minutes)

Purpose—to provide the student with a case related to the imputation of interest. One company has overstated its income by not imputing an interest element on the noninterest-bearing note receivable that it received in the transaction. We have presented a short analysis to indicate what the proper solution should be. It is unlikely that the students will develop a journal entry with dollar amounts, but they should be encouraged to do so.

Case 7-10 (Time 25-30 minutes)

Purpose—to provide the student with a case to analyze receivables irregularities, including a shortage. This is a good writing assignment.

Case 7-11 (Time 25-30 minutes)

Purpose—to provide the student with a case to analyze ethical issues inherent in bad debt judgments.

SOLUTIONS TO CASES

CASE 7-1

- (a) The direct write-off method overstates the trade accounts receivable on the balance sheet by reporting them at more than their net realizable value. Furthermore, because the write-off often occurs in a period after the revenues were generated, the direct write-off method does not match bad debts expense with the revenues generated by sales in the same period.
- (b) One allowance method estimates bad debts based on credit sales. The method focuses on the income statement and attempts to match bad debts with the revenues generated by the sales in the same period.

The other allowance method estimates bad debts based on the balance in the trade accounts receivable account. The method focuses on the balance sheet and attempts to value the accounts receivable at their net realizable value.

- (c) The company should account for the collection of the specific accounts previously written off as uncollectible as follows:
 - Reinstatement of accounts by debiting Accounts Receivable and crediting Allowance for Doubtful Accounts.
 - Collection of accounts by debiting Cash and crediting Accounts Receivable.

CASE 7-2

- (a) 1. Archer should account for the sales discounts at the date of sale using the net method by recording accounts receivable and sales revenue at the amount of sales less the sales discounts available.

Revenues should be recorded at the cash-equivalent price at the date of sale. Under the net method, the sale is recorded at an amount that represents the cash-equivalent price at the date of exchange (sale).

- 2. There is no effect on Archer's sales revenues when customers do not take the sales discounts. Archer's net income is increased by the amount of interest (discount) earned when customers do not take the sales discounts.
- (b) Trade discounts are neither recorded in the accounts nor reported in the financial statements. Therefore, the amount recorded as sales revenues and accounts receivable is net of trade discounts and represents the cash-equivalent price of the asset sold.
- (c) To account for the accounts receivable factored on August 1, 2003, Archer should decrease accounts receivable by the amount of accounts receivable factored, increase cash by the amount received from the factor, and record a loss. Factoring of accounts receivable on a without recourse basis is equivalent to a sale. The difference between the cash received and the carrying amount of the receivables is a loss.
- (d) Archer should report the face amount of the interest-bearing notes receivable and the related interest receivable for the period from October 1 through December 31 on its balance sheet as noncurrent assets. Both assets are due on September 30, 2005, which is more than one year from the date of the balance sheet.

CASE 7-2 (Continued)

Archer should report interest revenue from the notes receivable on its income statement for the year ended December 31, 2003. Interest revenue is equal to the amount accrued on the notes receivable at the appropriate rate for three months.

Interest revenue is realized with the passage of time. Accordingly, interest revenue should be accounted for as an element of income over the life of the notes receivable.

CASE 7-3

- (1) **Allowances and charge-offs.** Method (a) is recommended. In the case of this company which has a large number of relatively small sales transactions, it is practicable to give effect currently to the probable bad debt expense. Whenever practicable, it is advisable to accrue probable bad debt charges and apply them in the accounting periods in which the related sales are credited. If the percentage is based on actual long-run experience, the allowance balance is usually adequate to bring the accounts receivable in the balance sheet to realizable values. However, the method does not preclude a periodic review of the accounts receivable for the purpose of estimating probable losses in relation to the allowance balance and adjustment for an inadequate or excessive allowance. Therefore method (b) is technically not wrong, but perhaps could be used in conjunction with method (a). Method (b) does not seem as appropriate here because of the probable large number of accounts involved and therefore a percentage of sales basis should provide a better “matching” of expenses with revenues.
- (2) **Collection expenses.** Method (a) or (b) is recommended. In the case of this company, one strong argument for method (a) is that it is advisable to have the bad debt expense account show the full amount of expense relating to efforts to collect and failure to collect balances receivable. On the other hand, an argument can be made to debit the allowance balance on the theory that bad debts (including related expenses) are established at the time the allowance is first established. As a result, the allowance balance already has anticipated these expenses and therefore as they occur they should be charged against the allowance account. It should be noted that there is no “right answer” to this question. It would seem that alternatives (c) and (d) are not good alternatives because the expense is not identified with bad debts, which it should be.
- (3) **Recoveries.** Method (c) is recommended. This method treats the recovery as a correction of a previous write-off. It produces an allowance account that reflects the net experience with bad debts. Method (a) might be acceptable if the provision for bad debts were based on experience with losses without considering recoveries, but in this case it would be advisable to use one account with a specific designation rather than the broad designation “other revenue.” As indicated in the textbook, recoveries are usually handled by reestablishing the receivable and allowance account. The receivable is then written off. Method (c) is basically that approach.

CASE 7-4

Part 1

Since Eve Arden Company is a calendar-year company, six months of interest should be accrued on 12/31/04. The remaining interest income should be recognized on 6/30/05 when the note is collected. The rationale for this treatment is: the accrual basis of accounting provides more useful information than does the cash basis. Therefore, since interest accrues with the passage of time, interest earned on Eve Arden’s note receivable should be recognized over the life of the note, regardless of when the cash is received.

CASE 7-4 (Continued)

Part 2

- (a) The use of the allowance method based on credit sales to estimate bad debts is consistent with the matching principle because bad debts arise from and are a function of making credit sales. Therefore, bad debt expense for the current period should be matched with current credit sales. This is an income statement approach because the balance in the allowance for bad debts account is ignored when computing bad debt expense.

The allowance method based on the balance in accounts receivable is not consistent with the matching principle. This method attempts to value accounts receivable at the amount expected to be collected. The method is facilitated by preparing an aging schedule of accounts receivable and plugging bad debt expense with the adjustment necessary to bring the allowance account to the required balance. Alternatively, the ending balance in accounts receivable can be used to determine the required balance in the allowance account without preparing an aging schedule by using a composite percentage. Bad debt expense is determined in the same manner as when an aging schedule is used. However, neither of these approaches associates bad debt expense with the period of sale, especially for sales made in the last month or two of the period.

- (b) On Eve Arden's balance sheet, the allowance for doubtful accounts is presented as a contra account to accounts receivable with the resulting difference representing the net accounts receivable (i.e., their net realizable value). Bad debt expense would generally be included on Eve Arden's income statement with the other operating (selling/general and administrative) expenses for the period. However, the theoretical arguments can be made for (1) reducing sales revenue by the bad debts adjustment in the same manner that sales returns and allowances and trade discounts are considered reductions of the amount to be received from sales of products or (2) classifying the bad debts expense as a financial expense.

CASE 7-5

(a) **The Rosita Arenas Company**
Accounts Receivable Aging Schedule
May 31, 2004

	<u>Proportion of Total</u>	<u>Amount in Category</u>	<u>Probability of Non-Collection</u>	<u>Estimated Uncollectible Amount</u>
Not yet due	.680	\$1,088,000	.010	\$10,880
Less than 30 days past due	.150	240,000	.035	8,400
30 to 60 days past due	.080	128,000	.050	6,400
61 to 120 days past due	.050	80,000	.090	7,200
121 to 180 days past due	.025	40,000	.300	12,000
Over 180 days past due	<u>.015</u>	<u>24,000</u>	.800	<u>19,200</u>
	<u>1.000</u>	<u>\$1,600,000</u>		<u>\$64,080</u>

CASE 7-5 (Continued)

**(b) The Rosita Arenas Company
Analysis of Allowance for Doubtful Accounts
May 31, 2004**

June 1, 2003 balance	\$ 43,300
Bad debt expense accrual (\$4,000,000 X .04)	<u>160,000</u>
Balance before write-offs of bad accounts	203,300
Write-offs of bad accounts	<u>145,000</u>
Balance before year-end adjustment	58,300
Estimated uncollectible amount	<u>64,080</u>
Additional allowance needed	<u>\$ 5,780</u>

Bad Debt Expense.....	5,780	
 Allowance for Doubtful Accounts.....		5,780

(c) (1) Steps to Improve Accounts Receivable Situation	(2) Risks and Costs Involved
<p>Establish more selective credit-granting policies, such as more restrictive credit requirements or more thorough credit investigations.</p> <p>Establish a more rigorous collection policy either through external collection agencies or by its own personnel.</p> <p>Charge interest on overdue accounts. Insist on cash on delivery (COD) or cash on order (COO) for new customers or poor credit risks.</p>	<p>This policy could result in lost sales and increased costs of credit evaluation. The company may be all but forced to adhere to the prevailing credit-granting policies of the office equipment and supplies industry.</p> <p>This policy may offend current customers and thus risk future sales. Increased collection costs could result from this policy.</p> <p>This policy could result in lost sales and increased administrative costs.</p>

CASE 7-6

- (a) The appropriate valuation basis of a note receivable at the date of sale is its discounted present value of the future amounts receivable for principal and interest using the customer's market rate of interest, if known or determinable, at the date of the equipment's sale.
- (b) Luzov should increase the carrying amount of the note receivable by the effective interest revenue earned for the period February 1 to May 1, 2003. Luzov should account for the sale of the note receivable without recourse by increasing cash for the proceeds received, eliminating the carrying amount of the note receivable, and recognizing a loss (gain) for the resulting difference.

This reporting is appropriate since the note's carrying amount is correctly recorded at the date it was sold and the sale of a note receivable without recourse has occurred. Thus the difference between the cash received and the carrying amount of the note at the date it is sold is reported as a loss (gain).

- (c)
 - 1. For notes receivable not sold, Luzov should recognize a bad debt expense. The expense equals the adjustment required to bring the balance of the allowance for doubtful accounts equal to the estimated uncollectible amounts less the fair values of recoverable equipment.
 - 2. For notes receivable sold with recourse, Luzov should recognize a bad debt expense. The expense equals the estimated amounts payable for customers' defaults less the fair values of recoverable equipment.

CASE 7-7

- (a)
 - 1. It was not possible to determine the machine's fair value directly, so the sales price of the machine is reported at the note's September 30, 2003, fair value. The note's September 30, 2003, fair value equals the present value at that date of the two installments discounted at the buyer's September 30, 2003, market rate of interest from their due dates of September 30, 2004 and September 30, 2005.
 - 2. Tiger reports 2003 interest revenue determined by multiplying the note's carrying amount at September 30, 2003, times the buyer's market rate of interest at the date of issue, times three-twelfths. Tiger should recognize that there is an interest factor implicit in the note, and this interest is earned with the passage of time. Therefore, interest revenue for 2003 should include three months' revenue. The rate used should be the market rate established by the original present value, and this is applied to the carrying amount of the note.
- (b) To report the sale of the note receivable with recourse, Tiger should decrease notes receivable by the carrying amount of the note, increase cash by the amount received, and report the difference as a loss or gain as part of income from continuing operations. The contingent liability with respect to a possible customer default should be disclosed in notes to the financial statements.
- (c) Tiger should decrease cash and increase notes (accounts) receivable past due for all payments caused by the note's dishonor. The note (account) receivable should be written down to its estimated recoverable amount (or an allowance for uncollectibles established), and a loss on uncollectible notes should be recorded for the excess of this difference over the amount of the recourse obligation previously recorded.

CASE 7-8

- (a) 1. For the interest-bearing note receivable, the interest income for 2004 should be determined by multiplying the principal (face) amount of the note by the note's rate of interest by one half (July 1, 2004 to December 31, 2004). Interest accrues with the passage of time, and it should be accounted for as an element of income over the life of the note receivable.
2. For the noninterest-bearing note receivable, the interest income for 2004 should be determined by multiplying the carrying value of the note by the prevailing rate of interest at the date of the note by one third (September 1, 2004 to December 31, 2004). The carrying value of the note at September 1, 2004 is the face amount discounted for two years at the prevailing interest rate from the maturity date of August 31, 2004 back to the issuance date of September 1, 2004. Interest, even if unstated, accrues with the passage of time, and it should be accounted for as an element of income over the life of the note receivable.
- (b) The interest-bearing note receivable should be reported at December 31, 2004, as a current asset at its principal (face) amount.
- The noninterest-bearing note receivable should be reported at December 31, 2004, as a noncurrent asset at its face amount less the unamortized discount on the note at December 31, 2004.
- (c) Because the trade accounts receivable are assigned, Sondergaard should account for the subsequent collections on the assigned trade accounts receivable by debiting Cash and crediting Accounts Receivable. The cash collected should then be remitted to Irene Dunne Finance until the amount advanced by Irene Dunne Finance is settled. The payments to Irene Dunne Finance consist of both principal and interest with interest computed at the rate of 12% on the balance outstanding.
- (d) Because the trade accounts receivable were factored on a without recourse basis, the factor is responsible for collection. On November 1, 2004, Sondergaard should credit Accounts Receivable for the amount of trade accounts receivable factored, debit Cash for the amount received from the factor, debit a Receivable from Factor for 5% of the trade accounts receivable factored, and debit Loss on Sale of Receivables for 3% of the trade accounts receivable factored.

CASE 7-9

The controller of Engone Company cannot justify the manner in which the company has accounted for the transaction in terms of sound financial accounting principles.

Several problems are inherent in the sale of Rocketeer Enterprises stock to Campbell Inc. First, the issue of whether an arm's-length transaction has occurred may be raised. The controller stated that the stock has not been marketable for the past six years. Thus, the recognition of revenue is highly questionable in view of the limited market for the stock; i.e., has an exchange occurred?

Secondly, the collectibility of the note from Campbell is open to question. Campbell appears to have a liquidity problem due to its current cash squeeze. The lack of assurance about collectibility raises the question of whether revenue should be recognized.

Central to the transaction is the issue of imputed interest. If we assume that an arm's-length exchange has taken place, then the noninterest-bearing feature masks the question of whether a gain, no gain or loss, or a loss occurred.

CASE 7-9 (Continued)

For a gain to occur, the interest imputation must result in an interest rate of about 5% or less. To illustrate:

Present value of an annuity of \$1 at 5% for 10 years = 7.72173; thus the present value of ten payments of \$400,000 is \$3,088,692. The cost of the investment is \$3,000,000; thus, only an \$88,692 gain is recognized at 5%.

Selecting a more realistic interest rate (in spite of the controller's ill-founded statements about "no cost" money since he/she is ignoring the opportunity cost) of 8% finds the present value of the annuity of \$400,000 for ten periods equal to \$2,684,032 ($\$400,000 \times 6.71008$). In this case a loss of \$315,968 must be recognized as illustrated by the following journal entry:

Notes Receivable.....	4,000,000	
Loss on Disposal of Rocketeer Stock	315,968	
Investment in Rocketeer Stock		3,000,000
Discount on Notes Receivable		1,315,968

CASE 7-10

To: John Castle, Branch Manager

From: Accounting Major

Date: October 3, 2004

Subject: Shortage in the Accounts Receivable Ledger

While performing a routine test on accounts receivable balances today, I discovered a \$48,000 shortage. I believe that this matter deserves your immediate attention.

To compute the shortage, I determined what the accounts receivable balance should have been based on the amount of inventory which has been sold. When we opened for business this year, we purchased \$360,000 worth of merchandise inventory, and this morning, the balance in this account was \$90,000.

The \$270,000 difference times the 40% markup indicates that sales on account totalled \$378,000 [$\$270,000 + (\$270,000 \times .40)$] to date. I subtracted the payments of \$198,000 made on account this year and calculated the ending balance to be \$180,000. However, the ledger shows a balance of only \$132,000.

I realize that this situation is very sensitive and that we should not accuse any one individual without further evidence. However, in order to protect the company's assets, we must begin an immediate investigation of this disparity.

Aside from me, the only other employee who has access to the accounts receivable ledger is Percy Shelley, the receivables clerk. I will supervise Shelley more closely in the future but suggest that we also employ an auditor to check into this situation.

CASE 7-11

- (a) No, the controller should not be concerned with Rudolph Company's growth rate in estimating the allowance. The accountant's proper task is to make a reasonable estimate of bad debt expense. In making the estimate, the controller should consider the previous year's write-offs and also anticipate economic factors which might affect the company's industry and influence Rudolph's current write-off.
- (b) The controller's interest in disclosing financial information completely and fairly conflicts with the president's economic interest in manipulating income to avoid undesirable demands from the parent company. Such a conflict of interest is an ethical dilemma. The controller must recognize the dilemma, identify the alternatives, and decide what to do.

FINANCIAL REPORTING PROBLEM

- (a) In its note on investments, 3M classified its cash and cash equivalents as follows:

“Cash and cash equivalents consist of cash and temporary investments with maturities of 3 months or less when purchased.”

- (b) 3M has \$616 million in cash and cash equivalents. As disclosed in the Consolidated Statement of cash flows, 3M indicates that Cash was used for additions to property, plant and equipment in 2001 (\$980 million). Cash dividends per share of \$2.40, payable quarterly, were declared in 2001. Total cash dividends of approximately \$948 million were paid in 2001.

- (c) In its notes to financial statements, 3M provides the following:

From Note #6. At December 31, 2001 and 2000, respectively, product and other insurance receivables (current and long-term) include \$406 million and \$519 million related to the breast implant matter, \$223 million and \$155 million related to respirator/mask/asbestos litigation, and \$156 million and \$159 million of other insurance receivables. Although at December 31, 2001, receivables for insurance recoveries related to the breast implant matter of \$324 million continued to be contested by insurance carriers, management, based on the opinion of counsel, believes such amounts will ultimately be collected.

FINANCIAL STATEMENT ANALYSIS CASE

- (a) Cash may consist of funds on deposit at the bank, negotiable instruments such as money orders, certified checks, cashier's checks, personal checks, bank drafts, and money market funds that provide checking account privileges.**
- (b) Cash equivalents are short-term, highly liquid investments that are both (a) readily convertible to known amounts of cash, and (b) so near their maturity that they present insignificant risk from changes in interest rates. Generally, only investments with original maturities of 3 months or less qualify. Examples of cash equivalents are treasury bills, commercial paper, and money market funds.**
- (c) A compensating balance is that portion of any cash deposit maintained by an enterprise which constitutes support for existing borrowing arrangements with a lending institution.**

A compensating balance representing a legally restricted deposit held against short-term borrowing arrangements should be stated separately among cash and cash equivalent items. A restricted deposit held as a compensating balance against long-term borrowing arrangements should be separately classified as a noncurrent asset in either the investments or other assets section.

- (d) Cash equivalents are short-term, highly liquid investments that are both (1) readily convertible to known amounts of cash, and (2) so near their maturity that they represent insignificant risk of changes in interest rates. Generally, only investments with original maturities of 3 months or less qualify under these definitions. Examples of cash equivalents are treasury bills, commercial paper, and money market funds purchased with cash that are in excess of immediate needs.**

Short-term investments are the investments held temporarily in place of cash and can be readily converted to cash when current financing needs make such conversion desirable. Examples of short-term investments include stock, treasury notes, and other short-term securities.

FINANCIAL STATEMENT ANALYSIS CASE (Continued)

The major differences between cash equivalents and short-term investments are (1) cash equivalents typically have shorter maturity (less than three months) whereas short-term investments either have a longer maturity (e.g., short-term bonds) or no maturity date (e.g., stock), and (2) cash equivalents are readily convertible to known amounts of cash whereas a company may have gain or loss when selling its short-term investments.

- (e) According to the note disclosure, Occidental received \$360 million from selling receivables.
- (f) With these facts, Occidental would record a loss of \$30,000,000 as revealed in the following entry to record the transaction:

Cash	360,000,000	
Loss on Sale.....	30,000,000*	
Accounts Receivable		375,000,000
Recourse Obligation		15,000,000

* $(\$375,000,000 \times 4\%) + \$15,000,000$

- (g) The transaction in (f) will decrease Occidental's liquidity position. Current assets decrease by \$15,000,000 and current liabilities are increased by the \$15,000,000 (for the recourse liability).

COMPARATIVE ANALYSIS CASE

(a) Cash and cash equivalents:

Coca-Cola, 12/31/01
\$1,866,000,000

PepsiCo, 12/29/01
\$683,000,000

Coca-Cola classifies cash equivalents as “marketable securities that are highly liquid and have maturities of three months or less at the date of purchase.”

PepsiCo classifies cash equivalents as “funds temporarily invested (with maturities three months or less).”

(b) Accounts receivable (net):

Coca-Cola, 12/31/01
\$1,882,000,000

PepsiCo, 12/29/01
\$1,663,000,000

Allowance for doubtful accounts receivable:

Coca-Cola, 12/31/01
Balance, \$59,000,000
Percent of receivables, 3.14%

PepsiCo, 12/29/01
Balance, \$121,000,000
Percent of receivables, 7.28%

(c) Receivables turnover ratio and days outstanding:

$$\frac{\$20,092}{\$1,941 + \$1,819} = 10.7 \text{ times}$$

2

$$\frac{\$26,935}{\$1,663 + \$1,613} = 16.4 \text{ times}$$

2

$$365 \div 10.7 = 34.1 \text{ days}$$

$$365 \div 16.4 = 22.3 \text{ days}$$

PepsiCo has a significantly higher receivables turnover ratio, 16.4 times vs. Coca-Cola’s 10.7 times. PepsiCo also has the lower receivables days outstanding, 22.3 days vs. 34.1 days outstanding for Coca-Cola.

RESEARCH CASES

CASE 1

- (a) The 2001 edition reported 121 firms selling receivables, and 27 firms collateralizing receivables.
- (b) The answer depends on the companies selected.

CASE 2

- (a) Analysts say AmeriCredit's revised accounting method still doesn't give investors a true picture of the company's earnings. This is because gain-on-sale accounting is a very aggressive revenue-recognition policy and it makes a sub-prime lender look a lot better than it really is. AmeriCredit uses gain-on-sale accounting, a method under which companies immediately record expected revenue and profit from their loan sales. But even though the gains are posted on the company's books upfront, they materialize only gradually. So, much of the profits booked in this way are only estimates of expected future profits.

The method has drawn fierce criticism in recent months by investors who say it encourages companies to book lots of loans, with little regard for their quality, as a way to increase profits. What's more, these critics say, the assumptions used to calculate expected future profits—such as anticipated default rates—vary widely and are difficult to predict.

- (b) The Securities and Exchange Commission has indicated that the most aggressive form of gain-on-sale accounting, the "cash-in" method would no longer be permissible. That decision led AmeriCredit, which employed the "cash-in" method, to change its procedure. Under "cash-in method," companies use a shorter time period to measure the value

RESEARCH CASES (Continued)

of expected revenue streams. AmeriCredit executives moved last week to convert to a “cash-out” method of gain-on-sale accounting, in which those values are calculated over longer periods of time, tending to result in lower earnings and revenues.

Analysts indicate that although the “cash-out” method is not as aggressive as “cash-in method,” it still increases the potential for gross overstatements of revenue and earnings. They say abandoning gain-on-sale accounting altogether for future securitizations and booking revenue and earnings gradually as actual cash revenue comes in would paint a truer picture of a company’s earnings.

- (c) Earnings reports that indicate that problem loans—defined as loans in which a customer is more than one month behind on interest payments—climbed to 9.7% of all managed receivables in the first quarter from 8.9% in the fiscal fourth quarter. Thus, analysts look at how Americredit deals with customers that miss payments. For example, AmeriCredit allows a customer who misses a monthly car payment to defer principal payments twice until year end, without being declared delinquent. These deferred loans, should be counted as problem loans and AmeriCredit’s percentage of problem loans for the first quarter would have been much higher.**

PROFESSIONAL SIMULATION

Measurement

Trade Accounts Receivable		Allowance for Doubtful Accounts	
Beginning balance	\$ 40,000	Beginning balance	\$5,500
Credit sales during 2004	550,000	Charge-offs	(2,300)
Collections during 2004	(500,000)	2004 provision	
Factored receivables	<u>(40,000)</u>	(0.8% X \$550,000)	<u>4,400</u>
Ending balance	<u>\$ 50,000</u>	Ending balance	<u>\$7,600</u>

Financial Statements

Current assets

Cash*		\$ 11,900
Trade accounts receivable	\$50,000	
Allowance for doubtful accounts	<u>(7,600)</u>	42,400
Customer receivable		2,000
Interest receivable**		2,750
Due from factor***		2,400
Note receivable		50,000
Inventories		80,000
Prepaid postage		<u>1,100</u>
Total current assets		<u>\$192,550</u>

*(\$15,000 – \$2,000 – \$1,100)

**(\$50,000 X 11% X 1/2)

***(\$40,000 X 6%)

Analysis

	<u>2003</u>		<u>2004</u>	
Current ratio = (\$139,500* ÷ \$80,000)	= 1.74		(\$192,550 ÷ \$86,000)	= 2.24
Receivables turnover = 10.37 times			<u>\$550,000</u>	= 14.3 times
			(\$34,500 + \$42,400)/2	

*(\$20,000 + \$40,000 – \$5,500 + \$85,000)

Both ratios indicate that Horn's liquidity has improved relative to the prior year.

PROFESSIONAL SIMULATION (Continued)

Explanation

With a secured borrowing, the receivables would stay on Horn's books and Horn would record a note payable. This would reduce the current ratio and receivables turnover ratio.

CHAPTER 8

Valuation of Inventories: A Cost Basis Approach

ASSIGNMENT CLASSIFICATION TABLE

Topics	Questions	Brief			
		Exercises	Exercises	Problems	Cases
1. Inventory accounts; determining quantities, costs, and items to be included in inventory; the inventory equation; balance sheet disclosure.	1, 2, 3, 4, 5, 6, 8, 9	1, 3	1, 2, 3, 4, 5, 6, 10	1, 2, 3	1, 2, 3, 5, 11
2. Perpetual vs. periodic.		2	9, 13, 14, 17	4, 5, 6	
3. Recording of discounts.	10, 11		7, 8	3	4
4. Inventory errors.	7	4	2, 3, 4, 5, 10, 11, 12	2	
5. Flow assumptions.	12, 13, 16, 18, 20	5, 6, 7	13, 14, 15, 16, 17, 18, 19, 20, 21, 22	1, 4, 5, 6, 7	5, 6, 7, 8
6. Inventory accounting changes.			18	7	6, 7, 10
7. Dollar-value LIFO methods.	14, 15, 17, 18, 19	8, 9	23, 24, 25, 26	1, 8, 9, 10, 11	8, 9

ASSIGNMENT CHARACTERISTICS TABLE

Item	Description	Level of Difficulty	Time (minutes)
E8-1	Inventoriable costs.	Moderate	15-20
E8-2	Inventoriable costs.	Moderate	10-15
E8-3	Inventoriable costs—perpetual	Simple	10-15
E8-4	Inventoriable costs.	Simple	10-15
E8-5	Inventoriable costs—error adjustments.	Moderate	15-20
E8-6	Determining merchandise amounts—periodic.	Simple	10-20
E8-7	Purchases recorded net.	Simple	10-15
E8-8	Purchases recorded, gross method.	Simple	20-25
E8-9	Periodic versus perpetual entries.	Moderate	15-25
E8-10	Inventory errors, periodic.	Simple	10-15
E8-11	Inventory errors.	Simple	10-15
E8-12	Inventory errors.	Moderate	15-20
E8-13	FIFO and LIFO—periodic and perpetual.	Moderate	15-20
E8-14	FIFO, LIFO and average cost determination.	Moderate	20-25
E8-15	FIFO, LIFO, average cost inventory.	Moderate	15-20
E8-16	Compute FIFO, LIFO, average cost—periodic.	Moderate	15-20
E8-17	FIFO and LIFO; periodic and perpetual.	Simple	10-15
E8-18	FIFO and LIFO; income statement presentation.	Simple	15-20
E8-19	FIFO and LIFO effects.	Moderate	15-20
E8-20	FIFO and LIFO—periodic.	Simple	10-15
E8-21	LIFO effect.	Moderate	10-15
E8-22	Alternate inventory methods—comprehensive.	Moderate	25-30
E8-23	Dollar-value LIFO.	Simple	5-10
E8-24	Dollar-value LIFO.	Simple	15-20
E8-25	Dollar-value LIFO.	Moderate	20-25
E8-26	Dollar-value LIFO.	Moderate	15-20
P8-1	Various inventory issues.	Moderate	30-40
P8-2	Inventory adjustments.	Moderate	25-35
P8-3	Purchases recorded gross and net.	Simple	20-25
P8-4	Compute FIFO, LIFO, and average cost—periodic and perpetual.	Complex	40-55
P8-5	Compute FIFO, LIFO, and average cost—periodic and perpetual.	Complex	40-55
P8-6	Compute FIFO, LIFO, and average cost—periodic and perpetual.	Moderate	25-35
P8-7	Financial statement effects of FIFO and LIFO.	Moderate	30-40
P8-8	Dollar-value LIFO.	Moderate	30-40

ASSIGNMENT CHARACTERISTICS TABLE (Continued)

Item	Description	Level of Difficulty	Time (minutes)
P8-9	Internal indexes—dollar-value LIFO.	Moderate	25-35
P8-10	Internal indexes—dollar-value LIFO.	Complex	30-35
P8-11	Dollar-value LIFO.	Moderate	40-50
C8-1	Inventoriable costs.	Moderate	15-20
C8-2	Inventoriable costs.	Moderate	15-25
C8-3	Inventoriable costs.	Moderate	25-35
C8-4	Accounting treatment of purchase discounts.	Simple	15-25
C8-5	General inventory issues.	Moderate	20-25
C8-6	LIFO inventory advantages.	Simple	15-20
C8-7	Average cost, FIFO, and LIFO.	Simple	15-20
C8-8	LIFO application and advantages.	Moderate	25-30
C8-9	Dollar-value LIFO issues.	Moderate	25-30
C8-10	FIFO and LIFO.	Moderate	30-35
C8-11	LIFO Choices—Ethical Issues	Moderate	20-25

ANSWERS TO QUESTIONS

1. In a retailing concern, inventory normally consists of only one category, that is the product awaiting resale. In a manufacturing enterprise, inventories consist of raw materials, work in process, and finished goods. Sometimes a manufacturing or factory supplies inventory account is also included.
2. (a) Inventories are unexpired costs and represent future benefits to the owner. A statement of financial position includes a listing of all unexpired costs (assets) at a specific point in time. Because inventories are assets owned at the specific point in time for which a statement of financial position is prepared, they must be included in order that the owner's financial position will be presented fairly.

(b) Beginning and ending inventories are included in the computation of net income only for the purpose of arriving at the cost of goods sold during the period of time covered by the statement. Goods included in the beginning inventory which are no longer on hand are expired costs to be matched against revenues earned during the period. Goods included in the ending inventory are unexpired costs to be carried forward to a future period, rather than expensed.
3. In a perpetual inventory system, data are available at any time on the quantity and dollar amount of each item of material or type of merchandise on hand. A physical inventory means that inventory is periodically counted (at least once a year) but that up-to-date records are not necessarily maintained. Discrepancies often occur between the physical count and the perpetual records because of clerical errors, theft, waste, misplacement of goods, etc.
4. No. Mariah Carey, Inc. should not report this amount on its balance sheet. As consignee, it does not own this merchandise and therefore it is inappropriate for it to recognize this merchandise as part of its inventory.
5. Product financing arrangements are essentially off-balance-sheet financing devices. These arrangements make it appear that a company has sold its inventory or never taken title to it so they can keep loans off their balance sheet. A product financing arrangement should not be recorded as a sale. Rather, the inventory and related liability should be reported on the balance sheet.
6. (a) Inventory.
(b) Not shown, possibly in a note to the financial statements if material.
(c) Inventory.
(d) Inventory, separately disclosed as raw materials.
(e) Not shown, possibly a note to the financial statements.
(f) Inventory or manufacturing supplies.
7. This omission would have no effect upon the net income for the year, since the purchases and the ending inventory are understated in the same amount. With respect to financial position, both the inventory and the accounts payable would be understated. Materiality would be a factor in determining whether an adjustment for this item should be made as omission of a large item would distort the amount of current assets and the amount of current liabilities. It, therefore, might influence the current ratio to a considerable extent.
8. Cost, which has been defined generally as the price paid or consideration given to acquire an asset, is the primary basis for accounting for inventories. As applied to inventories, cost means the sum of the applicable expenditures and charges directly or indirectly incurred in bringing an article to its existing condition and location. These applicable expenditures and charges include all acquisition and production costs but exclude all selling expenses and that portion of general and administrative expenses not clearly related to production. Freight charges applicable to the product are considered a cost of the goods.

Questions Chapter 8 (Continued)

9. By their nature, product costs “attach” to the inventory and are recorded in the inventory account. These costs are directly connected with the bringing of goods to the place of business of the buyer and converting such goods to a salable condition. Such charges would include freight charges on goods purchased, other direct costs of acquisition, and labor and other production costs incurred in processing the goods up to the time of sale.

Period costs are not considered to be directly related to the acquisition or production of goods and therefore are not considered to be a part of inventories.

Conceptually, these expenses are as much a cost of the product as the initial purchase price and related freight charges attached to the product. While selling expenses are generally considered as more directly related to the cost of goods sold than to the unsold inventory, in most cases, though, the costs, especially administrative expenses, are so unrelated or indirectly related to the immediate production process that any allocation is purely arbitrary.

Interest costs are considered a cost of financing and are generally expensed as incurred, when related to getting inventories ready for sale.

10. Cash discounts (purchase discounts) should not be accounted for as financial income when payments are made. Income should be recognized when the earning process is complete (when the company sells the inventory). Furthermore, a company does not earn revenue from purchasing goods. Cash discounts should be considered as a reduction in the cost of the items purchased.

11. \$100.00, \$105.00, \$103.00. (Transportation-In not included for discount.)

12. Arguments for the specific identification method are as follows:

- (1) It provides an accurate and ideal matching of costs and revenues because the cost is specifically identified with the sales price.
- (2) The method is realistic and objective since it adheres to the actual physical flow of goods rather than an artificial flow of costs.
- (3) Inventory is valued at actual cost instead of an assumed cost.

Arguments against the specific identification method include the following:

- (1) The cost of using it restricts its use to goods of high unit value.
 - (2) The method is impractical for manufacturing processes or cases in which units are commingled and identity lost.
 - (3) It allows an artificial determination of income by permitting arbitrary selection of the items to be sold from a homogeneous group.
 - (4) It may not be a meaningful method of assigning costs in periods of changing price levels.
13. The first-in, first-out method approximates the specific identification method when the physical flow of goods is on a FIFO basis. When the goods are subject to spoilage or deterioration, FIFO is particularly appropriate. In comparison to the specific identification method, an attractive aspect of FIFO is the elimination of the danger of artificial determination of income by the selection of advantageously priced items to be sold. The basic assumption is that costs should be charged in the order in which they are incurred. As a result the inventories are stated at the latest costs. Where the inventory is consumed and valued in the FIFO manner, there is no accounting recognition of

Questions Chapter 8 (Continued)

unrealized gain or loss. A criticism of the FIFO method is that it maximizes the effects of price fluctuations upon reported income because current revenue is matched with the oldest costs which are probably least similar to current replacement costs. On the other hand, this method produces a balance sheet value for the asset close to current replacement costs. It is claimed that FIFO is deceptive when used in a period of rising prices because the reported income is not fully available since a part of it must be used to replace inventory at higher cost.

The results achieved by the weighted average method resemble those of the specific identification method where items are chosen at random or there is a rapid inventory turnover. Compared with the specific identification method, the weighted average method has the advantage that the goods need not be individually identified; therefore accounting is not so costly and the method can be applied to fungible goods. The weighted average method is also appropriate when there is no marked trend in price changes. In opposition it is argued that the method is illogical. Since it assumes that all sales are made proportionally from all purchases and that inventories will always include units from the first purchases, it is argued that the method is illogical because it is contrary to the chronological flow of goods. In addition, in periods of price changes there is a lag between current costs and costs assigned to income or to the valuation of inventories.

If it is assumed that actual cost is the appropriate method of valuing inventories, last-in, first-out is not theoretically correct. In general, LIFO is directly adverse to the specific identification method because the goods are not valued in accordance with their usual physical flow. An exception is the application of LIFO to piled coal or ores which are more or less consumed in a LIFO manner. Proponents argue that LIFO provides a better matching of current costs and revenues.

During periods of sharp price movements, LIFO has a stabilizing effect upon reported income figures because it eliminates paper income and losses on inventory and smooths the impact of income taxes. LIFO opponents object to the method principally because the inventory valuation reported in the balance sheet could be seriously misleading. The profit figures can be artificially influenced by management through contracting or expanding inventory quantities. Temporary involuntary depletion of LIFO inventories would distort current income by the previously unrecognized price gains or losses applicable to the inventory reduction.

14. A company may obtain a price index from an outside source (external index)—the government, a trade association, an exchange—or by computing its own index (internal index) using the double extension method. Under the double extension method the ending inventory is priced at both base-year costs and at current-year costs, with the total current cost divided by the total base cost to obtain the current year index.
15. Under the double extension method, LIFO inventory is priced at both base-year costs and current-year costs. The total current-year cost of the inventory is divided by the total base-year cost to obtain the current-year index.

The index for the LIFO pool consisting of product A and product B is computed as follows:

Product	Units	Base-year Cost		Current-Year Cost	
		Unit	Total	Unit	Total
A	25,500	\$10.20	\$260,100	\$19.00	\$484,500
B	10,350	\$37.00	<u>382,950</u>	\$45.60	<u>471,960</u>
December 31, 2004 inventory			<u>\$643,050</u>		<u>\$956,460</u>

$$\frac{\text{Current-Year Cost}}{\text{Base-Year Cost}} = \frac{\$956,460}{\$643,050} = 148.74, \text{ index at 12/31/04.}$$

Questions Chapter 8 (Continued)

16. The LIFO method results in a smaller net income because later costs, which are higher than earlier costs, are matched against revenue. Conversely, in a period of falling prices, the LIFO method would result in a higher net income because later costs in this case would be lower than earlier costs, and these later costs would be matched against revenue.
17. The dollar-value method uses dollars instead of units to measure increments, or reductions in a LIFO inventory. After converting the closing inventory to the same price level as the opening inventory, the increases in inventories, priced at base-year costs, is converted to the current price level and added to the opening inventory. Any decrease is subtracted at base-year costs to determine the ending inventory.

The principal advantage is that it eliminates much detailed work. It is not necessary to keep records nor make calculations of opening and closing quantities of individual items. Also, the use of a base inventory amount gives greater flexibility in the makeup of the base and eliminates many detailed calculations.

The unit LIFO inventory costing method is applied to each type of item in an inventory. Any type of item removed from the inventory base (e.g., magnets) and replaced by another type (e.g., coils) will cause the old cost (magnets) to be removed from the base and to be replaced by the more current cost of the other item (coils).

The dollar-value LIFO costing method treats the inventory base as being composed of a base of cost in dollars rather than of units. Therefore a change in the composition of the inventory (less magnets and more coils) will not change the cost of inventory base so long as the amount of the inventory stated in base-year dollars does not change.

18. (a) LIFO layer—a LIFO layer (increment) is formed when the ending inventory at base-year prices exceeds the beginning inventory at base-year prices.
- (b) LIFO reserve—the difference between the inventory method used for internal purposes and LIFO.
- (c) LIFO effect—the change in the LIFO reserve (Allowance to Reduce Inventory to LIFO) from one period to the next.

19.	December 31, 2004 inventory at December 31, 2003 prices, \$1,026,000 ÷ 1.08	\$950,000
	Less: Inventory, December 31, 2003	<u>800,000</u>
	Increment added during 2004 at base prices	<u>\$150,000</u>
	Increment added during 2004 at December 31, 2004 prices, \$150,000 X 1.08	\$162,000
	Add: Inventory at December 31, 2004	<u>800,000</u>
	Inventory, December 31, 2004, under dollar-value LIFO method	<u>\$962,000</u>

20. Phantom inventory profits occur when the inventory costs matched against sales are less than the replacement cost of the inventory. The costs of goods sold therefore is understated and profit is considered overstated. Phantom profits are said to occur when FIFO is used during periods of rising prices.

High inventory profits through involuntary liquidation occur if a company is forced to reduce its LIFO base or layers. If the base or layers of old costs are eliminated, strange results can occur because old, irrelevant costs can be matched against current revenues. A distortion in reported income for a given period may result, as well as consequences that are detrimental from an income tax point of view.

SOLUTIONS TO BRIEF EXERCISES

BRIEF EXERCISE 8-1

Billie Joel Company
Balance Sheet
December 31

Current assets		
Cash		\$ 190,000
Receivables (net)		400,000
Inventories		
Finished goods	\$150,000	
Work in process	200,000	
Raw materials	<u>335,000</u>	685,000
Prepaid insurance		<u>41,000</u>
Total Current Assets		<u>\$1,316,000</u>

BRIEF EXERCISE 8-2

Inventory (150 X \$30).....	4,500	
Accounts Payable		4,500
Accounts Payable (6 X \$30).....	180	
Inventory		180
Accounts Receivable (125 X \$50)	6,250	
Sales		6,250
Cost of Goods Sold (125 X \$30)	3,750	
Inventory		3,750

BRIEF EXERCISE 8-3

December 31 inventory per physical count	\$200,000
Goods-in-transit purchased FOB shipping point	15,000
Goods-in-transit sold FOB destination	<u>22,000</u>
December 31 inventory	<u>\$237,000</u>

BRIEF EXERCISE 8-4

Cost of goods sold as reported	\$1,400,000
Overstatement of 12/31/03 inventory	(110,000)
Overstatement of 12/31/04 inventory	<u>45,000</u>
Corrected cost of goods sold	<u>\$1,335,000</u>

12/31/04 retained earnings as reported	\$5,200,000
Overstatement of 12/31/04 inventory	<u>(45,000)</u>
Corrected 12/31/04 retained earnings	<u>\$5,155,000</u>

BRIEF EXERCISE 8-5

$$\text{Weighted average cost per unit} \quad \frac{\$11,850}{1,000} = \underline{\underline{\$11.85}}$$

$$\text{Ending inventory } 300 \times \$11.85 = \underline{\underline{\$3,555}}$$

Cost of goods available for sale	\$11,850
Deduct ending inventory	<u>3,555</u>
Cost of goods sold	<u>\$ 8,295</u>

BRIEF EXERCISE 8-6

Ending inventory (April 23)	300 X \$13 =	<u>\$3,900</u>
Cost of goods available for sale		\$11,850
Deduct ending inventory		<u>3,900</u>
Cost of goods sold		<u>\$ 7,950</u>

BRIEF EXERCISE 8-7

April 1	250 X \$10 =	\$2,500
April 15	50 X \$12 =	<u>600</u>
Ending inventory		<u>\$3,100</u>
Cost of goods available for sale		\$11,850
Deduct ending inventory		<u>3,100</u>
Cost of goods sold		<u>\$ 8,750</u>

BRIEF EXERCISE 8-8

2002		\$100,000
2003	$\$123,200 \div 1.10 =$	<u>\$112,000</u>
	\$100,000 X 1.00	\$100,000
	\$12,000 X 1.10	<u>13,200</u>
		<u>\$113,200</u>
2004	$\$134,560 \div 1.16 =$	<u>\$116,000</u>
	\$100,000 X 1.00	\$100,000
	\$12,000 X 1.10	13,200
	\$4,000 X 1.16	<u>4,640</u>
		<u>\$117,840</u>

BRIEF EXERCISE 8-9

2003 inventory at base amount ($\$21,708 \div 1.08$)		\$20,100
2002 inventory at base amount		<u>19,750</u>
Increase in base inventory		350
2003 inventory under LIFO		
Layer one	\$19,750 X 1.00	19,750
Layer two	\$ 350 X 1.08	<u>378</u>
		<u>\$20,128</u>
2004 inventory at base amount ($\$25,935 \div 1.14$)		\$22,750
2003 inventory at base amount		<u>20,100</u>
Increase in base inventory		2,650
2004 inventory under LIFO		
Layer one	\$19,750 X 1.00	\$19,750
Layer two	\$ 350 X 1.08	378
Layer three	\$ 2,650 X 1.14	<u>3,021</u>
		<u>\$23,149</u>

SOLUTIONS TO EXERCISES

EXERCISE 8-1 (15-20 minutes)

Items 1, 3, 5, 8, 11, 13, 14, 16, and 17 would be reported as inventory in the financial statements.

The following items would not be reported as inventory:

2. Cost of goods sold in the income statement.
4. Not reported in the financial statements.
6. Cost of goods sold in the income statement.
7. Cost of goods sold in the income statement.
9. Interest expense in the income statement.
10. Advertising expense in the income statement.
12. Office supplies in the current assets section of the balance sheet.
15. Not reported in the financial statements.
18. Short-term investments in the current asset section of the balance sheet.

EXERCISE 8-2 (10-15 minutes)

Inventory per physical count	\$441,000
Goods in transit to customer, f.o.b. destination	+ 38,000
Goods in transit from vendor, f.o.b. seller	+ <u>51,000</u>
Inventory to be reported on balance sheet	<u>\$530,000</u>

The consigned goods of \$61,000 are not owned by Jose Oliva and were properly excluded.

The goods in transit to a customer of \$46,000, shipped f.o.b. shipping point, are properly excluded from the inventory because the title to the goods passed when they left the seller (Oliva) and therefore a sale and related cost of goods sold should be recorded in 2004.

The goods in transit from a vendor of \$83,000, shipped f.o.b. destination, are properly excluded from the inventory because the title to the goods does not pass to Oliva until the buyer (Oliva) receives them.

EXERCISE 8-3 (10-15 minutes)

- 1. Do not include. Title to special order merchandise passes to customer on completion.**
- 2. Do not include. Title did not pass until January 3.**
- 3. Include in inventory. Product belonged to client at December 31, 2004.**
- 4. Include in inventory. Under invoice terms, title passed when goods were shipped.**
- 5. Do not include. Goods received on consignment remain the property of the consignor.**

EXERCISE 8-4 (10-15 minutes)

1.	Raw Materials Inventory	8,100	
	 Accounts Payable		8,100
2.	Raw Materials Inventory	28,000	
	 Accounts Payable		28,000
3.	No adjustment necessary.		
4.	Accounts Payable	7,500	
	 Raw Materials Inventory		7,500
5.	Raw Materials Inventory	19,800	
	 Accounts Payable		19,800

EXERCISE 8-5 (15-20 minutes)

(a)	Inventory December 31, 2004 (unadjusted)	\$234,890
	Transaction 2	13,420
	Transaction 3	-0-
	Transaction 4	-0-
	Transaction 5	8,540
	Transaction 6	(10,438)
	Transaction 7	(10,520)
	Transaction 8	<u>1,500</u>
	Inventory December 31, 2004 (adjusted)	<u>\$237,392</u>

(b)	Transaction 3		
	Sales	12,800	
	Accounts Receivable		12,800
	(To reverse sale entry in 2004)		

Transaction 4			
	Purchases (Inventory)	15,630	
	Accounts Payable		15,630
	(To record purchase of merchandise in 2004)		

Transaction 8			
	Sales Returns and Allowances.....	2,600	
	Accounts Receivable		2,600

EXERCISE 8-6 (10-20 minutes)

	2002	2003	2004
Sales	\$290,000	\$360,000	\$410,000
Sales Returns	11,000	13,000	20,000
Net Sales	279,000	347,000	390,000
Beginning Inventory	20,000	32,000	37,000**
Ending Inventory	32,000*	37,000	44,000
Purchases	242,000	260,000	298,000
Purchase Returns and Allowances	5,000	8,000	10,000
Transportation-in	8,000	9,000	12,000
Cost of Good Sold	233,000	256,000	293,000
Gross Profit	46,000	91,000	97,000

*This was given as the beginning inventory for 2003.

**This was calculated as the ending inventory for 2003.

EXERCISE 8-7 (10-15 minutes)

(a)	May 10	Purchases.....	14,700	
		Accounts Payable		14,700
		(\$15,000 X .98)		
	May 11	Purchases.....	13,068	
		Accounts Payable		13,068
		(\$13,200 X .99)		
	May 19	Accounts Payable.....	14,700	
		Cash.....		14,700
	May 24	Purchases.....	11,270	
		Accounts Payable		
		(\$11,500 X .98).....		11,270

EXERCISE 8-7 (Continued)

(b)	May 31	Purchase Discounts Lost	132	
		 Accounts Payable		
		 (\$13,200 X .01)		132
		 (Discount lost on purchase		
		 of May 11, \$13,200, terms		
		 1/15, n/30)		

EXERCISE 8-8

(a)	Feb. 1	Inventory [\$10,800 – (\$10,800 X 10%)]....	9,720	
		 Accounts Payable		9,720
	Feb. 4	 Accounts Payable [\$2,500 –		
		 (\$2,500 X 10%)]	2,250	
		 Inventory		2,250
	Feb. 13	 Accounts Payable (\$9,720 – \$2,250).....	7,470	
		 Inventory (3% X \$7,470).....		224.10
		 Cash		7,245.90
(b)	Feb. 1	Purchases [\$10,800 – (\$10,800 X 10%)]..	9,720	
		 Accounts Payable		9,720
	Feb. 4	 Accounts Payable [\$2,500 – (\$2,500 X		
		 10%)]	2,250	
		 Purchase Returns and Allowances		2,250
	Feb. 13	 Accounts Payable (\$9,720 – \$2,250).....	7,470	
		 Purchase Discounts (3% X		
		 \$7,470).....		224.10
		 Cash		7,245.90

EXERCISE 8-8 (Continued)

(c) Purchase price (list)	\$10,800
Less: Trade discount (10% X \$10,800)	<u>1,080</u>
Price on which cash discount based	9,720
Less: Cash discount (3% X \$9,720)	<u>291.60</u>
Net price	<u><u>\$9,428.40</u></u>

EXERCISE 8-9 (15-25 minutes)

(a) Jan. 4	Accounts Receivable.....	640	
	Sales (80 X \$8)		640
Jan. 11	Purchases (\$150 X \$6).....	900	
	Accounts Payable		900
Jan. 13	Accounts Receivable.....	1,050	
	Sales (120 X \$8.75)		1,050
Jan. 20	Purchases (160 X \$7).....	1,120	
	Accounts Payable		1,120
Jan. 27	Accounts Receivable.....	900	
	Sales (100 X \$9)		900
Jan. 31	Inventory (\$7 X 110).....	770	
	Cost of Goods Sold	1,750*	
	Purchases (\$900 + \$1,120).....		2,020
	Inventory (100 X \$5)		500

*($\$500 + \$2,020 - \$770$)

EXERCISE 8-9 (Continued)

(b)	Sales (\$640 + \$1,050 + \$900)	\$2,590	
	Cost of goods sold	<u>1,750</u>	
	Gross profit	<u>\$ 840</u>	

(c)	Jan. 4	Accounts Receivable	640	
		Sales (80 X \$8)		640
		Cost of Goods Sold	400	
		Inventory (80 X \$5)		400
	Jan. 11	Inventory	900	
		Accounts Payable (150 X \$6) ..		900
	Jan. 13	Accounts Receivable	1,050	
		Sales (120 X \$8.75)		1,050
		Cost of Goods Sold	700	
		Inventory [(20 X \$5) + (100 X \$6)]		700
	Jan. 20	Inventory	1,120	
		Accounts Payable (160 X \$7) ..		1,120
	Jan. 27	Accounts Receivable	900	
		Sales (100 X \$9)		900
		Cost of Goods Sold	650	
		Inventory [(50 X \$6) + (50 X \$7)]		650

(d)	Sales	\$2,590	
	Cost of goods sold		
	(\$400 + \$700 + \$650)	<u>1,750</u>	
	Gross profit	<u>\$ 840</u>	

EXERCISE 8-10 (10-15 minutes)

	<u>Current Year</u>	<u>Subsequent Year</u>
1. Working capital	Overstated	No effect
Current ratio	Overstated	No effect
Retained earnings	Overstated	No effect
Net income	Overstated	Understated
2. Working capital	No effect	No effect
Current ratio	Overstated*	No effect
Retained earnings	No effect	No effect
Net income	No effect	No effect
3. Working capital	Overstated	No effect
Current ratio	Overstated	No effect
Retained earnings	Overstated	No effect
Net income	Overstated	Understated

*Assume that the correct current ratio is greater than one.

EXERCISE 8-11 (10-15 minutes)

(a) $\frac{\$370,000}{\$200,000} = \underline{1.85 \text{ to } 1}$

(b) $\frac{\$370,000 + \$22,000 - \$13,000}{\$200,000 - \$15,000} = \frac{\$379,000}{\$185,000} = \underline{2.05 \text{ to } 1}$

Event	Effect of Error	Adjust Income Increase (Decrease)
1. Understatement of ending inventory	Decreases net income	\$22,000
2. Overstatement of purchases	Decreases net income	15,000
3. Overstatement of ending inventory	Increases net income	(13,000)
4. Overstatement of advertising expense; understatement of cost of goods sold		<u>0</u>
		<u>\$24,000</u>

EXERCISE 8-12 (15-20 minutes)

Errors in Inventories

<u>Year</u>	<u>Net Income Per Books</u>	<u>Add Overstate- ment Jan. 1</u>	<u>Deduct Understate- ment Jan. 1</u>	<u>Deduct Overstate- ment Dec. 31</u>	<u>Add Understate- ment Dec. 31</u>	<u>Corrected Net Income</u>
1999	\$ 50,000			\$3,000		\$ 47,000
2000	52,000	\$3,000		9,000		46,000
2001	54,000	9,000			\$11,000	74,000
2002	56,000		\$11,000			45,000
2003	58,000				2,000	60,000
2004	<u>60,000</u>		2,000	8,000		<u>50,000</u>
	\$330,000					\$322,000

EXERCISE 8-13 (15-20 minutes)

(a)	<u>Cost of Goods Sold</u>			<u>Ending Inventory</u>	
(1)	LIFO	500 @ \$13 =	\$ 6,500	300 @ \$10 =	\$3,000
		500 @ \$12 =	<u>6,000</u>	300 @ \$12 =	<u>3,600</u>
			<u>\$12,500</u>		<u>\$6,600</u>
(2)	FIFO	300 @ \$10 =	\$ 3,000	500 @ \$13 =	\$6,500
		700 @ \$12 =	<u>8,400</u>	100 @ \$12 =	<u>1,200</u>
			<u>\$11,400</u>		<u>\$7,700</u>
(b)	LIFO	100 @ \$10 =	\$ 1,000		
		300 @ \$12 =	3,600		
		200 @ \$13 =	<u>2,600</u>		
			<u>\$ 7,200</u>		

EXERCISE 8-13 (Continued)

(c) Sales	\$25,400	=	(\$24 X \$200) + (\$25 X \$500) + (\$27 X \$300)
Cost of Goods Sold	<u>11,400</u>		
Gross Profit (FIFO)	<u>\$14,000</u>		

Note: FIFO periodic and FIFO perpetual provide the same gross profit and inventory value.

- (d) LIFO matches more current costs with revenue. When prices are rising (as is generally the case), this results in a higher amount for cost of goods sold and a lower gross profit. As indicated in this exercise, prices were rising and cost of goods sold under LIFO was higher.

EXERCISE 8-14 (20-25 minutes)

(a) (1) LIFO	600 @ \$6.00 =	\$3,600
	100 @ \$6.08 =	<u>608</u>
		<u>\$4,208</u>

- (2) Average cost

$$\frac{\text{Total cost}}{\text{Total units}} = \frac{\$33,655^*}{5,300} = \$6.35 \text{ average cost per unit}$$

$$700 @ \$6.35 = \underline{\underline{\$4,445}}$$

EXERCISE 8-14 (Continued)

<u>*Units</u>		<u>Price</u>		<u>Total Cost</u>
600	@	\$6.00	=	\$ 3,600
1,500	@	\$6.08	=	9,120
800	@	\$6.40	=	5,120
1,200	@	\$6.50	=	7,800
700	@	\$6.60	=	4,620
<u>500</u>	@	\$6.79	=	<u>3,395</u>
<u>5,300</u>				<u>\$33,655</u>

(b) (1) FIFO 500 @ \$6.79 = \$3,395
200 @ \$6.60 = 1,320
\$4,715

(2) LIFO 100 @ \$6.00 = \$ 600
100 @ \$6.08 = 608
500 @ \$6.79 = 3,395
\$4,603

(c) Total merchandise available for sale \$33,655
Less inventory (FIFO) 4,715
Cost of goods sold \$28,940

(d) FIFO.

EXERCISE 8-15 (15-20 minutes)

(a) **Shania Twain Company**
COMPUTATION OF INVENTORY FOR PRODUCT
BAP UNDER FIFO INVENTORY METHOD
March 31, 2004

	<u>Units</u>	<u>Unit Cost</u>	<u>Total Cost</u>
March 26, 2004	600	\$12.00	\$ 7,200
February 16, 2004	800	11.00	8,800
January 25, 2004 (portion)	<u>200</u>	10.00	<u>2,000</u>
March 31, 2004, inventory	<u>1,600</u>		<u>\$18,000</u>

(b) **Shania Twain Company**
COMPUTATION OF INVENTORY FOR PRODUCT
BAP UNDER LIFO INVENTORY METHOD
March 31, 2004

	<u>Units</u>	<u>Unit Cost</u>	<u>Total Cost</u>
Beginning inventory	600	\$8.00	\$ 4,800
January 5, 2004 (portion)	<u>1,000</u>	9.00	<u>9,000</u>
March 31, 2004, inventory	<u>1,600</u>		<u>\$13,800</u>

(c) **Shania Twain Company**
COMPUTATION OF INVENTORY FOR PRODUCT
BAP UNDER WEIGHTED AVERAGE INVENTORY METHOD
March 31, 2004

	<u>Units</u>	<u>Unit Cost</u>	<u>Total Cost</u>
Beginning inventory	600	\$ 8.00	\$ 4,800
January 5, 2004	1,200	9.00	10,800
January 25, 2004	1,300	10.00	13,000
February 16, 2004	800	11.00	8,800
March 26, 2004	<u>600</u>	12.00	<u>7,200</u>
	<u>4,500</u>		<u>\$44,600</u>

Weighted average cost
(\$44,600 ÷ 4,500)

\$ 9.91*

March 31, 2004, inventory	<u>1,600</u>	<u>\$ 9.91</u>	<u>\$15,856</u>
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*Rounded off.

EXERCISE 8-16 (15-20 minutes)

- (a) (1) 2,100 units available for sale – 1,400 units sold = 700 units in the ending inventory.

$$500 @ \$4.58 = \$2,290$$

$$\underline{200 @ 4.60 = 920}$$

$$\underline{700} \qquad \underline{\$3,210} \text{ Ending inventory at FIFO cost.}$$

(2) 100 @ \$4.10 = \$ 410

$$\underline{600 @ 4.20 = 2,520}$$

$$\underline{700} \qquad \underline{\$2,930} \text{ Ending inventory at LIFO cost.}$$

- (3) \$9,240 cost of goods available for sale ÷ 2,100 units available for sale = \$4.40 weighted-average unit cost.

$$700 \text{ units} \times \$4.40 = \underline{\$3,080} \text{ Ending inventory at weighted-average cost.}$$

- (b) (1) LIFO will yield the lowest gross profit because this method will yield the highest cost of goods sold figure in the situation presented. The company has experienced rising purchase prices for its inventory acquisitions. In a period of rising prices, LIFO will yield the highest cost of goods sold because the most recent purchase prices (which are the higher prices in this case) are used to price cost of goods sold while the older (and lower) purchase prices are used to cost the ending inventory.

- (2) LIFO will yield the lowest ending inventory because LIFO uses the oldest costs to price the ending inventory units. The company has experienced rising purchase prices. The oldest costs in this case are the lower costs.

EXERCISE 8-17 (10-15 minutes)

(a) (1) 400 @ \$30 = \$12,000
160 @ \$25 = 4,000
\$16,000

(2) 400 @ \$20 = \$ 8,000
160 @ \$25 = 4,000
\$12,000

(b) (1) FIFO \$16,000 [same as (a)]

(2) LIFO 100 @ \$20 = \$ 2,000
60 @ \$25 = 1,500
400 @ \$30 = 12,000
\$15,500

EXERCISE 8-18 (15-20 minutes)

	<u>First-in, first-out</u>	<u>Last-in, first-out</u>
Sales	\$1,050,000	\$1,050,000
Cost of goods sold:		
Inventory, Jan. 1	\$120,000	\$120,000
Purchases	<u>592,000*</u>	<u>592,000</u>
Cost of goods available	712,000	712,000
Inventory, Dec. 31	<u>235,000**</u>	<u>164,000***</u>
Cost of goods sold	<u>477,000</u>	<u>548,000</u>
Gross profit	573,000	502,000
Operating expenses	<u>200,000</u>	<u>200,000</u>
Net income	<u>\$ 373,000</u>	<u>\$ 302,000</u>

***Purchases**

6,000 @ \$22 =	\$132,000
10,000 @ \$25 =	250,000
7,000 @ \$30 =	<u>210,000</u>
	<u>\$592,000</u>

****Computation of inventory, Dec. 31:**

First-in, first-out:

7,000 units @ \$30 =	\$210,000
1,000 units @ \$25 =	<u>25,000</u>
	<u>\$235,000</u>

*****Last-in, first-out:**

6,000 units @ \$20 =	\$120,000
2,000 units @ \$22 =	<u>44,000</u>
	<u>\$164,000</u>

EXERCISE 8-19 (20-25 minutes)

**Sandy Alomar Corporation
SCHEDULES OF COST OF GOODS SOLD
For the First Quarter Ended March 31, 2004**

	Schedule 1 First-in, First-out	Schedule 2 Last-in, First-out
Beginning inventory	\$ 40,000	\$ 40,000
Plus purchases	<u>146,200*</u>	<u>146,200</u>
Cost of goods available for sale	186,200	186,200
Less ending inventory	<u>61,300</u>	<u>56,800</u>
Cost of goods sold	<u>\$124,900</u>	<u>\$129,400</u>

*(\$33,600 + \$25,500 + \$38,700 + \$48,400)

Schedules Computing Ending Inventory

	Units
Beginning inventory	10,000
Plus purchases	<u>34,000</u>
Units available for sale	44,000
Less sales (\$150,000 ÷ 5)	<u>30,000</u>
Ending inventory	<u>14,000</u>

The unit computation is the same for both assumptions, but the cost assigned to the units of ending inventory are different.

First-in, First-out (Schedule 1)	Last-in, First-out (Schedule 2)
11,000 at \$4.40 = \$48,400	10,000 at \$4.00 = \$40,000
<u>3,000 at \$4.30 = 12,900</u>	<u>4,000 at \$4.20 = 16,800</u>
<u>14,000 \$61,300</u>	<u>14,000 \$56,800</u>

EXERCISE 8-20 (10-15 minutes)

(a) FIFO Ending Inventory 12/31/04

76 @ \$10.89*	=	\$ 827.64
24 @ \$11.88**	=	<u>285.12</u>
		<u>\$1,112.76</u>

*[\$11.00 – .01 (\$11.00)]

**[\$12.00 – .01 (\$12.00)]

(b) LIFO Cost of Goods Sold—2004

76 @ \$10.89	=	\$ 827.64
84 @ \$11.88	=	997.92
90 @ \$14.85*	=	1,336.50
15 @ \$15.84**	=	<u>237.60</u>
		<u>\$3,399.66</u>

*[\$15.00 – .01 (\$15)]

**[\$16.00 – .01 (\$16)]

- (c) FIFO matches older costs with revenue. When prices are declining, as in this case, this results in a higher amount for cost of goods sold. Therefore, it is recommended that FIFO be used by Howie Long Shop to minimize taxable income.

EXERCISE 8-21 (10-15 minutes)

- (a) The difference between the inventory used for internal reporting purposes and LIFO is referred to as the Allowance to Reduce Inventory to LIFO or the LIFO reserve. The change in the allowance balance from one period to the next is called the LIFO effect (or as shown in this example, the LIFO adjustment).
- (b) LIFO subtracts inflation from inventory costs by charging the items purchased recently to cost of goods sold. As a result, ending inventory (assuming increasing prices) will be lower than FIFO or average cost.

EXERCISE 8-21 (Continued)

(c) Cash flow was computed as follows:

Revenue	\$3,200,000
Cost of goods sold	(2,800,000)
Operating expenses	(150,000)
Income taxes	<u>(75,600)</u>
Cash Flow	<u>\$ 174,400</u>

If the company has any sales on account or payables, then the cash flow number is incorrect. It is assumed here that the cash basis of accounting is used.

(d) The company has extra cash because its taxes are less. The reason taxes are lower is because cost of goods sold (in a period of inflation) is higher under LIFO than FIFO. As a result, net income is lower which leads to lower income taxes. If prices are decreasing, the opposite effect results.

EXERCISE 8-22 (25-30 minutes)

(a) (1) Ending inventory—Specific Identification

Date	No. Units	Unit Cost	Total Cost
December 2	100	\$30	\$3,000
July 20	<u>50</u>	25	<u>1,250</u>
	<u>150</u>		<u>\$4,250</u>

(2) Ending inventory—FIFO

Date	No. Units	Unit Cost	Total Cost
December 2	100	\$30	\$3,000
September 4	<u>50</u>	28	<u>1,400</u>
	<u>150</u>		<u>\$4,400</u>

(3) Ending inventory—LIFO

Date	No. Units	Unit Cost	Total Cost
January 1	100	\$20	\$2,000
March 15	<u>50</u>	24	<u>1,200</u>
	<u>150</u>		<u>\$3,200</u>

EXERCISE 8-22 (Continued)

(4) Ending inventory—Average Cost

<u>Date</u>	<u>Explanation</u>	<u>No. Units</u>	<u>Unit Cost</u>	<u>Total Cost</u>
January 1	Beginning inventory	100	\$20	\$ 2,000
March 15	Purchase	300	24	7,200
July 20	Purchase	300	25	7,500
September 4	Purchase	200	28	5,600
December 2	Purchase	<u>100</u>	30	<u>3,000</u>
		<u>1,000</u>		<u>\$25,300</u>

$$\$25,300 \div 1,000 = \$25.30$$

Ending Inventory—Average Cost

<u>No. Units</u>	<u>Unit Cost</u>	<u>Total Cost</u>
150	\$25.30	\$3,795

(b) Double Extension Method

<u>Base-Year Costs</u>			<u>Current Costs</u>		
<u>Units</u>	<u>Base-Year Cost Per Unit</u>	<u>Total</u>	<u>Units</u>	<u>Current-Year Cost Per Unit</u>	<u>Total</u>
150	\$20	\$3,000	100	\$30	\$3,000
			50	\$28	<u>1,400</u>
					<u>\$4,400</u>

$$\frac{\text{Ending Inventory for the Period at Current Cost } \$4,400}{\text{Ending Inventory for the Period at Base-Year Cost } \$3,000} = 1.4667$$

Ending inventory at base-year prices ($\$4,400 \div 1.4667$)	\$3,000
Base layer (100 units at \$20)	<u>2,000</u>
Increment in base-year dollars	1,000
Current index	<u>1.4667</u>
Increment in current dollars	1,467
Base layer (100 units at \$20)	<u>2,000</u>
Ending inventory at dollar-value LIFO	<u>\$3,467</u>

EXERCISE 8-23 (5-10 minutes)

$\$97,000 - \$92,000 = \$5,000$ increase at base prices.
 $\$98,350 - \$92,600 = \$5,750$ increase in dollar-value LIFO value.
 $\$5,000 \times \text{Index} = \$5,750$.
 $\text{Index} = \$5,750 \div \$5,000$.
 $\text{Index} = \underline{115}$

EXERCISE 8-24 (15-20 minutes)

(a)	12/31/04 inventory at 1/1/04 prices, $\$140,000 \div 1.12$	\$125,000
	Inventory 1/1/04	<u>160,000</u>
	Inventory decrease at base prices	<u>\$ 35,000</u>
	Inventory at 1/1/04 prices	\$160,000
	Less decrease at 1/1/04 prices	<u>35,000</u>
	Inventory 12/31/04 under dollar-value LIFO method	<u>\$125,000</u>
(b)	12/31/05 inventory at base prices, $\$172,500 \div 1.15$	\$150,000
	12/31/04 inventory at base prices	<u>125,000</u>
	Inventory increment at base prices	<u>\$ 25,000</u>
	Inventory at 12/31/04	\$125,000
	Increment added during 2005 at 12/31/05 prices, $\$25,000 \times 1.15$	<u>28,750</u>
	Inventory 12/31/05	<u>\$153,750</u>

EXERCISE 8-25 (20-25 minutes)

	Current \$	Price Index	Base Year \$	Change from Prior Year
2001	\$ 80,000	1.00	\$ 80,000	—
2002	115,500	1.05	110,000	\$+30,000
2003	108,000	1.20	90,000	(20,000)
2004	122,200	1.30	94,000	+4,000
2005	154,000	1.40	110,000	+16,000
2006	176,900	1.45	122,000	+12,000

EXERCISE 8-25 (Continued)

Ending Inventory—Dollar-value LIFO:

2001	<u>\$80,000</u>		2005	\$80,000 @ 1.00 =	\$ 80,000
				10,000 @ 1.05 =	10,500
2002	\$80,000 @ 1.00 =	\$ 80,000		4,000 @ 1.30 =	5,200
	30,000 @ 1.05 =	<u>31,500</u>		16,000 @ 1.40 =	<u>22,400</u>
		<u>\$111,500</u>			<u>\$118,100</u>
2003	\$80,000 @ 1.00 =	\$ 80,000	2006	\$80,000 @ 1.00 =	\$ 80,000
	10,000 @ 1.05 =	<u>10,500</u>		10,000 @ 1.05 =	10,500
		<u>\$ 90,500</u>		4,000 @ 1.30 =	5,200
2004	\$80,000 @ 1.00 =	\$ 80,000		16,000 @ 1.40 =	22,400
	10,000 @ 1.05 =	10,500		12,000 @ 1.45 =	<u>17,400</u>
	4,000 @ 1.30 =	<u>5,200</u>			<u>\$135,500</u>
		<u>\$ 95,700</u>			

EXERCISE 8-26 (15-20 minutes)

<u>Date</u>	<u>Current \$</u>	<u>Price Index</u>	<u>Base-Year \$</u>	<u>Change from Prior Year</u>
Dec. 31, 2000	\$ 70,000	1.00	\$70,000	—
Dec. 31, 2001	90,300	1.05	86,000	+\$16,000
Dec. 31, 2002	95,120	1.16	82,000	(4,000)
Dec. 31, 2003	105,600	1.20	88,000	+6,000
Dec. 31, 2004	100,000	1.25	80,000	(8,000)

EXERCISE 8-26 (Continued)

Ending Inventory—Dollar-value LIFO:

Dec. 31, 2000 \$70,000

Dec. 31, 2001 \$70,000 @ 1.00 = \$70,000
16,000 @ 1.05 = 16,800
\$86,800

Dec. 31, 2002 \$70,000 @ 1.00 = \$70,000
12,000 @ 1.05 = 12,600
\$82,600

Dec. 31, 2003 \$70,000 @ 1.00 = \$70,000
12,000 @ 1.05 = 12,600
6,000 @ 1.20 = 7,200
\$89,800

Dec. 31, 2004 \$70,000 @ 1.00 = \$70,000
10,000 @ 1.05 = 10,500
\$80,500

TIME AND PURPOSE OF PROBLEMS

Problem 8-1 (Time 30 –40 minutes)

Purpose—to provide a multipurpose problem with trade discounts, goods in transit, computing internal price indexes, dollar-value LIFO, comparative FIFO, LIFO, and average cost computations, and inventoriable cost identification.

Problem 8-2 (Time 25-35 minutes)

Purpose—to provide the student with eight different situations that require analysis to determine their impact on inventory, accounts payable, and net sales.

Problem 8-3 (Time 20-25 minutes)

Purpose—to provide the student with an opportunity to prepare general journal entries to record purchases on a gross and net basis.

Problem 8-4 (Time 40-55 minutes)

Purpose—to provide a problem where the student must compute the inventory using a FIFO, LIFO, and average cost assumption. These inventory value determinations must be made under two differing assumptions: (1) perpetual inventory records are kept in units only and (2) perpetual records are kept in dollars. Many detailed computations must be made in this problem.

Problem 8-5 (Time 40-55 minutes)

Purpose—to provide a problem where the student must compute the inventory using a FIFO, LIFO, and average cost assumption. These inventory value determinations must be made under two differing assumptions: (1) perpetual inventory records are kept in units only and (2) perpetual records are kept in dollars. This problem is very similar to Problem 8-4, except that the differences in inventory values must be explained.

Problem 8-6 (Time 25-35 minutes)

Purpose—to provide a problem where the student must compute cost of goods sold using FIFO, LIFO, and weighted average, under both a periodic and perpetual system.

Problem 8-7 (Time 30-40 minutes)

Purpose—to provide a problem where the student must identify the accounts that would be affected if LIFO had been used rather than FIFO for purposes of computing inventories.

Problem 8-8 (Time 30-40 minutes)

Purpose—to provide a problem which covers the use of inventory pools for dollar-value LIFO. The student is required to compute ending inventory, cost of goods sold, and gross profit using dollar-value LIFO, first with one inventory pool and then with three pools.

Problem 8-9 (Time 25-35 minutes)

Purpose—the student computes the internal conversion price indexes for a LIFO inventory pool and then computes the inventory amounts using the dollar-value LIFO method.

Problem 8-10 (Time 30-35 minutes)

Purpose—to provide the student with the opportunity to compute inventories using the dollar-value approach. An index must be developed in this problem to price the new layers. This problem will prove difficult for the student because the indexes are hidden.

Problem 8-11 (Time 40-50 minutes)

Purpose—to provide the student with an opportunity to write a memo on how a dollar-value LIFO pool works. In addition, the student must explain the step-by-step procedure used to compute dollar value LIFO.

SOLUTIONS TO PROBLEMS

PROBLEM 8-1

1. $\$150,000 - (\$150,000 \times .20) = \$120,000$;
 $\$120,000 - (\$120,000 \times .10) = \underline{\$108,000}$, cost of goods purchased

2. $\$1,100,000 + \$69,000 = \$1,169,000$. The \$69,000 of goods in transit on which title had passed on December 24 (f.o.b. shipping point) should be added to 12/31/03 inventory. The \$29,000 of goods shipped (f.o.b. shipping point) on January 3, 2004, should remain part of the 12/31/03 inventory.

3. Because no date was associated with the units issued or sold, the periodic (rather than perpetual) inventory method must be assumed.

<u>FIFO inventory cost:</u>	1,000 units at \$24	\$ 24,000
	1,100 units at 23	<u>25,300</u>
	Total	<u>\$ 49,300</u>

<u>LIFO inventory cost:</u>	1,500 units at \$21	\$ 31,500
	600 units at 22	<u>13,200</u>
	Total	<u>\$ 44,700</u>

<u>Average cost:</u>	1,500 at \$21	\$ 31,500
	2,000 at 22	44,000
	3,500 at 23	80,500
	<u>1,000 at 24</u>	<u>24,000</u>
Totals	<u>8,000</u>	<u>\$180,000</u>

$\$180,000 \div 8,000 = \22.50

Ending inventory (2,100 X \$22.50) is \$47,250.

PROBLEM 8-1 (Continued)

4. Computation of price indexes:

$$12/31/03 \frac{\$252,000}{\$240,000} = 105$$

$$12/31/04 \frac{\$286,720}{\$256,000} = 112$$

Dollar-value LIFO inventory 12/31/03:

Increase \$240,000 – \$200,000 =	\$ 40,000	
12/31/03 price index	X 1.05	
Increase in terms of 105	42,000	2003 Layer
Base inventory	<u>200,000</u>	
Dollar-value LIFO inventory	<u>\$242,000</u>	

Dollar-value LIFO inventory 12/31/04:

Increase \$256,000 – \$240,000 =	\$ 16,000	
12/31/02 price index	X 1.12	
Increase in terms of 112	17,920	2004 Layer
2003 layer	42,000	
Base inventory	<u>200,000</u>	
Dollar-value LIFO inventory	<u>\$259,920</u>	

5. The inventoriable costs for 2004 are:

Merchandise purchased		\$909,400
Add: Freight-in		<u>22,000</u>
		931,400
Deduct: Purchase returns	\$16,500	
Purchase discounts	<u>6,800</u>	<u>23,300</u>
Inventoriable cost		<u>\$908,100</u>

PROBLEM 8-2

**James T. Kirk Company
Schedule of Adjustments
December 31, 2004**

	Inventory	Accounts Payable	Net Sales
Initial amounts	<u>\$1,520,000</u>	<u>\$1,200,000</u>	<u>\$8,150,000</u>
Adjustments:			
1.	NONE	NONE	(40,000)
2.	71,000	71,000	NONE
3.	30,000	NONE	NONE
4.	32,000	NONE	(47,000)
5.	21,000	NONE	NONE
6.	27,000	NONE	NONE
7.	NONE	56,000	NONE
8.	<u>3,000</u>	<u>6,000</u>	<u>NONE</u>
Total adjustments	<u>184,000</u>	<u>133,000</u>	<u>(87,000)</u>
Adjusted amounts	<u>\$1,704,000</u>	<u>\$1,333,000</u>	<u>\$8,063,000</u>

1. The \$31,000 of tools on the loading dock were properly included in the physical count. The sale should not be recorded until the goods are picked up by the common carrier. Therefore, no adjustment is made to inventory, but sales must be reduced by the \$40,000 billing price.
2. The \$71,000 of goods in transit from a vendor to James T. Kirk were shipped f.o.b. shipping point on 12/29/04. Title passes to the buyer as soon as goods are delivered to the common carrier when sold f.o.b. shipping point. Therefore, these goods are properly includable in Kirk's inventory and accounts payable at 12/31/04. Both inventory and accounts payable must be increased by \$71,000.
3. The work-in-process inventory sent to an outside processor is Kirk's property and should be included in ending inventory. Since this inventory was not in the plant at the time of the physical count, the inventory column must be increased by \$30,000.

PROBLEM 8-2 (Continued)

- 4. The tools costing \$32,000 were recorded as sales (\$47,000) in 2004. However, these items were returned by customers on December 31, so 2004 net sales should be reduced by the \$47,000 return. Also, \$32,000 has to be added to the inventory column since these goods were not included in the physical count.**
- 5. The \$21,000 of Kirk's tools shipped to a customer f.o.b. destination are still owned by Kirk while in transit because title does not pass on these goods until they are received by the buyer. Therefore, \$21,000 must be added to the inventory column. No adjustment is necessary in the sales column because the sale was properly recorded in 2005 when the customer received the goods.**
- 6. The goods received from a vendor at 5:00 p.m. on 12/31/04 should be included in the ending inventory, but were not included in the physical count. Therefore, \$27,000 must be added to the inventory column. No adjustment is made to accounts payable, since the invoice was included in 12/31/04 accounts payable.**
- 7. The \$56,000 of goods received on 12/26/04 were properly included in the physical count of inventory; \$56,000 must be added to accounts payable since the invoice was not included in the 12/31/04 accounts payable balance.**
- 8. Since one-half of the freight-in cost (\$6,000) pertains to merchandise properly included in inventory as of 12/31/04, \$3,000 should be added to the inventory column. The remaining \$3,000 debit should be reflected in cost of goods sold. The full \$6,000 must be added to accounts payable since the liability was not recorded.**

PROBLEM 8-3

(a)	(1)	8/10	Purchases	9,000	
			Accounts Payable		9,000
		8/13	Accounts Payable	1,200	
			Purchase Returns and Allowances		1,200
		8/15	Purchases	12,000	
			Accounts Payable		12,000
		8/25	Purchases	15,000	
			Accounts Payable		15,000
		8/28	Accounts Payable	12,000	
			Cash		12,000

- (2) **Purchases**—addition in cost of goods sold section of income statement.
Purchase returns and allowances—deduction from purchases in cost of goods sold section of the income statement.
Accounts payable—current liability in the current liabilities section of the balance sheet.

(b)	(1)	8/10	Purchases	8,820	
			Accounts Payable (\$9,000 X .98)		8,820
		8/13	Accounts Payable	1,176	
			Purchase Returns and Allowances (\$1,200 X .98)		1,176

PROBLEM 8-3 (Continued)

	8/15		
Purchases		11,880	
Accounts Payable (\$12,000 X .99)			11,880
	8/25		
Purchases		14,700	
Accounts Payable (\$15,000 X .98)			14,700
	8/28		
Accounts Payable		11,880	
Purchase Discounts Lost		120	
Cash			12,000
2.	8/31		
Purchase Discounts Lost		156	
Accounts Payable			
(.02 X [\$9,000 – \$1,200])			156
3.			
Same as part (a) (2) except:			
Purchase Discounts Lost—treat as financial expense in income statement.			

- (c) The second method is better theoretically because it results in the inventory being carried net of purchase discounts, and purchase discounts not taken are shown as an expense. The first method is normally used, however, for practical reasons.

PROBLEM 8-4

(a)	Purchases		Sales	
	Total Units		Total Units	
	April 1 (balance on hand)	100	April 5	300
	April 4	400	April 12	200
	April 11	300	April 27	800
	April 18	200	April 28	100
	April 26	500	Total units	1,400
	April 30	200		
	Total units	1,700		
	Total units sold	1,400		
	Total units (ending inventory)	300		

Assuming costs are not computed for each withdrawal:

(1) First-in, first-out.

Date of Invoice	No. Units	Unit Cost	Total Cost
April 30	200	\$5.80	\$1,160
April 26	100	5.60	560
			\$1,720

(2) Last-in, first-out.

Date of Invoice	No. Units	Unit Cost	Total Cost
April 1	100	\$5.00	\$ 500
April 4	200	5.10	1,020
			\$1,520

PROBLEM 8-4 (Continued)

(3) Average cost.

Cost of Part X available.

<u>Date of Invoice</u>	<u>No. Units</u>	<u>Unit Cost</u>	<u>Total Cost</u>
April 1	100	\$5.00	\$ 500
April 4	400	5.10	2,040
April 11	300	5.30	1,590
April 18	200	5.35	1,070
April 26	500	5.60	2,800
April 30	<u>200</u>	5.80	<u>1,160</u>
Total Available	<u>1,700</u>		<u>\$9,160</u>

Average cost per unit = $\$9,160 \div 1,700 = \5.39 .

Inventory, April 30 = $300 \times \$5.39 = \$1,617$.

(b) Assuming costs are computed for each withdrawal:

(1) First-in, first out.

The inventory would be the same in amount as in part (a), \$1,720.

PROBLEM 8-4 (Continued)

(2) Last-in, first-out.

Date	Purchased		Sold		Balance*		
	No. of units	Unit cost	No. of units	Unit cost	No. of units	Unit cost	Amount
April 1	100	\$5.00			100	\$5.00	\$ 500
April 4	400	5.10			100	5.00	2,540
					400	5.10	
April 5			300	\$5.10	100	5.00	1,010
					100	5.10	
April 11	300	5.30			100	5.00	2,600
					100	5.10	
					300	5.30	
April 12			200	5.30	100	5.00	1,540
					100	5.10	
					100	5.30	
April 18	200	5.35			100	5.00	2,610
					100	5.10	
					100	5.30	
					200	5.35	
April 26	500	5.60			100	5.00	5,410
					100	5.10	
					100	5.30	
					200	5.35	
					500	5.60	
April 27			500 @	5.60			1,010
			800	200 @	5.35		
				100 @	5.30		
April 28			100	5.10	100	5.00	500
April 30	200	5.80			100	5.00	1,660
					200	5.80	

Inventory April 30 is \$1,660.

***The balance on hand is listed in detail after each transaction.**

PROBLEM 8-4 (Continued)**(3) Average cost.**

Date	Purchased		Sold		Balance		
	No. of units	Unit cost	No. of units	Unit cost	No. of units	Unit cost*	Amount
April 1	100	\$5.00			100	\$5.0000	\$ 500.00
April 4	400	5.10			500	5.0800	2,540.00
April 5			300	\$5.0800	200	5.0800	1,016.00
April 11	300	5.30			500	5.2120	2,606.00
April 12			200	5.2120	300	5.2120	1,563.60
April 18	200	5.35			500	5.2672	2,633.60
April 26	500	5.60			1,000	5.4336	5,433.60
April 27			800	5.4336	200	5.4336	1,086.72
April 28			100	5.4336	100	5.4336	543.36
April 30	200	5.80			300	5.6779	1,703.36

Inventory April 30 is \$1,703.

***Four decimal places are used to minimize rounding errors.**

PROBLEM 8-5

- (a) Assuming costs are not computed for each withdrawal (units received, 5,600, minus units issued, 4,700, equals ending inventory at 900 units):

(1) First-in, first-out.

Date of Invoice	No. Units	Unit Cost	Total Cost
Jan. 28	900	\$3.60	<u>\$3,240</u>

(2) Last-in, first-out.

Date of Invoice	No. Units	Unit Cost	Total Cost
Jan. 2	900	\$3.00	<u>\$2,700</u>

(3) Average cost.

Cost of goods available:

Date of Invoice	No. Units	Unit Cost	Total Cost
Jan. 2	1,200	\$3.00	\$ 3,600
Jan. 10	600	3.20	1,920
Jan. 18	1,000	3.30	3,300
Jan. 23	1,300	3.40	4,420
Jan. 28	<u>1,500</u>	3.60	<u>5,400</u>
Total Available	<u>5,600</u>		<u>\$18,640</u>

Average cost per unit = $\$18,640 \div 5,600 = \$ 3.33$

Cost of inventory Jan. 31 = $900 \times \$3.33 = \underline{\$2,997}$

- (b) Assuming costs are computed at the time of each withdrawal:

Under FIFO—Yes. The amount shown as ending inventory would be the same as in (a) above. In each case the units on hand would be assumed to be part of those purchased on Jan. 28.

Under LIFO—No. During the month the available balance dropped below the ending inventory quantity so that the layers of oldest costs were partially liquidated during the month.

PROBLEM 8-5 (Continued)

Under Average Cost—No. A new average cost would be computed each time a withdrawal was made instead of only once for all items purchased during the year.

The calculations to determine the inventory on this basis are given below.

(1) **First-in, first-out.**
The inventory would be the same in amount as in part (a), \$3,240.

(2) **Last-in, first-out.**

Date	Received		Issued		Balance		
	No. of units	Unit cost	No. of units	Unit cost	No. of units	Unit cost*	Amount
Jan. 2	1,200	\$3.00			1,200	\$3.00	\$3,600
Jan. 7			700	\$3.00	500	3.00	1,500
Jan. 10	600	3.20			500	3.00	3,420
					600	3.20	
Jan. 13			500	3.20	500	3.00	1,820
					100	3.20	
Jan. 18	1,000	3.30	300	3.30	500	3.00	4,130
					100	3.20	
					700	3.30	
Jan. 20			700	3.30			
			100	3.20			
			300	3.00	200	3.00	600
Jan. 23	1,300	3.40			200	3.00	5,020
					1,300	3.40	
Jan. 26			800	3.40	200	3.00	2,300
					500	3.40	
Jan. 28	1,500	3.60			200	3.00	7,700
					500	3.40	
					1,500	3.60	
Jan. 31			1,300	3.60	200	3.00	3,020
					500	3.40	
					200	3.60	

Inventory, January 31 is \$3,020.

PROBLEM 8-5 (Continued)

(3) Average cost.

Date	Received		Issued		Balance		
	No. of units	Unit cost	No. of units	Unit cost	No. of units	Unit cost*	Amount
Jan. 2	1,200	\$3.00			1,200	\$3.0000	\$3,600
Jan. 7			700	\$3.0000	500	3.0000	1,500
Jan. 10	600	3.20			1,100	3.1091	3,420
Jan. 13			500	3.1091	600	3.1091	1,865
Jan. 18	1,000	3.30	300	3.2281	1,300	3.2281	4,197
Jan. 20			1,100	3.2281	200	3.2281	646
Jan. 23	1,300	3.40			1,500	3.3773	5,066
Jan. 26			800	3.3773	700	3.3773	2,364
Jan. 28	1,500	3.60			2,200	3.5291	7,764
Jan. 31			1,300	3.5291	900	3.5291	3,176

Inventory, January 31 is \$3,176.

***Four decimal places are used to minimize rounding errors.**

PROBLEM 8-6

(a)	Beginning inventory	1,000
	Purchases (2,000 + 3,000)	<u>5,000</u>
	Units available for sale	6,000
	Sales (2,500 + 2,000)	<u>4,500</u>
	Goods on hand	<u>1,500</u>

Periodic FIFO

1,000 X \$12 =		\$12,000
2,000 X \$18 =		36,000
<u>1,500 X \$23 =</u>		<u>34,500</u>
<u>4,500</u>		<u>\$82,500</u>

(b) **Perpetual FIFO**
 Same as periodic: \$82,500

(c) **Periodic LIFO**

3,000 X \$23 =		\$69,000
<u>1,500 X \$18 =</u>		<u>27,000</u>
<u>4,500</u>		<u>\$96,000</u>

(d) **Perpetual LIFO**

Date	Purchased	Sold	Balance
1/1			1,000 X \$12 = \$12,000
2/4	2,000 X \$18 = \$36,000		1,000 X \$12 } 2,000 X \$18 } \$48,000
2/20		2,000 X \$18 } 500 X \$12 } \$42,000	500 X \$12 = \$ 6,000
4/2	3,000 X \$23 = \$69,000		500 X \$12 } 3,000 X \$23 } \$75,000
11/4		2,000 X \$23 = \$46,000	500 X \$12 } 1,000 X \$23 } \$29,000
		<u>\$88,000</u>	

PROBLEM 8-6 (Continued)

(e) Periodic weighted-average

1,000 X \$12 =	\$ 12,000		
2,000 X \$18 =	36,000		
3,000 X \$23 =	<u>69,000</u>		4,500
	<u>\$117,000</u>	÷ 6,000 =	<u>\$19.50</u>
			X <u>\$19.50</u>
			<u>\$87,750</u>

(f) Perpetual moving average

<u>Date</u>	<u>Purchased</u>	<u>Sold</u>	<u>Balance</u>
1/1			1,000 X \$12 = \$12,000
2/4	2,000 X \$18 = \$36,000		3,000 X \$16 = 48,000
2/20		2,500 X \$16 = \$40,000	500 X \$16 = 8,000
4/2	3,000 X \$23 = \$69,000		3,500 X \$22 ^a = 77,000
11/4		2,000 X \$22 = <u>44,000</u>	1,500 X \$22 = 33,000
		<u>\$84,000</u>	

^a	500 X \$16 = \$ 8,000
	<u>3,000 X \$23 = 69,000</u>
	<u>3,500</u> <u>\$77,000</u>

$$(\$77,000 \div 3,500 = \$22)$$

PROBLEM 8-7

The accounts in the 2005 financial statements which would be affected by a change to LIFO and the new amount for each of the accounts are as follows:

Account	New amount for 2005
(1) Cash	\$165,600
(2) Inventory	120,000
(3) Retained earnings	215,600
(4) Cost of goods sold	810,000
(5) Income taxes	94,400

The calculations for both 2004 and 2005 to support the conversion to LIFO are presented below.

Income for the Years Ended	12/31/04	12/31/05
Sales	<u>\$900,000</u>	<u>\$1,350,000</u>
Less: Cost of goods sold	525,000	810,000
Other expenses	<u>205,000</u>	<u>304,000</u>
	<u>730,000</u>	<u>1,114,000</u>
Income before taxes	170,000	236,000
Income taxes (40%)	<u>68,000</u>	<u>94,400</u>
Net income	<u>\$102,000</u>	<u>\$ 141,600</u>

Cost of Good Sold and Ending Inventory for the Years Ended	12/31/04	12/31/05
Beginning inventory (40,000 X \$3.00)	\$120,000	(40,000 X \$3.00) \$120,000
Purchases (150,000 X \$3.50)	<u>525,000</u>	(180,000 X \$4.50) <u>810,000</u>
Cost of goods available	645,000	930,000
Ending inventory (40,000 X \$3.00)	<u>120,000</u>	(40,000 X \$3.00) <u>120,000</u>
Cost of goods sold	<u>\$525,000</u>	<u>\$810,000</u>

Determination of Cash at	12/31/04	12/31/05
Income taxes under FIFO	\$ 76,000	\$110,400
Income taxes as calculated under LIFO	<u>68,000</u>	<u>94,400</u>
Increase in cash	8,000	16,000
Adjust cash at 12/31/05 for 2004 tax difference	<u>—</u>	<u>8,000</u>
Total increase in cash	8,000	24,000
Cash balance under FIFO	<u>130,000</u>	<u>141,600</u>
Cash balance under LIFO	<u>\$138,000</u>	<u>\$165,600</u>

PROBLEM 8-7 (Continued)

<u>Determination of Retained Earnings at</u>	<u>12/31/04</u>	<u>12/31/05</u>
Net income under FIFO	\$114,000	\$165,600
Net income under LIFO	<u>102,000</u>	<u>141,600</u>
Reduction in retained earnings	12,000	24,000
Adjust retained earnings at 12/31/05 for 2004 reduction	<u>—</u>	<u>12,000</u>
Total reduction in retained earnings	12,000	36,000
Retained earnings under FIFO	<u>200,000</u>	<u>251,600</u>
Retained earnings under LIFO	<u>\$188,000</u>	<u>\$215,600</u>

PROBLEM 8-8

- (a) 1. Ending inventory in units
- | | | |
|----------|-----------------------------|----------------------|
| Portable | $6,000 + 15,000 - 14,000 =$ | 7,000 |
| Midsize | $8,000 + 20,000 - 24,000 =$ | 4,000 |
| Console | $3,000 + 10,000 - 6,000 =$ | <u>7,000</u> |
| | | <u>18,000</u> |
2. Ending inventory at current cost
- | | | |
|----------|------------------------|---------------------------|
| Portable | $7,000 \times \$120 =$ | \$ 840,000 |
| Midsize | $4,000 \times \$300 =$ | 1,200,000 |
| Console | $7,000 \times \$460 =$ | <u>3,220,000</u> |
| | | <u>\$5,260,000</u> |
3. Ending inventory at base-year cost
- | | | |
|----------|------------------------|---------------------------|
| Portable | $7,000 \times \$100 =$ | \$ 700,000 |
| Midsize | $4,000 \times \$250 =$ | 1,000,000 |
| Console | $7,000 \times \$400 =$ | <u>2,800,000</u> |
| | | <u>\$4,500,000</u> |
4. Price index
 $\$5,260,000 \div \$4,500,000 = 1.1689$
5. Ending inventory
- | | | |
|-------------------------------|--|---------------------------|
| $\$3,800,000 \times 1.0000 =$ | | \$3,800,000 |
| $700,000^* \times 1.1689 =$ | | <u>818,230</u> |
| | | <u>\$4,618,230</u> |
- *($\$4,500,000 - \$3,800,000 = \$700,000$)
6. Cost of goods sold
- | | | |
|--|--|----------------------------|
| Beginning inventory | | \$ 3,800,000 |
| Purchases | | |
| $[(15,000 \times \$120) + (20,000 \times \$300) +$ | | |
| $(10,000 \times \$460)]$ | | <u>12,400,000</u> |
| Cost of goods available | | 16,200,000 |
| Ending inventory | | <u>4,618,230</u> |
| Cost of goods sold | | <u>\$11,581,770</u> |

PROBLEM 8-9

(a) **Adis Abeba Wholesalers Inc.**
Computation of Internal Conversion Price Index
for Inventory Pool No. 1 Double Extension Method

Current inventory at current-year cost			
Product A	17,000 X \$35 =	\$595,000	13,000 X \$40 = \$520,000
Product B	9,000 X \$26 =	<u>234,000</u>	10,000 X \$32 = <u>320,000</u>
		<u>\$829,000</u>	<u>\$840,000</u>
Current inventory at base cost			
Product A	17,000 X \$30 =	\$510,000	13,000 X \$30 = \$390,000
Product B	9,000 X \$25 =	<u>225,000</u>	10,000 X \$25 = <u>250,000</u>
		<u>\$735,000</u>	<u>\$640,000</u>
Conversion price index		$\$829,000 \div \$735,000 = 1.13$	$\$840,000 \div \$640,000 = 1.31$

(b) **Adis Abeba Wholesalers Inc.**
Computation of Inventory Amounts
under Dollar-Value LIFO Method for Inventory Pool No. 1
at December 31, 2003 and 2004

	<u>Current Inventory at base cost</u>	<u>Conversion price index</u>	<u>Inventory at LIFO cost</u>
December 31, 2003			
Base inventory	\$525,000	1.00	\$525,000
2003 layer (\$735,000 – \$525,000)	<u>210,000</u>	1.13 (a)	<u>237,300</u>
Total	<u>\$735,000</u> (a)		<u>\$762,300</u>
December 31, 2004			
Base inventory	\$525,000	1.00	\$525,000
2003 layer (remaining)	<u>115,000</u> (b)	1.13 (a)	<u>129,950</u>
Total	<u>\$640,000</u> (a)		<u>\$654,950</u>

(a) Per schedule for instruction (a).

(b) After liquidation of \$95,000 base cost (\$735,000 – \$640,000).

PROBLEM 8-10

	Base-Year Cost	Index %	Dollar-Value LIFO
<u>December 31, 2002</u>			
January 1, 2002, base	\$45,000	100	\$45,000
December 31, 2002, layer	<u>11,000</u>	115*	<u>12,650</u>
	<u>\$56,000</u>		<u>\$57,650</u>
 <u>December 31, 2003</u>			
January 1, 2003, base	\$45,000	100	\$45,000
December 31, 2003, layer	11,000	115	12,650
December 31, 2004, layer	<u>12,400</u>	128**	<u>15,872</u>
	<u>\$68,400</u>		<u>\$73,522</u>
 <u>December 31, 2004</u>			
January 1, 2003, base	\$45,000	100	\$45,000
December 31, 2003, layer	11,000	115	12,650
December 31, 2004, layer	12,400	128	15,872
December 31, 2004, layer	<u>1,600</u>	130***	<u>2,080</u>
	<u>\$70,000</u>		<u>\$75,602</u>

*\$64,500 ÷ \$56,000

**\$87,300 ÷ \$68,400

***\$90,800 ÷ \$70,000

PROBLEM 8-11

(a)

Schedule A

	A	B	C	D
	<u>Current \$</u>	<u>Price Index</u>	<u>Base-Year \$</u>	<u>Change from Prior Year</u>
2000	\$ 80,000	1.00	\$ 80,000	—
2001	115,500	1.05	110,000	\$+30,000
2002	108,000	1.20	90,000	(20,000)
2003	131,300	1.30	101,000	+11,000
2004	154,000	1.40	110,000	+9,000
2005	174,000	1.45	120,000	+10,000

Schedule B

Ending Inventory-Dollar-Value LIFO:

2000	\$80,000		2004	\$80,000 @ \$1.00 = \$ 80,000
2001	\$80,000 @ \$1.00 = \$ 80,000			10,000 @ 1.05 = 10,500
	30,000 @ 1.05 = <u>31,500</u>			11,000 @ 1.30 = 14,300
				9,000 @ 1.40 = <u>12,600</u>
				<u>\$111,500</u>
2002	\$80,000 @ 1.00 = \$ 80,000			<u>\$117,400</u>
	10,000 @ 1.05 = <u>10,500</u>		2005	\$80,000 @ 1.00 = \$ 80,000
				10,000 @ 1.05 = 10,500
				11,000 @ 1.30 = 14,300
2003	\$80,000 @ 1.00 = \$ 80,000			9,000 @ 1.40 = 12,600
	10,000 @ 1.05 = 10,500			10,000 @ 1.45 = <u>14,500</u>
	11,000 @ 1.30 = <u>14,300</u>			<u>\$131,900</u>
				<u>\$104,800</u>

PROBLEM 8-11 (Continued)

(b)

To: Warren Dunn

From: Accounting Student

Subject: Dollar-Value LIFO Pool Accounting

Dollar-value LIFO is an inventory method which values groups or “pools” of inventory in layers of costs. It assumes that any goods sold during a given period were taken from the most recently acquired group of goods in stock and, consequently, any goods remaining in inventory are assumed to be the oldest goods, valued at the oldest prices.

Because dollar-value LIFO combines various related costs in groups or “pools,” no attempt is made to keep track of each individual inventory item. Instead, each group of annual purchases forms a new cost layer of inventory. Further, the most recent layer will be the first one carried to cost of goods sold during this period.

However, inflation distorts any cost of purchases made in subsequent years. To counteract the effect of inflation, this method measures the incremental change in each year’s ending inventory in terms of the first year’s (base year’s) costs. This is done by adjusting subsequent cost layers, through the use of a price index, to the base year’s inventory costs. Only after this adjustment can the new layer be valued at current-year prices.

To do this valuation, you need to know both the ending inventory at year-end prices and the price index used to adjust the current year’s new layer. The idea is to convert the current ending inventory into base-year costs. The difference between the current year’s and the previous year’s ending inventory expressed in base-year costs usually represents any inventory which has been purchased but not sold during the year, that is, the newest LIFO layer. This difference is then readjusted to express this most recent layer in current-year costs.

PROBLEM 8-11 (Continued)

- 1. Refer to Schedule A. To express each year's ending inventory (Column A) in terms of base-year costs, simply divide the ending inventory by the price index (Column B). For 2000, this adjustment would be $\$80,000/100\%$ or $\$80,000$; for 2001, it would be $\$115,500/105\%$, etc. The quotient (Column C) is thus expressed in base-year costs.**
- 2. Next, compute the difference between the previous and the current years' ending inventory in base-year costs. Simply subtract the current year's base-year inventory from the previous year's. In 2001, the change is $+\$30,000$ (Column D).**
- 3. Finally, express this increment in current-year terms. For the second year, this computation is straightforward: the base-year ending inventory value is added to the difference in #2 above multiplied by the price index. For 2001, the ending inventory for dollar-value LIFO would equal $\$80,000$ of base-year inventory plus the increment ($\$30,000$) times the price index (1.05) or $\$111,500$. The product is the most recent layer expressed in current-year prices. See Schedule B.**

Be careful with this last step in subsequent years. Notice that, in 2002, the change from the previous year is $-\$20,000$, which causes the 2001 layer to be eroded during the period. Thus, the 2002 ending inventory is valued at the original base-year cost $\$80,000$ plus the remainder valued at the 2001 price index, $\$10,000$ times 1.05. See 2002 computation on Schedule B.

When valuing ending inventory, remember to include each yearly layer adjusted by that year's price index. Refer to Schedule B for 2001. Notice that the $+\$11,000$ change from the 2003 ending inventory indicates that the 2001 layer was not further eroded. Thus, ending inventory for 2003 would value the first $\$80,000$ worth of inventory at the base-year price index (1.00), the next $\$10,000$ (the remainder of the 2001 layer) at the 2001 price index (1.05), and the last $\$11,000$ at the 2003 price index (1.30).

These instructions should help you implement dollar-value LIFO in your inventory valuation.

TIME AND PURPOSE OF CASES

Case 8-1 (Time 15-20 minutes)

Purpose—a short case designed to test the skills of the student in determining whether an item should be reported in inventory. In addition, the student is required to speculate as to why the company may wish to postpone recording this transaction.

Case 8-2 (Time 15-25 minutes)

Purpose—to provide the student with four questions about the carrying value of inventory. These questions must be answered and defended with rationale. The topics are shipping terms, freight-in, weighted-average cost vs. FIFO, and consigned goods.

Case 8-3 (Time 25-35 minutes)

Purpose—to provide a number of difficult financial reporting transactions involving inventories. This case is vague and much judgment is required in its analysis. Right or wrong answers should be discouraged; rather emphasis should be placed on the underlying rationale to defend a given position. Includes a product versus period cost transaction, proper classification of a possible inventory item, and a product financing arrangement.

Case 8-4 (Time 15-25 minutes)

Purpose—the student discusses the acceptability of alternative methods of reporting cash discounts. Also, the student identifies the effects on financial statements of using LIFO instead of FIFO when prices are rising.

Case 8-5 (Time 20-25 minutes)

Purpose—to provide a broad overview to students as to why inventories must be included in the balance sheet and income statement. In addition, students are asked to determine why taxable income and accounting income may be different. Finally, the conditions under which FIFO and LIFO may give different answers must be developed.

Case 8-6 (Time 15-20 minutes)

Purpose—to provide the student with the opportunity to discuss the rationale for the use of the LIFO method of inventory valuation. The conditions that must exist before the tax benefits of LIFO will accrue also must be developed.

Case 8-7 (Time 15-20 minutes)

Purpose—to provide the student with an opportunity to discuss the cost flow assumptions of average cost, FIFO, and LIFO. Student is also required to distinguish between weighted-average and moving-average and discuss the effect of LIFO on the B/S and I/S in a period of rising prices.

Case 8-8 (Time 25-30 minutes)

Purpose—to provide the student with the opportunity to discuss the differences between traditional LIFO and dollar-value LIFO. In this discussion, the specific procedures employed in traditional LIFO and dollar-value LIFO must be examined. This case provides a good basis for discussing LIFO conceptual issues.

Case 8-9 (Time 25-30 minutes)

Purpose—to provide the student with an opportunity to discuss the concept of a LIFO pool and its use in various LIFO methods. The student is also asked to define LIFO liquidation, to explain the use of price indexes in dollar-value LIFO, and to discuss the advantages of using dollar-value LIFO.

Case 8-10 (Time 30-35 minutes)

Purpose—to provide the student with an opportunity to analyze the effect of changing from the FIFO method to the LIFO method on items such as ending inventory, net income, earnings per share, and year-end cash balance. The student is also asked to make recommendations considering the results from computation and other relevant factors.

Time and Purposes of Cases (Continued)

Case 8-11 (Time 20-25 minutes)

Purpose—to provide the student with an opportunity to analyze the ethical implications of purchasing decisions under LIFO.

SOLUTIONS TO CASES

CASE 8-1

(a) Purchased merchandise in transit at the end of an accounting period to which legal title has passed should be recorded as purchases within the accounting period. If goods are shipped f.o.b. shipping point, title passes to the buyer when the seller delivers the goods to the common carrier. Also when the terms are f.o.b. shipping point, transportation costs must be paid by the buyer. This liability arises when the common carrier completes the delivery. Thus, the client has a liability for the merchandise and the freight.

(b) Inventory	35,300	
Accounts Payable—Supplier		35,300
Inventory	1,500	
Accounts Payable—Transportation Co		1,500

- (c) Possible reasons to postpone the recording of the transaction might include:
1. Desire to maintain a current ratio at a given level which would be affected by the additional inventory and accounts payable.
 2. Desire to minimize the impact of the additional inventory on other ratios such as inventory turnover.
 3. Possible tax ramifications.

CASE 8-2

- (a) If the terms of the purchase are f.o.b. shipping point (manufacturer’s plant), Ditka Enterprises should include in its inventory goods purchased from its suppliers when the goods are shipped. For accounting purposes, title is presumed to pass at that time.
- (b) Freight-in expenditures should be considered an inventoriable cost because they are part of the price paid or the consideration given to acquire the asset.
- (c) Theoretically the net approach is the more appropriate because the net amount (1) provides a correct reporting of the cost of the asset and related liability and (2) presents the opportunity to measure the inefficiency of financial management if the discount is not taken. Many believe, however, that the difficulty involved in using the somewhat more complicated net method is not justified by the resulting benefits.
- (d) Products on consignment represent inventories owned by Ditka Enterprises, which are physically transferred to another enterprise. However, Ditka Enterprises retains title to the goods until their sale by the other company (Wannstedt Inc.).

The goods consigned are still included by Ditka Enterprises in the inventory section of its balance sheet. Often the inventory is reclassified from regular inventory to consigned inventory (**Note to instructor:** There is no reason why the student will know this last point given that only Chapter 8 has been covered.). The other company reports neither inventory nor a liability in its balance sheet.

CASE 8-3

- (a) Statement 3 of Chapter 4, **ARB No. 43** states in part:

“As applied to inventories, cost means in principle the sum of the applicable expenditures and charges directly or indirectly incurred in bringing an article to its existing condition and location.”

The discussion includes the following: “Selling expenses constitute no part of the inventory costs.” To the extent that warehousing is a necessary function of importing merchandise before it can be sold, certain elements of warehousing costs might be considered an appropriate cost of inventory in the warehouse. For example, if goods must be brought into the warehouse before they can be made ready for sale, the cost of bringing such goods into the warehouse would be considered a cost of inventory. Similarly, if goods must be handled in the warehouse for assembly or for removal of foreign packaging, etc., it would be appropriate to include such costs in inventory. However, costs involved in storing the goods for any additional period would appear to be period costs. Costs of delivering the goods from the warehouse would appear to be selling expenses related to the goods sold, and should not under any circumstances be allocated to goods that are still in the warehouse.

In theory, warehousing costs are considered a product cost because these costs are incurred to maintain the product in a salable condition. However, in practice, warehousing costs are most frequently treated as a period cost.

Under the Tax Reform Act of 1986, warehousing and off-site storage of inventory, including finished goods, are specifically included in the “production and resale activities” that are to be capitalized for tax purposes.

- (b) It is correct to conclude that obsolete items are excludable from inventory. Cost attributable to such items is “nonuseful” and “nonrecoverable” cost (except for possible scrap value) and should be written off. If the cost of obsolete items was simply excluded from ending inventory, the resultant cost of goods sold would be overstated by the amount of these costs. The cost of obsolete items, if immaterial, should be commingled with cost of goods sold. If material, these costs should be separately disclosed.
- (c) The primary use of the airplanes should determine their treatment on the balance sheet. Since the airplanes are held primarily for sale, and chartering is only a temporary use, the airplanes should be classified as current assets. Depreciation would not be appropriate if the planes are considered inventory. **Accounting Research Bulletin No. 43**, Chapter 4, Inventory Pricing Statement No. 1, states in part that the term Inventory “excludes long-term assets subject to depreciation accounting, or goods which, when put into use, will be so classified.”
- (d) The transaction is a product financing arrangement and should be reported by the company as inventory with a related liability. The substance of the transaction is that inventory has been purchased and the fact that a trust is established to purchase the goods has no economic significance. Given that the company agrees to buy the coal over a certain period of time at specific prices, it appears clear that the company has the liability and not the trust.

CASE 8-4

- (a) Cash discounts should **not** be accounted for as financial income when payments are made. Income should be recognized when the earnings process is complete (when the company sells the inventory). Furthermore, cash discounts should not be recorded when the payments are made because in order to properly match a cash discount with the related purchase, the cash discount should be recorded when the related purchase is recorded.

CASE 8-4 (Continued)

- (b) Cash discounts should not be accounted for as a reduction of cost of goods sold for the period when payments are made. Cost of goods sold should be reduced when the earnings process is complete (when the company sells the inventory which has been reduced by the cash discounts). Furthermore, cash discounts should not be recorded when the payments are made because in order to properly match a cash discount with the related purchase, the cash discount should be recorded when the related purchase is recorded.
- (c) Cash discounts should be accounted for as a direct reduction of purchase cost because they reduce the cost of acquiring the inventories. Purchases should be recorded net of cash discounts to reflect the net cash to be paid. The primary basis of accounting for inventories is cost, which represents the price paid or consideration given to acquire an asset.

CASE 8-5

- (a)
 1. Inventories are unexpired costs and represent future benefits to the owner. A balance sheet includes a listing of unexpired costs and future benefits of the owner's assets at a specific point in time. Because inventories are assets owned at the specific point in time for which a balance sheet is prepared, they must be included in order that the owner's financial position will be presented fairly.
 2. Beginning and ending inventories are included in the computation of net income only for the purpose of arriving at the cost of goods sold during the period of time covered by the statement. Goods included in the beginning inventory which are no longer on hand are expired costs to be matched against revenues earned during the period. Goods included in the ending inventory are unexpired costs to be carried forward to a future period, rather than expensed.
- (b) Financial accounting has as its goal the proper reporting of financial transactions and events in accordance with generally accepted accounting principles. Income tax accounting has as its goal the reporting of taxable transactions and events in conformity with income tax laws and regulations. While the primary purpose of an income tax is the production of tax revenues to finance the operations of government, income tax laws and regulations are often produced by various forces. The income tax may be used as a tool of fiscal policy to stimulate all of the segments of the economy or to decelerate the economy. Some income tax laws may be passed because of political pressures brought to bear by individuals or industries. When the purposes of financial accounting and income tax accounting differ, it is often desirable to report transactions or events differently and to report the deferred tax consequences of any existing temporary differences as assets or liabilities.
- (c) FIFO and LIFO are inventory costing methods employed to measure the flow of costs. FIFO matches the first cost incurred with the first revenue produced while LIFO matches the last cost incurred with the first revenue produced after the cost is incurred. (This, of course, assumes a perpetual inventory system is in use and may not be precisely true if a periodic inventory system is employed.) If prices are changing, different costs would be matched with revenue for the same quantity sold depending upon whether the LIFO or FIFO system is in use. (In a period of rising or falling prices FIFO tends to value inventories at approximate market value in the balance sheet and LIFO tends to match approximately the current replacement cost of an item with the revenue produced.)

CASE 8-6

- (a) Inventory profits occur when the inventory costs matched against sales are less than the replacement cost of the inventory. The cost of goods sold therefore is understated and net income is considered overstated. By using LIFO (rather than some method such as FIFO), more recent costs are matched against revenues and inventory profits are thereby reduced.

CASE 8-6 (Continued)

- (b) As long as the price level increases and inventory quantities do not decrease, a deferral of income taxes occurs under LIFO because the items most recently purchased at the higher price level are matched against revenues. It should be noted that where unit costs tend to decrease as production increases, the tax benefits that LIFO might provide are nullified. Also, where the inventory turnover is high, the difference between inventory methods is negligible.

CASE 8-7

- (a) The average-cost method assumes that inventories are sold or issued evenly from the stock on hand; the FIFO method assumes that goods are sold or used in the order in which they are purchased (i.e., the first goods purchased are the first sold or used); and the LIFO method matches the cost of the last goods purchased against revenue.
- (b) The weighted-average cost method combines the cost of all the purchases in the period with the cost of beginning inventory and divides the total costs by the total number of units to determine the average cost per unit. The moving-average cost method, on the other hand, calculates a new average unit cost when a purchase is made. The moving-average cost method is used with perpetual inventory records.
- (c) When the purchase prices of inventoriable items are rising for a significant period of time, the use of the LIFO method (instead of FIFO) will result in a lower net income figure. The reason is that the LIFO method matches most recent purchases against revenue. Since the prices of goods are rising, the LIFO method will result in higher cost of goods sold, thus lower net income. On the balance sheet, the ending inventory tends to be understated (i.e., lower than the most recent replacement cost) because the oldest goods have lower costs during a period of rising prices. In addition, retained earnings under the LIFO method will be lower than that of the FIFO method when inflation exists.

CASE 8-8

- (a)
 1. The LIFO method (periodic) allocates costs on the assumption that the last goods purchased are used first. If the amount of the inventory is computed at the end of the month under a periodic system, then it would be assumed that the total quantity sold or issued during the month would have come from the most recent purchases, and ordinarily no attempt would be made to compare the dates of purchases and sales.
 2. The dollar-value method of LIFO inventory valuation is a procedure using dollars instead of units to measure increments or reductions in inventory. The method presumes that goods in the inventory can be classified into pools or homogenous groups. After the grouping into pools the ending inventory is priced at the end-of-year prices and a price index number is applied to convert the total pool to the base-year price level. Such a price index might be obtained from government sources, if available, or computed from the company's records. The pools or groupings of inventory are required where a single index number is inappropriate for all elements of the inventory.

After the closing inventory and the opening inventory have been placed on the same base-year price level, any difference between the two inventories is attributable to an increase or decrease in inventory quantity at the base-year price. An increase in quantity so determined is converted to the current-year price level and added to the amount of the opening inventory as a separate inventory layer. A decrease in quantity is deducted from the appropriate layer of opening inventory at the price level in existence when the layer was added.

CASE 8-8 (Continued)

- (b) The **advantages of the dollar-value method** over the traditional LIFO method are as follows:
1. The application of the LIFO method is simplified because, under the pooling procedure, it is not necessary to assign costs to opening and closing quantities of individual items. As a result, companies with inventories comprised of thousands of items may adopt the dollar-value method and minimize their bookkeeping costs.
 2. Base inventories are more easily maintained. The dollar-value method permits greater flexibility because each pool is made up of dollars rather than quantities. Thus, the problem of a LIFO liquidation is less possible.

The **disadvantages of the dollar-value method** as compared to the traditional LIFO method are as follows:

1. Due to technological innovations and improvements over time, material changes in the composition of inventory may occur. Items found in the ending inventory may not have existed during the base year. Thus, conversion of the ending inventory to base-year prices may be difficult to calculate or to justify conceptually. This may necessitate a periodic change in the choice of base year used.
2. Application of a year-end index, although widely used, implies use of the FIFO method. Other indexes used include beginning-of-year index and average indexes.
3. Determination of the degree of similarity between items for the purpose of grouping them into pools may be difficult and may be based upon arbitrary management decisions.

(c) The basic **advantages of LIFO** are:

1. Matching—In LIFO, the more recent costs are matched against current revenues to provide a better measure of current earnings.
2. Tax benefits—As long as the price level increases and inventory quantities do not decrease, a deferral of income taxes occurs.
3. Improved cash flow—By receiving tax benefits from use of LIFO, the company may reduce its borrowings and related interest costs.
4. Future earnings hedge—With LIFO, a company's future reported earnings will not be affected substantially by future price declines. LIFO eliminates or substantially minimizes write-downs to market as a result of price decreases because the inventory value ordinarily will be much lower than net realizable value, unlike FIFO.

The major **disadvantages of LIFO** are:

1. Reduced earnings—Because current costs are matched against current revenues, net income is lower than it is under other inventory methods when price levels are increasing.
2. Inventory understated—The inventory valuation on the balance sheet is ordinarily outdated because the oldest costs remain in inventory.
3. Physical flow—LIFO does not approximate physical flow of the items except in peculiar situations.
4. Real income not measured—LIFO falls short of measuring real income because it is often not an adequate substitute for replacement cost.
5. Involuntary liquidation—If the base or layers of old costs are partially liquidated, irrelevant costs can be matched against current revenues.
6. Poor buying habits—LIFO may cause poor buying habits because a company may simply purchase more goods and match the cost of these goods against revenue to insure that old costs are not charged to expense.

CASE 8-9

- (a) A LIFO pool is a group of similar items which are combined and accounted for together under the LIFO inventory method.
- (b) It is possible to use a LIFO pool concept without using dollar-value LIFO. For example, the specific goods pooled approach utilizes the concept of a LIFO pool with quantities as its measurement basis.
- (c) A LIFO liquidation occurs when a significant drop in inventory level leads to the erosion of an earlier or base inventory layer. In a period of inflation (as usually is the case) LIFO liquidation will distort net income (make it higher) and incur substantial tax payments.
- (d) Price indexes are used in the dollar-value LIFO method to: (1) convert the ending inventory at current year-end cost to base-year cost, and (2) determine the current-year cost for each inventory layer other than the base-year layer.
- (e) The dollar-value LIFO method measures the increases and decreases in a pool in terms of total dollar value, not by the physical quantity of the goods in the inventory pool. As a result, the dollar-value LIFO approach has the following advantages over specific goods LIFO pool. First, the pooled approach reduces record keeping and clerical costs. Second, replacement is permitted if it is a similar material, or similar in use, or interchangeable. Thus, it is more difficult to erode LIFO layers when using dollar-value LIFO techniques.

CASE 8-10

(a) FIFO (Amounts in thousands, except earnings per share)

	<u>2004</u>	<u>2005</u>	<u>2006</u>
Sales	<u>\$11,000</u>	<u>\$10,000</u>	<u>\$15,600</u>
Cost of Goods Sold			
Beginning inventory	7,000	6,300	8,000
Purchases	<u>7,000</u>	<u>8,800</u>	<u>10,800</u>
Cost of goods available for sale	14,000	15,100	18,800
(1) Ending inventory*	<u>6,300</u>	<u>8,000</u>	<u>8,100</u>
Cost of goods sold	<u>7,700</u>	<u>7,100</u>	<u>10,700</u>
Gross profit	3,300	2,900	4,900
Operating expense (15% of sales)	(1,650)	(1,500)	(2,340)
Depreciation expense	<u>(300)</u>	<u>(300)</u>	<u>(300)</u>
Income before taxes	1,350	1,100	2,260
Income tax expense (40%)	<u>540</u>	<u>440</u>	<u>904</u>
(2) Net income	<u>\$ 810</u>	<u>\$ 660</u>	<u>\$ 1,356</u>

CASE 8-10 (Continued)

(3) Earnings per share	<u>\$ 0.81</u>	<u>\$ 0.66</u>	<u>\$ 1.36</u>
(4) Cash balance			
Beginning balance	\$ 400	\$ 1,860	\$ 770
Sales proceeds	11,000	10,000	15,600
Purchases	(7,000)	(8,800)	(10,800)
Operating expenses	(1,650)	(1,500)	(2,340)
Property, plant, and equipment	(350)	(350)	(350)
Income taxes	<u>(540)</u>	<u>(440)</u>	<u>(904)</u>
Ending balance	<u>\$ 1,860</u>	<u>\$ 770</u>	<u>\$ 1,976</u>

*2004 = \$7 X (1,000 + 1,000 – 1,100) = \$6,300.

2005 = \$8 X (900 + 1,100 – 1,000) = \$8,000.

2006 = \$9 X (1,000 + 1,200 – 1,300) = \$8,100.

LIFO (Amounts in thousands, except earnings per share)

	<u>2004</u>	<u>2005</u>	<u>2006</u>
Sales	<u>\$11,000</u>	<u>\$10,000</u>	<u>\$15,600</u>
Cost of Goods Sold			
Beginning inventory	7,000	6,300	7,100
Purchases	<u>7,000</u>	<u>8,800</u>	<u>10,800</u>
Cost of goods available for sale	14,000	15,100	17,900
(1) Ending inventory**	<u>6,300</u>	<u>7,100</u>	<u>6,300</u>
Cost of goods sold	<u>7,700</u>	<u>8,000</u>	<u>11,600</u>
Gross profit	3,300	2,000	4,000
Operating expense	(1,650)	(1,500)	(2,340)
Depreciation expense	<u>(300)</u>	<u>(300)</u>	<u>(300)</u>
Income before taxes	1,350	200	1,360
Income tax expense	<u>540</u>	<u>80</u>	<u>544</u>
(2) Net income	<u>\$ 810</u>	<u>\$ 120</u>	<u>\$ 816</u>

CASE 8-10 (Continued)

(3) Earnings per share	<u>\$ 0.81</u>	<u>\$ 0.12</u>	<u>\$ 0.82</u>
(4) Cash balance			
Beginning balance	\$ 400	\$ 1,860	\$ 1,130
Sales proceeds	11,000	10,000	15,600
Purchases	(7,000)	(8,800)	(10,800)
Operating expenses	(1,650)	(1,500)	(2,340)
Property, plant, and equipment	(350)	(350)	(350)
Income taxes	<u>(540)</u>	<u>(80)</u>	<u>(544)</u>
Ending balance	<u>\$ 1,860</u>	<u>\$ 1,130</u>	<u>\$ 2,696</u>

****2004 = \$7 X (1,000 + 1,000 – 1,100) = \$6,300.**

2005 = (\$7 X 900) + (\$8 X 100) = \$7,100.

2006 = \$7 X 900 = \$6,300.

- (b) According to the computation in (a), Günter Grass Company can achieve the goal of income tax savings by switching to the LIFO method. As shown in the schedules, under the LIFO method, Grass will have lower net income and thus lower income taxes for 2005 and 2006 (tax savings of \$360,000 in each year). As a result, Grass will have a better cash position at the end of 2005 and especially 2006 (year-end cash balance will be higher by \$360,000 for 2005 and \$720,000 for 2006).

However, since Grass Company is in a period of rising purchase prices, the LIFO method will result in significantly lower net income and earnings per share for 2005 and 2006. The management may need to evaluate the potential impact that lower net income and earnings per share might have on the company before deciding on the change to the LIFO method.

CASE 8-11

- (a) Major stakeholders are investors, creditors, Gamble Company's management (including the president and plant accountant), and other employees of Gamble Company. The inventory purchase in this instance reduces net income substantially and lowers Gamble Company's tax liability. Current stockholders and company management benefit during the current year by this decision. However, the purchasing department may be concerned about inventory management and complications such as storage costs and possible inventory obsolescence.**

Assuming awareness of these benefits and possible complications, the plant accountant may follow the president's recommendation without violating GAAP. The plant accountant also must consider whether this action is in the long-term best interests of the company and whether inventory amounts would provide a meaningful picture of Gamble Company's financial condition.

- (b) No, the president would not recommend a year-end inventory purchase because under FIFO there would be no effect on net income.**

FINANCIAL STATEMENT ANALYSIS CASE 1

(a)	Sales	\$618,876,000
	Cost of goods sold*	<u>474,206,000</u>
	Gross profit	144,670,000
	Selling and administrative expense	<u>102,112,000</u>
	Income from operations	42,558,000
	Other expense	<u>(24,712,000)</u>
	Income before income tax	<u>\$ 17,846,000</u>
	*Cost of goods sold (per annual report)	\$475,476,000
	LIFO Effect (\$5,263,000 – \$3,993,000)	<u>(1,270,000)</u>
	Cost of goods sold (per LIFO)	<u>\$474,206,000</u>

(b) \$17,846,000 income before taxes X 46.6% tax = \$8,316,236 tax; \$17,846,000 – \$8,316,236 tax = \$9,529,764 net income as compared to \$8,848,000 net income under LIFO. This is \$681,764 or about 8% different. The question as to materiality is to allow the students an opportunity to judge the significance of the difference between the two costing methods. Since it is less than 10% different, some students may feel that it is not material. An 8% change in net income, however, is probably material, but this would depend on the industry and perhaps on the company's own past averages.

(c) No, the use of different costing methods does not necessarily mean that there is a difference in the physical flow of goods. As explained in the text, the actual physical flow need have no relationship to the cost flow assumption. The management of T J International has determined that LIFO is appropriate only for a subset of its products, and these reasons have to do with economic characteristics, rather than the physical flow of the goods.

FINANCIAL STATEMENT ANALYSIS CASE 2

- (a) The most likely physical flow of goods for a pharmaceutical manufacturer would be FIFO; that is, the first goods manufactured would be the first goods sold. This is because pharmaceutical goods have an expiration date. The manufacturer would be careful to ship the goods made earliest first and thereby reduce the risk that outdated goods will remain in the warehouse.
- (b) Noven should consider first whether the inventory costing method will make a difference. If the prices in the economy, especially if the raw materials prices, are stable, then the inventory cost will be nearly the same under any of the measurement methods. If inventory levels are very small, then the method used will make little difference. Noven should also consider the cost of keeping records. A small company might not want to invest in complicated record keeping. The tax effects of any differences should be considered, as well as any international rules that might dictate Noven's measurement of part of its inventory.
- (c) This amount is likely not shown in a separate inventory account because it is immaterial; that is, it is not large enough to make a difference with investors. Another possible reason is that no goods have yet been offered for sale. This amount might be in the Inventory of supplies account, but it is more likely to be included with Prepaid and other current assets, since it clearly is not just an article of supplies. This will definitely be shown separately as soon as Noven begins to sell its products to outside customers.

RESEARCH CASES

CASE 1

Answer depends on firm selected.

CASE 2

- (a) Per the Fortune web site on 9/19/02, the rankings are: (1) by revenue (Wal-Mart, Exxon-Mobil, General Motors), (2) by profit (Exxon-Mobil, Citigroup, General Electric), (3) by assets (Citigroup, Fannie-Mae, JP Morgan Chase), (4) by market value (General Electric, Microsoft, Exxon-Mobil), and (5) by employees (Wal-Mart, McDonalds, United Parcel Service).
- (b) Depends on location.

PROFESSIONAL SIMULATION

	A	B	C	D	E	F	G	H	I	J
1										
2										
3										
4										
5		Unadjusted	Adjustment (a)	Adjustment (b)	Adjustment (c)	Adjusted				
6	Beginning Inventory	\$125.50	-	-	-	\$125.50				
7	Ending Inventory	116.70	\$2.00	\$5.00	\$46.00	169.70				
8	Average Inventory	121.10	-	-	-	147.60				
9	Cost of Goods Sold	1,776.40	(2.00)	(5.00)	(46.00)	1,723.40				
10	Inventory Turnover	14.67	-	-	-	11.68				
11										
12	Explanation		Norwel should count the goods it has consigned in other stores.	Goods officially change hands at the point of destination.	Ending inventory under FIFO would be \$770 (220@3.50) -- \$46 (\$770 - \$724) higher than LIFO.					
13										

Explanation

To: Norwel Management

From: Student

Re: Advantages of LIFO

The major advantages of the LIFO inventory method include better matching of costs with revenues, deferral of income taxes, improved cash flow, and minimization of the impact of future price declines on future earnings. Better matching arises in the use of LIFO because the most recent costs are matched with current revenues. In times of rising prices, this matching will result in lower taxable income, which in turn will reduce current taxes. The deferral of taxes under LIFO contributes to a higher cash flow. As illustrated in the analysis above the switch to FIFO resulted in a higher ending inventory, which leads to a lower cost of goods sold and higher income; thus, Norwel's reported income will be higher but so will its taxes. Note that under LIFO, future taxes may be higher when lower cost items of inventory are sold in future periods and matched with higher sales prices.

CHAPTER 9

Inventories: Additional Valuation Issues

ASSIGNMENT CLASSIFICATION TABLE

Topics	Questions	Brief		Problems	Cases
		Exercises	Exercises		
1. Lower of cost or market.	1, 2, 3, 4, 5, 6	1, 2, 3	1, 2, 3, 4, 5, 6	1, 2, 3, 9, 10	1, 2, 3
2. Inventory accounting changes; relative sales value method; net realizable value.	7, 8	4	7, 8	7, 11	4
3. Purchase commitments.	9	5, 6	9, 10	9	
4. Gross profit method.	10, 11, 12, 13	7	11, 12, 13, 14, 15, 16, 17	4, 5	
5. Retail inventory method.	14, 15, 16	8	18, 19, 20, 22, 23, 26	6, 7, 8, 10, 11	4, 5, 6
6. Presentation and analysis.	17, 18	9	21	9	
*7. LIFO retail.	19	10	22, 23	12, 13, 14	7
*8. Dollar-value LIFO retail.		11	24, 25, 26, 27	11, 13	
*9. Special LIFO problems.			28	13, 14	

*This material is discussed in an Appendix to the chapter.

ASSIGNMENT CHARACTERISTICS TABLE

Item	Description	Level of Difficulty	Time (minutes)
E9-1	Lower of cost or market.	Simple	15-20
E9-2	Lower of cost or market.	Simple	10-15
E9-3	Lower of cost or market.	Simple	15-20
E9-4	Lower of cost or market—journal entries.	Simple	10-15
E9-5	Lower of cost or market—valuation account.	Moderate	20-25
E9-6	Lower of cost or market—error effect.	Simple	10-15
E9-7	Relative sales value method.	Simple	15-20
E9-8	Relative sales value method.	Simple	12-17
E9-9	Purchase commitments.	Simple	05-10
E9-10	Purchase commitments.	Simple	15-20
E9-11	Gross profit method.	Simple	8-13
E9-12	Gross profit method.	Simple	10-15
E9-13	Gross profit method.	Simple	15-20
E9-14	Gross profit method.	Moderate	15-20
E9-15	Gross profit method.	Simple	10-15
E9-16	Gross profit method.	Simple	15-20
E9-17	Gross profit method.	Moderate	20-25
E9-18	Retail inventory method.	Moderate	20-25
E9-19	Retail inventory method.	Simple	12-17
E9-20	Retail inventory method.	Simple	20-25
E9-21	Analysis of inventories—turnover and days to sell.	Simple	10-15
*E9-22	Retail inventory method—conventional and LIFO.	Moderate	25-35
*E9-23	Retail inventory method—conventional and LIFO.	Moderate	15-20
*E9-24	Dollar-value LIFO retail.	Simple	10-15
*E9-25	Dollar-value LIFO retail.	Simple	5-10
*E9-26	Conventional retail and dollar-value LIFO retail.	Moderate	20-25
*E9-27	Dollar-value LIFO retail.	Moderate	20-25
*E9-28	Change to LIFO retail.	Simple	10-15
P9-1	Lower of cost or market.	Simple	10-15
P9-2	Lower of cost or market.	Moderate	25-30
P9-3	Entries for lower of cost or market—direct and allowance.	Moderate	30-35
P9-4	Gross profit method.	Moderate	20-30
P9-5	Gross profit method.	Complex	40-45
P9-6	Retail inventory method.	Moderate	20-30
P9-7	Retail inventory method.	Moderate	20-30

ASSIGNMENT CHARACTERISTICS TABLE (Continued)

Item	Description	Level of Difficulty	Time (minutes)
P9-8	Retail inventory method.	Moderate	20-30
P9-9	Statement and note disclosure, LCM, and purchase commitment.	Moderate	30-40
P9-10	Lower of cost or market.	Moderate	30-40
*P9-11	Conventional and dollar-value LIFO retail.	Moderate	30-35
*P9-12	Retail, LIFO retail, and inventory shortage.	Moderate	30-40
*P9-13	Change to LIFO retail.	Moderate	30-40
*P9-14	Change to LIFO retail; dollar-value LIFO retail.	Complex	40-50
C9-1	Lower of cost or market.	Moderate	15-25
C9-2	Lower of cost or market—ethics	Moderate	20-30
C9-3	Lower of cost or market.	Moderate	15-20
C9-4	Retail inventory method.	Moderate	25-30
C9-5	Cost determination, LCM, retail method.	Moderate	15-25
C9-6	Purchase commitment—ethics	Moderate	20-25
*C9-7	Retail inventory method and LIFO retail.	Simple	10-15

ANSWERS TO QUESTIONS

1. Where there is evidence that the utility of goods to be disposed of in the ordinary course of business will be less than cost, the difference should be recognized as a loss in the current period, and the inventory should be stated at market value in the financial statements.
2. The upper (ceiling) and lower (floor) limits for the value of the inventory are intended to prevent the inventory from being reported at an amount in excess of the net selling price or at an amount less than the net selling price less a normal profit margin. The maximum limitation, not to exceed the net realizable value (ceiling) covers obsolete, damaged, or shopworn material and prevents overstatement of inventories and understatement of the loss in the current period. The minimum limitation deters understatement of inventory and overstatement of the loss in the current period.
3. The usual basis for carrying forward the inventory to the next period is cost. Departure from cost is required, however, when the utility of the goods included in the inventory is less than their cost. This loss in utility should be recognized as a loss of the current period, the period in which it occurred. Furthermore, the subsequent period should be charged for goods at an amount that measures their expected contribution to that period. In other words, the subsequent period should be charged for inventory at prices no higher than those which would have been paid if the inventory had been obtained at the beginning of that period. (Historically, the lower of cost or market rule arose from the accounting convention of providing for all losses and anticipating no profits.)

In accordance with the foregoing reasoning, the rule of "cost or market, whichever is lower" may be applied to each item in the inventory, to the total of the components of each major category, or to the total of the inventory, whichever most clearly reflects operations. The rule is usually applied to each item, but if individual inventory items enter into the same category or categories of finished product, alternative procedures are suitable.

The arguments against the use of the lower of cost or market method of valuing inventories include the following:

- (1) The method requires the reporting of estimated losses (all or a portion of the excess of actual cost over replacement cost) as definite income charges even though the losses have not been sustained to date and may never be sustained. Under a consistent criterion of realization a drop in replacement cost below original cost is no more a sustained loss than a rise above cost is a realized gain.
- (2) A price shrinkage is brought into the income statement before the loss has been sustained through sale. Furthermore, if the charge for the inventory write-downs is not made to a special loss account, the cost figure for goods actually sold is inflated by the amount of the estimated shrinkage in price of the unsold goods. The title "Cost of Goods Sold" therefore becomes a misnomer.
- (3) The method is inconsistent in application in a given year because it recognizes the propriety of implied price reductions but gives no recognition in the accounts or financial statements to the effect of the price increases.
- (4) The method is also inconsistent in application in one year as opposed to another because the inventory of a company may be valued at cost in one year and at market in the next year.
- (5) The lower of cost or market method values the inventory in the balance sheet conservatively. Its effect on the income statement, however, may be the opposite. Although the income statement for the year in which the unsustained loss is taken is stated conservatively, the net income on the income statement of the subsequent period may be distorted if the expected reductions in sales prices do not materialize.

Questions Chapter 9 (Continued)

- (6) In the application of the lower of cost or market rule a prospective “normal profit” is used in determining inventory values in certain cases. Since “normal profit” is an estimated figure based upon past experiences (and might not be attained in the future), it is not objective in nature and presents an opportunity for manipulation of the results of operations.
4. The lower of cost or market rule may be applied directly to each item or to the total of the inventory (or in some cases, to the total of the components of each major category). The method should be the one that most clearly reflects income. The most common practice is to price the inventory on an item-by-item basis. Companies favor the individual item approach because tax requirements require that an individual item basis be used unless it involves practical difficulties. In addition, the individual item approach gives the most conservative valuation for balance sheet purposes.
 5.
 1. \$14.30.
 2. \$16.10.
 3. \$13.75.
 4. \$9.70.
 5. \$15.90.
 6. One approach is to record the inventory at cost and then reduce it to market, thereby reflecting a loss in the current period. The loss would then be shown as a separate item in the income statement and the cost of goods sold for the year would not be distorted by its inclusion. An objection to this method of valuation is that an inconsistency is created between the income statement and balance sheet. In attempting to meet this inconsistency some have advocated the use of a special account to receive the credit for such an inventory write-down, such as Allowance to Reduce Inventory to Market which is a contra account against inventory on the balance sheet. It should be noted that the disposition of this account presents problems to accountants.

Another approach is merely to substitute market for cost when pricing the new inventory. Such a procedure increases cost of goods sold by the amount of the loss and fails to reflect this loss separately. For this reason, many theoretical objections can be raised against this procedure.

7. An exception to the normal recognition rule occurs where (1) there is a controlled market with a quoted price applicable to specific commodities and (2) no significant costs of disposal are involved. Certain agricultural products and precious metals which are immediately marketable at quoted prices are often valued at net realizable value (market price).
8. Relative sales value in an appropriate basis for pricing inventory when a group of varying units is purchased at a single lump sum price (basket purchase). The purchase price must be allocated in some manner or on some basis among the various units. When the units vary in size, character, and attractiveness, the basis for allocation must reflect both quantitative and qualitative aspects. A suitable basis then is the relative sales value of the units that comprise the inventory.
9. The drop in the market price of the commitment should be charged to operations in the current year if it is material in amount. The following entry would be made $[(\$6.40 - \$5.90) \times 150,000] = \$75,000$:

Estimated Loss on Purchase Commitments.....	75,000	
Estimated Liability on Purchase Commitments.....		75,000

The entry is made because a loss in utility has occurred during the period in which the market decline took place. The account credited in the above entry should be included among the current liabilities on the balance sheet with an appropriate note indicating the nature and extent of the commitment. This liability indicates the minimum obligation on the commitment contract at the present time—the amount that would have to be forfeited in case of breach of contract.

Questions Chapter 9 (Continued)

10. The major uses of the gross profit method are: (1) it provides an approximation of the ending inventory which the auditor might use for testing validity of physical inventory count; (2) it means that a physical count need not be taken every month or quarter; and (3) it helps in determining damages caused by casualty when inventory cannot be counted.
11. Gross profit as a percentage of sales indicates that the margin is based on selling price rather than cost; for this reason the gross profit as a percentage of selling price will always be lower than if based on cost. Conversions are as follows:

20% on cost =	16 2/3% on selling price
33 1/3% on cost =	25% on selling price
33 1/3% on selling price =	50% on cost
60% on selling price =	150% on cost

12. A markup of 25% on cost equals a 20% markup on selling price; therefore, gross profit equals \$1,200,000 (\$6 million X 20%) and net income equals \$300,000 [\$1,200,000 – (15% X \$6 million)].

13. Inventory, January 1, 2005		\$ 400,000
Purchases to February 10, 2005	\$1,140,000	
Freight-in to February 10, 2005	<u>60,000</u>	<u>1,200,000</u>
Merchandise available		1,600,000
Sales to February 10, 2005	1,750,000	
Less gross profit at 40%	<u>700,000</u>	
Sales at cost		<u>1,050,000</u>
Inventory (approximately) at February 10, 2005		<u>\$ 550,000</u>

14. The validity of the retail inventory method is dependent upon (1) the composition of the inventory remaining approximately the same at the end of the period as it was during the period, and (2) there being approximately the same rate of markup at the end of the year as was used throughout the period.

The retail method, though ordinarily applied on a departmental basis, may be appropriate for the business as a unit if the above conditions are met.

15. The conventional retail method is a statistical procedure based on averages whereby inventory figures at retail are reduced to an inventory valuation figure by multiplying the retail figures by a percentage which is the complement of the markup percent.

To determine the markup percent, original markups and additional net markups are related to the original cost. The complement of the markup percent so determined is then applied to the inventory at retail after the latter has been reduced by net markdowns, thus in effect achieving a lower of cost or market valuation.

An example of reduction to market follows:

Assume purchase of 100 items at \$1 each, marked to sell at \$1.50 each, at which price 80 were sold. The remaining 20 are marked down to \$1.15 each.

The inventory at \$15.33 is \$4.67 below original cost and is valued at an amount which will produce the “normal” 33 1/3% gross profit if sold at the present retail price of \$23.00.

Questions Chapter 9 (Continued)

Computation of Inventory

	Cost	Retail	Ratio
Purchases	<u>\$100</u>	\$150	66 2/3%
Sales		(120)	
Markdowns (20 X \$.35)		<u>(7)</u>	
Inventory at retail		<u>\$ 23</u>	
Inventory at lower of cost or market	\$23 X 66 2/3% = <u>\$15.33</u>		

16. (a) Ending inventory:

	Cost	Retail
Beginning inventory	\$ 149,000	\$ 283,500
Purchases	1,400,000	2,160,000
Freight-in	<u>70,000</u>	<u>0</u>
Totals	1,619,000	2,443,500
Add net markups		<u>92,000</u>
	<u>\$1,619,000</u>	2,535,500
Deduct net markdowns		<u>48,000</u>
		2,487,500
Deduct sales		<u>2,235,000</u>
Ending inventory, at retail		<u>\$ 252,500</u>

$$\text{Ratio of cost to selling price} = \frac{\$1,619,000}{\$2,535,500} = 64\%.$$

Ending inventory estimated at cost = 64% X \$252,500 = \$161,600.

- (b) The retail method, above, showed an ending inventory at retail of \$252,500; therefore, merchandise not accounted for amounts to \$12,500 at retail and \$8,000 at cost.
17. Information relative to the composition of the inventory (i.e., raw material, work-in-process, and finished goods); the inventory financing where significant or unusual (transactions with related parties, product financing arrangements, firm purchase commitments, involuntary liquidations of LIFO inventories, pledging inventories as collateral); and the inventory costing methods employed (lower of cost or market, FIFO, LIFO, average cost) should be disclosed.
18. Inventory turnover measures how quickly inventory is sold. Generally, the higher the inventory turnover, the better the enterprise is performing. The more times the inventory turns over, the smaller the net margin can be to earn an appropriate total profit and return on assets. For example, a company can price its goods lower if it has a high inventory turnover. A company with a low profit margin, such as 2%, can earn as much as a company with a high net profit margin, such as 40%, if its inventory turnover is often enough. To illustrate, a grocery store with a 2% profit margin can earn as much as a jewelry store with a 40% profit margin and an inventory turnover of 1 if its turnover is more than 20 times.
- *19. Two major modifications are necessary. First, the beginning inventory should be excluded from the numerator and denominator of the cost to retail percentage and second, markdowns should be included in the denominator of the cost to retail percentage.

SOLUTIONS TO BRIEF EXERCISES

BRIEF EXERCISE 9-1

(a) Ceiling \$198.00
 Floor \$166.00

(b) \$106.00

(c) \$51.00

BRIEF EXERCISE 9-2

Item	Cost	Designated Market	LCM
Jokers	\$2,000	\$1,900	\$1,900
Penguins	5,000	4,950	4,950
Riddlers	4,400	4,550	4,400
Scarecrows	3,200	3,070	3,070

BRIEF EXERCISE 9-3

(a) Direct method

Cost of Goods Sold.....	17,000	
Inventory		17,000

(b) Indirect method

Loss Due to Market Decline of Inventory	17,000	
Allowance to Reduce Inventory to Market		17,000

BRIEF EXERCISE 9-4

<u>Group</u>	<u>Number of CDs</u>	<u>Sales Price</u>	<u>Total Sales Price</u>	<u>Relative Sales Price</u>	<u>Total Cost</u>	<u>Cost Allocated</u>	<u>Cost per CD</u>
1	100	\$ 5	\$ 500	5/100	\$6,000	\$ 300	\$3
2	800	\$10	8,000	80/100	\$6,000	4,800	\$6
3	100	\$15	<u>1,500</u>	15/100	\$6,000	<u>900</u>	\$9
			<u>\$10,000</u>			<u>\$6,000</u>	

BRIEF EXERCISE 9-5

Unrealized Holding Loss—Income (Purchase Commitments).....	70,000	
Estimated Liability on Purchase Commitments.....		70,000

BRIEF EXERCISE 9-6

Purchases (Inventory)	930,000	
Estimated Liability on Purchase Commitments ...	70,000	
Cash.....		1,000,000

BRIEF EXERCISE 9-7

Beginning inventory		\$150,000
Purchases		<u>500,000</u>
Cost of goods available		650,000
Sales	\$700,000	
Less gross profit (31% X 700,000)	<u>217,000</u>	
Estimated cost of goods sold		<u>483,000</u>
Estimated ending inventory destroyed in fire		<u>\$167,000</u>

BRIEF EXERCISE 9-8

	<u>Cost</u>	<u>Retail</u>
Beginning inventory	\$ 12,000	\$ 20,000
Net purchases	120,000	170,000
Net markups	<u> </u>	<u>10,000</u>
Totals	<u>\$132,000</u>	200,000
Deduct:		
Net markdowns		7,000
Sales		<u>157,000</u>
Ending inventory at retail		<u>\$ 36,000</u>

Cost-to-retail ratio: $\$132,000 \div \$200,000 = \underline{66\%}$

Ending inventory at lower of cost or market ($66\% \times \$36,000$) = \$23,760

BRIEF EXERCISE 9-9

Inventory turnover:

$$\frac{\$171,562}{\frac{\$22,614 + \$21,442}{2}} = 7.79 \text{ times}$$

Average days to sell inventory:

$$365 \div 7.79 = 46.9 \text{ days}$$

***BRIEF EXERCISE 9-10**

	<u>Cost</u>	<u>Retail</u>
Beginning inventory	<u>\$ 12,000</u>	<u>\$ 20,000</u>
Net purchases	120,000	170,000
Net markups		10,000
Net markdowns		<u>(7,000)</u>
Total (excluding beginning inventory)	<u>120,000</u>	<u>173,000</u>
Total (including beginning inventory)	<u>\$132,000</u>	193,000
Deduct: Sales		<u>157,000</u>
Ending inventory at retail		<u>\$ 36,000</u>

Cost-to-retail ratio: $\$120,000 \div \$173,000 = \underline{69.4\%}$

Ending inventory at cost

$$\begin{aligned} \$20,000 \times 60\% &= \$12,000 \\ 16,000 \times 69.4\% &= \underline{11,104} \\ &\underline{\underline{\$23,104}} \end{aligned}$$

***BRIEF EXERCISE 9-11**

	<u>Cost</u>	<u>Retail</u>
Beginning inventory	<u>\$ 12,000</u>	<u>\$ 20,000</u>
Net purchases	120,000	170,000
Net markups		10,000
Net markdowns		<u>(7,000)</u>
Total (excluding Beginning inventory)	<u>120,000</u>	<u>173,000</u>
Total (including Beginning inventory)	<u>\$132,000</u>	193,000
Deduct: Sales		<u>157,000</u>
Ending inventory at retail		<u>\$ 36,000</u>

***BRIEF EXERCISE 9-11 (Continued)**

Cost-to-retail ratio: $\$120,000 \div \$173,000 = \underline{69.4\%}$

Ending inventory at retail deflated to base year prices

$\$36,000 \div 1.20 = \underline{\$30,000}$

Ending inventory at cost

$\$20,000 \times 100\% \times 60\% = \$12,000$

$10,000 \times 120\% \times 69.4\% = \underline{8,328}$

\$20,328

SOLUTIONS TO EXERCISES

EXERCISE 9-1 (15-20 minutes)

Part No.	Quantity	Per Unit		Total Cost	Total Market	Lower of Cost or Market
		Cost	Market			
110	600	\$ 90	\$100.00	\$ 54,000	\$ 60,000	\$ 54,000
111	1,000	60	52.00	60,000	52,000	52,000
112	500	80	76.00	40,000	38,000	38,000
113	200	170	180.00	34,000	36,000	34,000
120	400	205	208.00	82,000	83,200	82,000
121	1,600	16	0.20	25,600	320	320
122	300	240	235.00	72,000	70,500	70,500
Totals				<u>\$367,600</u>	<u>\$340,020</u>	<u>\$330,820</u>

(a) \$330,820.

(b) \$340,020.

EXERCISE 9-2 (10-15 minutes)

Item	Net Realizable Value (Ceiling)	Net Realizable Value Less Normal Profit (Floor)	Replacement Cost	Designated Market	Cost	LCM
D	\$90*	\$70**	\$120	\$90	\$75	\$75
E	80	60	72	72	80	72
F	65	45	70	65	80	65
G	65	45	30	45	80	45
H	80	60	70	70	50	50
I	60	40	30	40	36	36

*Estimated selling price—Estimated selling expense = \$120 – \$30 = \$90.

**\$90 – \$20 = \$70.

EXERCISE 9-3 (15-20 minutes)

Item No.	Cost per Unit	Replacement Cost	Net Realizable Value	Net Real. Value Less Normal Profit	Designated Market Value	Quantity	Final Inventory Value
1320	\$3.20	\$3.00	\$4.15*	\$2.90**	\$3.00	1,200	\$ 3,600
1333	2.70	2.30	3.00	2.50	2.50	900	2,250
1426	4.50	3.70	4.60	3.60	3.70	800	2,960
1437	3.60	3.10	2.95	2.05	2.95	1,000	2,950
1510	2.25	2.00	2.45	1.85	2.00	700	1,400
1522	3.00	2.70	3.40	2.90	2.90	500	1,450
1573	1.80	1.60	1.75	1.25	1.60	3,000	4,800
1626	4.70	5.20	5.50	4.50	5.20	1,000	<u>4,700***</u>
							<u>\$24,110</u>

*\$4.50 – \$.35 = \$4.15.

**\$4.15 – \$1.25 = \$2.90.

***Cost is used because it is lower than designated market value.

EXERCISE 9-4 (10-15 minutes)

(a)	12/31/04	Cost of Goods Sold	19,000	
		Inventory		19,000
	12/31/05	Cost of Goods Sold	15,000	
		Inventory		15,000
(b)	12/31/04	Loss Due to Market Decline of Inventory	19,000	
		Allowance to Reduce Inventory to Market		19,000
	12/31/05	Allowance to Reduce Inventory to Market.....	4,000*	
		Recovery of Loss Due to Market Decline of Inventory		4,000

EXERCISE 9-4 (Continued)

*Cost of inventory at 12/31/04	\$346,000
Lower of cost or market at 12/31/04	<u>(327,000)</u>
Allowance amount needed to reduce inventory to market (a)	<u>\$ 19,000</u>
Cost of inventory at 12/31/05	\$410,000
Lower of cost or market at 12/31/05	<u>(395,000)</u>
Allowance amount needed to reduce inventory to market (b)	<u>\$ 15,000</u>
Recovery of previously recognized loss	= (a) – (b)
	= \$19,000 – \$15,000
	= \$4,000.

- (c) Both methods of recording lower of cost or market adjustments have the same effect on net income.

EXERCISE 9-5 (20-25 minutes)

(a)	February	March	April
Sales	<u>\$29,000</u>	<u>\$35,000</u>	<u>\$40,000</u>
Cost of goods sold			
Inventory, beginning	15,000	15,100	17,000
Purchases	<u>20,000</u>	<u>24,000</u>	<u>26,500</u>
Cost of goods available	35,000	39,100	43,500
Inventory, ending	<u>15,100</u>	<u>17,000</u>	<u>13,000</u>
Cost of goods sold	<u>19,900</u>	<u>22,100</u>	<u>30,500</u>
Gross profit	9,100	12,900	9,500
Gain (loss) due to market fluctuations of inventory*	<u>(2,000)</u>	<u>1,100</u>	<u>700</u>
	<u>\$ 7,100</u>	<u>\$14,000</u>	<u>\$10,200</u>

EXERCISE 9-5 (Continued)

*	<u>Jan. 31</u>	<u>Feb. 28</u>	<u>Mar. 31</u>	<u>Apr. 30</u>
Inventory at cost	\$15,000	\$15,100	\$17,000	\$13,000
Inventory at the lower of cost or market	<u>14,500</u>	<u>12,600</u>	<u>15,600</u>	<u>12,300</u>
Allowance amount needed to reduce inventory to market	<u>\$ 500</u>	<u>\$ 2,500</u>	<u>\$ 1,400</u>	<u>\$ 700</u>
Gain (loss) due to market fluctuations of inventory**		<u>\$ (2,000)</u>	<u>\$ 1,100</u>	<u>\$ 700</u>

**\$500 – \$2,500 = \$(2,000)
 \$2,500 – \$1,400 = \$1,100
 \$1,400 – \$700 = \$700

(b)	Jan. 31	Loss Due to Market Decline of Inventory..... Allowance to Reduce Inventory to Market	500 500
	Feb. 28	Loss Due to Market Decline of Inventory..... Allowance to Reduce Inventory to Market	2,000 2,000
	Mar. 31	Allowance to Reduce Inventory to Market... Recovery of Loss Due to Market Decline of Inventory.....	1,100 1,100
	Apr. 30	Allowance to Reduce Inventory to Market... Recovery of Loss Due to Market Decline of Inventory.....	700 700

EXERCISE 9-6

Net realizable value (ceiling)	$\$45 - \$14 = \$31$	
Net realizable value less normal profit (floor)	$\$31 - \$9 = \$22$	
Replacement cost	$\$35$	
Designated market	$\$31$	Ceiling
Cost	$\$40$	
Lower of cost or market	$\$31$	

$\$35$ figure used – $\$31$ correct value per unit = $\$4$ per unit.

$\$4 \times 1,000$ units = $\$4,000$.

If ending inventory is overstated, net income will be overstated.

If beginning inventory is overstated, net income will be understated.

Therefore, net income for 2004 was overstated by $\$4,000$ and net income for 2005 was understated by $\$4,000$.

EXERCISE 9-7 (15-20 minutes)

	No. of Lots	Price Per Lot	Total Selling Price	Relative Sales Price	Total Cost	Cost Allocated	Cost Per Lot (Cost Allocated/ No. of Lots)
Group 1	9	\$3,000	\$ 27,000	\$27,000/\$127,800	\$89,460	\$18,900	\$2,100
Group 2	15	4,000	60,000	\$60,000/\$127,800	89,460	42,000	2,800
Group 3	17	2,400	<u>40,800</u>	\$40,800/\$127,800	89,460	<u>28,560</u>	1,680
			<u>\$127,800</u>			<u>\$89,460</u>	

Sales (see schedule) \$80,000

Cost of goods sold (see schedule) 56,000

Gross profit 24,000

Operating expenses 18,200

Net income \$ 5,800

	Units* Sold	Unit Price	Total Sales	Cost Per Lot	Total Costs
Group 1	4	\$3,000	\$12,000	\$2,100	\$ 8,400
Group 2	8	4,000	32,000	2,800	22,400
Group 3	<u>15</u>	2,400	<u>36,000</u>	1,680	<u>25,200</u>
Total	<u>27</u>		<u>\$80,000</u>		<u>\$56,000</u>

* 9 - 5 = 4

15 - 7 = 8

17 - 2 = 15

EXERCISE 9-8 (12-17 minutes)

Total estimated selling price:

Lounge chairs, 400 X \$90	\$36,000
Armchairs, 300 X \$80	24,000
Straight chairs, 700 X \$50	<u>35,000</u>
	<u>\$95,000</u>

Sales during 2005:

200 X \$90	\$18,000
100 X \$80	8,000
120 X \$50	<u>6,000</u>
	<u>\$32,000</u>

Ratio of cost to selling price, \$59,850 ÷ \$95,000	63%
Gross profit realized in 2005, (100% – 63%) X \$32,000	<u>\$11,840</u>

Inventory on December 31, 2005, \$59,850 – (\$32,000 X 63%)	<u>\$39,690</u>
---	-----------------

OR

Unit costs would be:

Lounge chairs, \$90 X 63%	\$56.70
Armchairs, \$80 X 63%	50.40
Straight chairs, \$50 X 63%	31.50

Ending inventory would be:

Lounge chairs, 200 X \$56.70	\$11,340
Armchairs, 200 X \$50.40	10,080
Straight chairs, 580 X \$31.50	<u>18,270</u>
	<u>\$39,690</u>

EXERCISE 9-9 (5-10 minutes)

Unrealized Holding Loss—Income (Purchase Commitments).....

35,000

Estimated Liability on Purchase Commitments.....

35,000

EXERCISE 9-10 (15-20 minutes)

- (a) If the commitment is material in amount, there should be a footnote in the balance sheet stating the nature and extent of the commitment. The footnote may also disclose the market price of the materials. The excess of market price over contracted price is a gain contingency which per FASB Statement No. 5 cannot be recognized in the accounts until it is realized.
- (b) The drop in the market price of the commitment should be charged to operations in the current year if it is material in amount. The following entry would be made:

Unrealized Holding Loss—Income (Purchase Commitments).....	10,800	
Estimated Liability on Purchase Commitments.....		10,800

The entry is made because a loss in utility has occurred during the period in which the market decline took place. The account credited in the above entry should be included among the current liabilities on the balance sheet, with an appropriate footnote indicating the nature and extent of the commitment. This liability indicates the minimum obligation on the commitment contract at the present time—the amount that would have to be forfeited in case of breach of contract.

- (c) Assuming the \$10,800 market decline entry was made on December 31, 2005, as indicated in (b), the entry when the materials are received in January 2006 would be:

Raw Materials.....	97,200	
Estimated Liability on Purchase Commitments	10,800	
Accounts Payable.....		108,000

This entry sets up the raw materials at the adjusted amount, eliminates the \$10,800 liability set up at December 31, 2005, and records the contractual liability for the purchase. This permits operations to be charged this year with the \$97,200, the other \$10,800 of the cost having been charged to operations in 2005.

EXERCISE 9-11 (8-13 minutes)

1. $\frac{20\%}{100\% + 20\%} = 16.67\% \text{ OR } 16 \frac{2}{3}\%.$

2. $\frac{25\%}{100\% + 25\%} = 20\%.$

3. $\frac{33 \frac{1}{3}\%}{100\% + 33 \frac{1}{3}\%} = 25\%.$

4. $\frac{50\%}{100\% + 50\%} = 33.33\% \text{ OR } 33 \frac{1}{3}\%.$

EXERCISE 9-12 (10-15 minutes)

(a) Inventory, May 1 (at cost)		\$160,000
Purchases (gross) (at cost)		640,000
Purchase discounts		(12,000)
Freight-in		<u>30,000</u>
Goods available (at cost)		818,000
Sales (at selling price)	\$1,000,000	
Sales returns (at selling price)	<u>(70,000)</u>	
Net sales (at selling price)	930,000	
Less gross profit (30% of \$930,000)	<u>279,000</u>	
Sales (at cost)		<u>651,000</u>
Approximate inventory, May 31 (at cost)		<u>\$167,000</u>

EXERCISE 9-12 (Continued)

(b) Gross profit as a percent of sales must be computed:

$$\frac{30\%}{100\% + 30\%} = 23.08\% \text{ of sales.}$$

Inventory, May 1 (at cost)		\$160,000
Purchases (gross) (at cost)		640,000
Purchase discounts		(12,000)
Freight-in		<u>30,000</u>
Goods available (at cost)		818,000
Sales (at selling price)	\$1,000,000	
Sales returns (at selling price)	<u>(70,000)</u>	
Net sales (at selling price)	930,000	
Less gross profit (23.08% of \$930,000)	<u>214,644</u>	
Sales (at cost)		<u>715,356</u>
Approximate inventory, May 31 (at cost)		<u>\$102,644</u>

EXERCISE 9-13 (15-20 minutes)

(a) Merchandise on hand, January 1		\$38,000
Purchases	\$72,000	
Less purchase returns and allowances	<u>2,400</u>	
Net purchases	69,600	
Freight-in	<u>3,400</u>	<u>73,000</u>
Total merchandise available for sale		111,000
Cost of goods sold*		<u>75,000</u>
Ending inventory		36,000
Less undamaged goods		<u>10,900</u>
Estimated fire loss		<u>\$ 25,100</u>

$$*\text{Gross profit} = \frac{33 \frac{1}{3}\%}{100\% + 33 \frac{1}{3}\%} = 25\% \text{ of sales.}$$

Cost of goods sold = 75% of sales of \$100,000 = \$75,000.

EXERCISE 9-13 (Continued)

(b) Cost of goods sold = 66 2/3% of sales of \$100,000 = \$66,667	
Ending inventory [\$111,000 (as computed above) – \$66,667]	\$44,333
Less undamaged goods	<u>10,900</u>
Estimated fire loss	<u>\$33,433</u>

EXERCISE 9-14

Beginning inventory		\$170,000
Purchases		<u>390,000</u>
		560,000
Purchase returns		<u>(30,000)</u>
Total goods available		530,000
Sales	\$650,000	
Sales returns	<u>(24,000)</u>	
Net sales	626,000	
Less gross profit (40% X \$626,000)	<u>(250,400)</u>	<u>375,600</u>
Estimated ending inventory (unadjusted for damage)		154,400
Less goods on hand—undamaged (at cost) \$21,000 X (1 – 40%)		(12,600)
Less goods on hand—damaged (at net realizable value)		<u>(5,300)</u>
Fire loss on inventory		<u>\$136,500</u>

EXERCISE 9-15 (10-15 minutes)

Beginning inventory (at cost)		\$ 38,000
Purchases (at cost)		<u>85,000</u>
Goods available (at cost)		123,000
Sales (at selling price)	\$116,000	
Less sales returns	<u>4,000</u>	
Net sales	112,000	
Less gross profit* (2/7 of \$112,000)	<u>32,000</u>	
Net sales (at cost)		<u>80,000</u>
Estimated inventory (at cost)		43,000
Less: goods on hand (\$30,500 – \$6,000)		<u>24,500</u>
Claim against insurance company		<u>\$ 18,500</u>

*Computation of gross profit: $\frac{40\%}{100\% + 40\%} = 2/7$ of selling price

EXERCISE 9-16 (15-20 minutes)

	<u>Lumber</u>	<u>Millwork</u>	<u>Hardware</u>
Inventory 1/1/05 (cost)	\$ 250,000	\$ 90,000	\$ 45,000
Purchases to 8/18/05 (cost)	<u>1,500,000</u>	<u>375,000</u>	<u>160,000</u>
Cost of goods available	1,750,000	465,000	205,000
Deduct cost of goods sold	<u>1,664,000</u>	<u>410,000</u>	<u>150,000</u>
Inventory 8/18/05	<u>\$ 86,000</u>	<u>\$ 55,000</u>	<u>\$ 55,000</u>

EXERCISE 9-16 (Continued)

Computation for cost of goods sold:*

$$\text{Lumber: } \frac{\$2,080,000}{1.25} = \$1,664,000$$

$$\text{Millwork: } \frac{\$533,000}{1.30} = \$410,000$$

$$\text{Hardware: } \frac{\$210,000}{1.40} = \$150,000$$

*Alternative computation for cost of goods sold:

Markup on selling price:

Cost of goods sold:

$$\text{Lumber: } \frac{25\%}{100\% + 25\%} = 20\% \text{ or } 1/5 \quad \$2,080,000 \times 80\% = \$1,664,000$$

$$\text{Millwork: } \frac{30\%}{100\% + 30\%} = 3/13 \quad \$533,000 \times 10/13 = \$410,000$$

$$\text{Hardware: } \frac{40\%}{100\% + 40\%} = 2/7 \quad \$210,000 \times 5/7 = \$150,000$$

EXERCISE 9-17 (20-25 minutes)

Ending inventory:

(a) Gross profit is 45% of sales

Total goods available for sale (at cost)		\$2,100,000
Sales (at selling price)	\$2,500,000	
Less: gross profit (45% of sales)	<u>1,125,000</u>	
Sales (at cost)		<u>1,375,000</u>
Ending inventory (at cost)		<u>\$ 725,000</u>

(b) Gross profit is 60% of cost

$$\frac{60\%}{100\% + 60\%} = 37.5\% \text{ markup on selling price}$$

Total goods available for sale (at cost)		\$2,100,000
Sales (at selling price)	\$2,500,000	
Less: gross profit (37.5% of sales)	<u>937,500</u>	
Sales (at cost)		<u>1,562,500</u>
Ending inventory (at cost)		<u>\$ 537,500</u>

(c) Gross profit is 35% of sales

Total goods available for sale (at cost)		\$2,100,000
Sales (at selling price)	\$2,500,000	
Less: gross profit (35% of sales)	<u>875,000</u>	
Sales (at cost)		<u>1,625,000</u>
Ending inventory (at cost)		<u>\$ 475,000</u>

EXERCISE 9-17 (Continued)

(d) Gross profit is 25% of cost

$$\frac{25\%}{100\% + 25\%} = 20\% \text{ markup on selling price}$$

Total goods available for sale (at cost)		\$2,100,000
Sales (at selling price)	\$2,500,000	
Less: gross profit (20% of sales)	<u>500,000</u>	
Sales (at cost)		<u>2,000,000</u>
Ending inventory (at cost)		<u>\$ 100,000</u>

EXERCISE 9-18 (20-25 minutes)

(a)	<u>Cost</u>	<u>Retail</u>
Beginning inventory	\$ 58,000	\$100,000
Purchases	122,000	200,000
Net markups	<u> </u>	<u>10,345</u>
Totals	<u>\$180,000</u>	310,345
Net markdowns		<u>26,135</u>
Sales price of goods available		284,210
Deduct: Sales		<u>186,000</u>
Ending inventory at retail		<u>\$ 98,210</u>

- (b)
1. $\$180,000 \div \$300,000 = \underline{60\%}$
 2. $\$180,000 \div \$273,865 = \underline{65.73\%}$
 3. $\$180,000 \div \$310,345 = \underline{58\%}$
 4. $\$180,000 \div \$284,210 = \underline{63.33\%}$

EXERCISE 9-18 (Continued)

- (c) 1. Method 3.
 2. Method 3.
 3. Method 3.

(d) $58\% \times \$98,210 = \underline{\underline{\$56,962}}$

(e) $\$180,000 - \$56,962 = \underline{\underline{\$123,038}}$

(f) $\$186,000 - \$123,038 = \underline{\underline{\$62,962}}$

EXERCISE 9-19 (12-17 minutes)

	<u>Cost</u>	<u>Retail</u>
Beginning inventory	\$ 200,000	\$ 280,000
Purchases	<u>1,375,000</u>	<u>2,140,000</u>
Totals	1,575,000	2,420,000
Add net markups		
Markups	\$95,000	
Markup cancellations	<u>(15,000)</u>	<u>80,000</u>
	<u>\$1,575,000</u>	2,500,000
Deduct net markdowns		
Markdowns	35,000	
Markdowns cancellations	<u>(5,000)</u>	<u>30,000</u>
Sales price of goods available		2,470,000
Deduct sales		<u>2,200,000</u>
Ending inventory, at retail		<u>\$ 270,000</u>

Cost-to-retail ratio = $\frac{\$1,575,000}{\$2,500,000} = 63\%$

Ending inventory at cost = $63\% \times \$270,000 = \underline{\underline{\$170,100}}$

EXERCISE 9-20 (20-25 minutes)

	<u>Cost</u>	<u>Retail</u>
Beginning inventory	\$30,000	\$ 46,500
Purchases	48,000	88,000
Purchase returns	(2,000)	(3,000)
Freight on purchases	<u>2,400</u>	
Totals	78,400	<u>131,500</u>
Add net markups		
Markups		\$10,000
Markup cancellations		<u>(1,500)</u>
		<u>8,500</u>
Net markups	<u>\$78,400</u>	140,000
Deduct net markdowns		
Markdowns		9,300
Markdowns cancellations		<u>(2,800)</u>
Net markdowns		<u>6,500</u>
		133,500
Deduct net sales (\$99,000 – \$2,000)		<u>97,000</u>
Ending inventory, at retail		<u>\$ 36,500</u>

$$\text{Cost-to-retail ratio} = \frac{\$78,400}{\$140,000} = 56\%$$

$$\text{Ending inventory at cost} = 56\% \times \$36,500 = \underline{\underline{\$20,440}}$$

EXERCISE 9-21 (10-15 minutes)

(a) Inventory turnover:

2001	2000
<u>\$2,841.2</u>	<u>\$2,697.2</u>
= 5.52 times	= 5.76 times
$\frac{\$518.9 + \$510.5}{2}$	$\frac{\$510.5 + \$426.7}{2}$

(b) Average days to sell inventory:

2001	2000
<u>365 ÷ 5.52 = 66.1 days</u>	<u>365 ÷ 5.76 = 63.4 days</u>

***EXERCISE 9-22 (25-35 minutes)**

(a) Conventional Retail Method

	<u>Cost</u>	<u>Retail</u>
Inventory, January 1, 2003	\$ 38,100	\$ 60,000
Purchases (net)	<u>130,900</u>	<u>178,000</u>
	169,000	238,000
Add markups (net)	<u> </u>	<u>22,000</u>
	<u>\$169,000</u>	260,000
Deduct markdowns (net)		<u>13,000</u>
Sales price of goods available		247,000
Deduct sales (net)		<u>167,000</u>
Ending inventory, at retail		<u>\$ 80,000</u>

$$\text{Cost-to-retail ratio} = \frac{\$169,000}{\$260,000} = 65\%$$

$$\text{Ending inventory at cost} = 65\% \times \$80,000 = \underline{\underline{\$52,000}}$$

(b) LIFO Retail Method

	<u>Cost</u>	<u>Retail</u>
Inventory, January 1, 2003	\$ 38,100	\$ 60,000
Purchases (net)	130,900	178,000
Add markups (net)		22,000
Deduct markdowns (net)		<u>(13,000)</u>
Total (excluding beginning inventory)	<u>130,900</u>	<u>187,000</u>
Total (including beginning inventory)	<u>\$169,000</u>	247,000
Deduct sales (net)		<u>167,000</u>
Ending inventory, at retail		<u>\$ 80,000</u>

$$\text{Cost-to-retail ratio} = \frac{\$130,900}{\$187,000} = 70\%$$

***EXERCISE 9-22 (Continued)**

Computation of ending inventory at LIFO cost, 2004:

Ending Inventory at Retail Prices	Layers at Retail Prices	Cost to Retail (Percentage)	Ending Inventory at LIFO Cost
\$80,000	2003 \$60,000	X 63.5%*	\$38,100
	2004 20,000	X 70.0%	<u>14,000</u>
			<u>\$52,100</u>
<u>*\$38,100</u>	(prior years cost to retail)		
\$60,000			

***EXERCISE 9-23 (15-20 minutes)**

(a)	Cost	Retail
Inventory, January 1, 2004	\$14,000	\$ 20,000
Purchases (net)	58,800	81,000
Freight-in	7,500	
Net markups	<u> </u>	<u>9,000</u>
Totals	<u>\$80,300</u>	110,000
Sales		(80,000)
Net markdowns		(1,600)
Estimated theft		<u>(2,000)</u>
Ending inventory, at retail		<u>\$ 26,400</u>

Cost-to-retail ratio: $\frac{\$80,300}{\$110,000} = 73\%$

Ending inventory at lower of average cost or market = \$26,400 X 73%
= \$19,272

***EXERCISE 9-23 (Continued)**

(b)	Cost	Retail
Purchases	\$58,800	\$81,000
Freight-in	7,500	
Net markups		9,000
Net markdowns		(1,600)
Totals	<u>\$66,300</u>	<u>\$88,400</u>

Cost-to-retail ratio: $\frac{\$66,300}{\$88,400} = 75\%$

The increment is $\$26,400 - \$20,000 = \$6,400$.

The increment is costed at $75\% \times \$6,400 = \$4,800$.

Ending inventory at LIFO retail:

	Cost	Retail
Beginning inventory, 2004	\$14,000	\$20,000
Increment	4,800	6,400
Ending inventory, 2004	<u>\$18,800</u>	<u>\$26,400</u>

***EXERCISE 9-24 (10-15 minutes)**

(a) Cost-to-retail ratio—beginning inventory: $\frac{\$216,000}{\$300,000} = 72\%$

$\ast(\$294,300 \div 1.09) \times 72\% = \underline{\underline{\$194,400}}$

***Since inspection reveals that the inventory quantity has declined below the beginning level, it is necessary merely to convert the ending inventory to beginning-of-the-year prices (by dividing by 1.09) and then multiply it by the beginning cost-to-retail ratio (72%).**

***EXERCISE 9-24 (Continued)**

(b) Ending inventory at retail prices deflated $\\$365,150 \div 1.09$	\$335,000
Beginning inventory at beginning-of-year prices	<u>300,000</u>
Inventory increase in terms of beginning-of-year dollars	<u>\$ 35,000</u>
Beginning inventory (at cost)	\$216,000
Additional layer, $\\$35,000 \times 1.09 \times 76\%$*	<u>28,994</u>
	<u>\$244,994</u>

*** $(\$364,800 \div \$480,000)$**

***EXERCISE 9-25 (5-10 minutes)**

Ending inventory at retail (deflated) $\\$100,100 \div 1.10$	\$91,000
Beginning inventory at retail	<u>74,500</u>
Increment at retail	<u>\$16,500</u>

Ending inventory on LIFO basis	<u>Cost</u>
First layer	\$36,000
Second layer ($\\$16,500 \times 1.10 \times 60\%$)	<u>10,890</u>
	<u>\$46,890</u>

***EXERCISE 9-26 (20-25 minutes)**

(a)	Cost	Retail
Beginning inventory	\$ 30,100	\$ 50,000
Net purchases	108,500	150,000
Net markups		10,000
Cost-retail totals	<u>\$138,600</u>	<u>210,000</u>
Net markdowns		(5,000)
Sales		(126,900)
Ending inventory at retail		<u>\$ 78,100</u>

Cost-retail ratio $\$138,600/\$210,000 =$ 66%
 Ending inventory at cost
 ($\$78,100 \times 66\%$) \$ 51,546

(b)	Cost	Retail
Beginning inventory	\$ 30,100	\$ 50,000
Net purchases	108,500	150,000
Net markups		10,000
Net markdowns		(5,000)
Total (excluding beginning inventory)	<u>108,500</u>	<u>155,000</u>
Total (including beginning inventory)	<u>\$138,600</u>	<u>205,000</u>
Sales		(126,900)
Ending inventory at retail (current)		<u>78,100</u>
Ending inventory at retail (base year) ($\$78,100 \div 1.10$)		<u>\$ 71,000</u>

Cost-retail ratio for new layer:
 $\$108,500/\$155,000 =$ 70%

Layers:

Base layer
 $\$50,000 \times 1.00 \times 60.2\%^* =$ \$ 30,100

New layer
 $(\$71,000 - \$50,000) \times 1.10 \times 70\% =$ 16,170
\$ 46,270

*($\$30,100/\$50,000$)

(c) Cost of goods available for sale	\$138,600
Ending inventory at cost, from (b)	46,270
Cost of goods sold	<u>\$ 92,330</u>

***EXERCISE 9-27 (20-25 minutes)**

2003	Restate to base-year retail (\$118,720 ÷ 1.06)	<u>\$112,000</u>
	Layers: 1. \$100,000 X 1.00 X 54% =	\$ 54,000
	2. \$ 12,000 X 1.06 X 57% =	<u>7,250</u>
	Ending inventory	<u>\$ 61,250</u>
2004	Restate to base-year retail (\$138,750 ÷ 1.11)	<u>\$125,000</u>
	Layers: 1. \$100,000 X 1.00 X 54% =	\$ 54,000
	2. \$ 12,000 X 1.06 X 57% =	<u>7,250</u>
	3. \$ 13,000 X 1.11 X 60% =	<u>8,658</u>
	Ending inventory	<u>\$ 69,908</u>
2005	Restate to base-year retail (\$125,350 ÷ 1.15)	<u>\$109,000</u>
	Layers: 1. \$100,000 X 1.00 X 54% =	\$ 54,000
	2. \$ 9,000 X 1.06 X 57% =	<u>5,438</u>
	Ending inventory	<u>\$ 59,438</u>
2006	Restate to base-year retail (\$162,500 ÷ 1.25)	<u>\$130,000</u>
	Layers: 1. \$100,000 X 1.00 X 54% =	\$ 54,000
	2. \$ 9,000 X 1.06 X 57% =	<u>5,438</u>
	3. \$ 21,000 X 1.25 X 58% =	<u>15,225</u>
	Ending inventory	<u>\$ 74,663</u>

***EXERCISE 9-28 (5-10 minutes)**

Inventory (beginning)	7,600	
 Adjustment to Record Inventory at Cost*		7,600
 (\$212,500 – \$205,000)		

***Note: This account is an income statement account showing the effect of changing from a lower-of-cost-or-market approach to a straight cost basis.**

TIME AND PURPOSE OF PROBLEMS

Problem 9-1 (Time 10-15 minutes)

Purpose—to provide the student with an understanding of the lower of cost or market approach to inventory valuation, similar to Problem 9-2. The major difference between these problems is that Problem 9-1 provides some ambiguity to the situation by changing the catalog prices near the end of the year.

Problem 9-2 (Time 25-30 minutes)

Purpose—to provide the student with an understanding of the lower of cost or market approach to inventory valuation. The student is required to examine a number of individual items and apply the lower of cost or market rule and to also explain the use and value of the lower of cost or market rule.

Problem 9-3 (Time 30-35 minutes)

Purpose—to provide a problem that requires entries for reducing inventory to lower of cost or market under the periodic inventory system using both the direct and the indirect method.

Problem 9-4 (Time 20-30 minutes)

Purpose—to provide another problem where a fire loss must be computed using the gross profit method. Certain goods remained undamaged and therefore an adjustment is necessary. In addition, the inventory was subject to an obsolescence factor which must be considered.

Problem 9-5 (Time 40-45 minutes)

Purpose—to provide the student with a complex problem involving a fire loss where the gross profit method must be employed. The problem is complicated because a number of adjustments must be made to the purchases account related to merchandise returned, unrecorded purchases, and shipments in transit. In addition, some cash to accrual computations are necessary.

Problem 9-6 (Time 20-30 minutes)

Purpose—to provide the student with a problem on the retail inventory method. The problem is relatively straightforward although transfers-in from other departments as well as the proper treatment for normal spoilage complicate the problem. A good problem that summarizes the essentials of the retail inventory method.

Problem 9-7 (Time 20-30 minutes)

Purpose—to provide the student with a problem on the retail inventory method. This problem is similar to Problem 9-6, except that a few different items must be evaluated in finding ending inventory at retail and cost. Unusual items in this problem are employee discounts granted and loss from breakage. A good problem that summarizes the essentials of the retail inventory method.

Problem 9-8 (Time 20-30 minutes)

Purpose—to provide the student with a problem on the retail inventory method. This problem is similar to Problems 9-6 and 9-7, except that the student is asked to list the factors that may have caused the difference between the computed inventory and the physical count.

Problem 9-9 (Time 30-40 minutes)

Purpose—to provide the student with a problem requiring financial statement and note disclosure of inventories, the income disclosure of an inventory market decline, and the treatment of purchase commitments.

Problem 9-10 (Time 30-40 minutes)

Purpose—to provide the student with an opportunity to write a memo explaining what is designated market value and how it is computed. As part of this memo, the student is required to compute inventory on the lower of cost or market basis using the individual item approach.

Time and Purpose of Problems (Continued)

***Problem 9-11** (Time 30-35 minutes)

Purpose—to provide the student with a retail inventory problem where both the conventional retail and dollar-value LIFO method must be computed. An excellent problem for highlighting the difference between these two approaches to inventory valuation. It should be noted that the cost to retail percentage is given for LIFO so less computation is necessary.

***Problem 9-12** (Time 30-40 minutes)

Purpose—to provide the student with a comprehensive problem covering the retail and LIFO retail inventory methods, the computation of an inventory shortage, and the treatment of four special items relative to the retail inventory method.

***Problem 9-13** (Time 30-40 minutes)

Purpose—to provide the student with a basic problem illustrating the change from conventional retail to LIFO retail. This problem emphasizes many of the same issues as Problem 9-11, except that a dollar-value LIFO computation is not needed. A good problem for providing the essential issues related to a change to LIFO retail.

***Problem 9-14** (Time 40-50 minutes)

Purpose—to provide the student with a retail inventory problem where both the conventional retail and dollar-value LIFO method must be computed. The problem is similar to Problem 9-10, except that the problem involves a three-year period which adds complexity to the problem. This problem provides an excellent summary of the essential elements related to the change of the retail inventory method from conventional retail to LIFO retail and dollar-value LIFO retail.

SOLUTIONS TO PROBLEMS

PROBLEM 9-1

<u>Item</u>	<u>Cost</u>	<u>Replacement Cost</u>	<u>Ceiling*</u>	<u>Floor**</u>	<u>Designated Market</u>	<u>Lower of Cost or Market</u>
A	\$470	\$ 460	\$ 455	\$355	\$ 455	\$455
B	450	440	480	372	440	440
C	830	610	810	630	630	630
D	960	1,000	1,070	830	1,000	960

***Ceiling = 2006 catalog selling price less sales commissions and estimated other cost of disposal. (2006 catalogue prices are in effect as of 12/01/05.)**

****Floor = Ceiling less (20% X 2006 catalog selling price).**

PROBLEM 9-2

- (a) 1. The balance in the Allowance to Reduce Inventory to Market at May 31, 2004, should be \$36,000, as calculated in Exhibit 1 below.

Exhibit 1

**Calculations of Proper Balance
on the Allowance to Reduce Inventory to Market
At May 31, 2004**

	Cost	Replace- ment Cost	NRV (Ceiling)	NRV less normal profit (Floor)	LCM
Aluminum siding	\$ 70,000	\$ 62,500	\$ 56,000	\$ 50,900	\$ 56,000
Cedar shake siding	86,000	79,400	84,800	77,400	79,400
Louvered glass doors	112,000	124,000	168,300	149,800	112,000
Thermal windows	<u>140,000</u>	<u>122,000</u>	<u>140,000</u>	<u>124,600</u>	<u>124,600</u>
Totals	<u>\$408,000</u>	<u>\$387,900</u>	<u>\$449,100</u>	<u>\$402,700</u>	<u>\$372,000</u>

Inventory cost	\$408,000
LCM valuation	<u>372,000</u>
Allowance at May 31, 2004	<u>\$ 36,000</u>

2. For the fiscal year ended May 31, 2004, the loss that would be recorded due to the change in the Allowance to Reduce Inventory to Market would be \$6,500, as calculated below.

Balance prior to adjustment	\$29,500
Required balance	<u>(36,000)</u>
Loss to be recorded	<u><u>\$(6,500)</u></u>

PROBLEM 9-2 (Continued)

- (b) The use of the lower of cost or market (LCM) rule is based on both the matching principle and the concept of conservatism. The matching principle applies because the application of the LCM rule allows for the recognition of a decline in the utility (value) of inventory as a loss in the period in which the decline takes place.**

The departure from the cost principle for inventory valuation is permitted on the basis of conservatism. The general rule is that the historical cost principle is abandoned when the future utility of an asset is no longer as great as its original cost.

PROBLEM 9-3

(a)	12/31/04 (Direct Method)		
	Cost of Goods Sold	58,000	
	Inventory		58,000
	12/31/05		
	Cost of Goods Sold	70,000	
	Inventory		70,000
(b)	12/31/04 (Allowance Method)		
	To write down inventory to market:		
	Loss Due to Market Decline of Inventory.....	58,000	
	Allowance to Reduce Inventory to Market		58,000
	12/31/05		
	To write down inventory to market:		
	Loss Due to Market Decline of Inventory.....	12,000	
	Allowance to Reduce Inventory to Market		12,000
	[((\$900,000 – \$830,000) – \$58,000)]		

PROBLEM 9-4

Beginning inventory		\$ 80,000
Purchases		<u>280,000</u>
		360,000
Purchase returns		<u>(28,000)</u>
Total goods available		332,000
Sales	\$415,000	
Sales returns	<u>(21,000)</u>	
	394,000	
Less gross profit (34% of \$394,000)	<u>133,960</u>	<u>(260,040)</u>
Ending inventory (unadjusted for damage)		71,960
Less goods on hand—undamaged (\$30,000 X [1 – 34%])		<u>19,800</u>
Inventory damaged		52,160
Less salvage value of damaged inventory		<u>7,150</u>
Fire loss on inventory		<u><u>\$ 45,010</u></u>

PROBLEM 9-5

John Kimmel Corporation
COMPUTATION OF INVENTORY FIRE LOSS
April 15, 2005

Inventory, 1/1/05		\$ 75,000
Purchases, 1/1/ – 3/31/05		52,000
April merchandise shipments paid		3,400
Unrecorded purchases on account		<u>10,600</u>
Total		141,000
Less: Shipments in transit	\$ 2,300	
Merchandise returned	<u>950</u>	<u>3,250</u>
Merchandise available for sale		137,750
Less estimated cost of sales:		
Sales, 1/1/ – 3/31/05	135,000	
Sales, 4/1/ – 4/15/05		
Receivables acknowledged		
at 4/15/05	\$36,000	
Estimated receivables not		
acknowledged	<u>8,000</u>	
Total	44,000	
Add collections, 4/1/ – 4/15/05		
(\$12,950 – \$950)	<u>12,000</u>	
Total	56,000	
Less receivables, 3/31/05	<u>40,000</u>	<u>16,000</u>
Total sales 1/1/ – 4/15/05	151,000	
Less gross profit (44% X \$151,000)	<u>66,440</u>	<u>84,560</u>
Estimated merchandise inventory		53,190
Less sale of salvaged inventory		<u>3,500</u>
Inventory fire loss		<u><u>\$ 49,690</u></u>

PROBLEM 9-5 (Continued)

Computation of Gross Profit Ratio

Net sales, 2003		\$390,000
Net sales, 2004		<u>530,000</u>
 Total net sales		920,000
Beginning inventory	\$ 75,200	
Net purchases, 2003	235,000	
Net purchases, 2004	<u>280,000</u>	
 Total	590,200	
Less ending inventory	<u>75,000</u>	<u>515,200</u>
 Gross profit		<u>\$404,800</u>
 Gross profit ratio		
 (\$404,800 ÷ \$920,000)		<u>44%</u>

PROBLEM 9-6

(a)	Cost	Retail
Inventory (beginning)	\$ 17,000	\$ 25,000
Purchases	86,500	137,000
Freight-in	7,000	
Purchase allowances	(2,200)	
Purchase returns	(2,300)	(3,000)
Transfers-in from suburb branch	9,200	13,000
	<u>\$115,200</u>	172,000
Markups (net)		8,000
		180,000
Markdowns (net)		(4,000)
Inventory losses due to breakage		(400)
Sales		\$(85,000)
Sales returns		2,400
Net sales		(82,600)
Ending inventory at retail		<u>\$ 93,000</u>

$$\text{Cost-to-retail ratio} = \frac{\$115,200}{\$180,000} = 64\%$$

(b) Ending inventory at lower of average cost or market
 (64% of \$93,000) \$ 59,520

PROBLEM 9-7

	Cost	Retail
Inventory (beginning)	\$ 250,000	\$ 390,000
Purchases	914,500	1,460,000
Purchase returns	(60,000)	(80,000)
Purchase discounts	(18,000)	
Freight-in	79,000	
Markups		120,000
Markup cancellations		<u>(40,000)</u>
	<u>\$1,165,500</u>	<u>1,850,000</u>
Markdowns		(45,000)
Markdown cancellations		<u>20,000</u>
Inventory losses due to breakage		(2,500)
Employee discounts		(8,000)
Sales	\$(1,460,000)	
Sales returns	<u>97,500</u>	<u>(1,362,500)</u>
Ending inventory at retail		<u>\$ 452,000</u>

Cost-to-retail ratio = $\frac{\$1,165,500}{\$1,850,000} = 63\%$

Ending inventory at cost (63% of \$452,000) \$ 284,760

PROBLEM 9-8

(a)	Cost	Retail
Inventory (beginning)	\$ 52,000	\$ 78,000
Purchases	262,000	423,000
Purchase returns	(5,600)	(8,000)
Freight-in	16,600	
	\$325,000	493,000
Markups		9,000
Markup cancellations		(2,000)
		500,000
Markdowns (net)		(3,600)
Normal spoilage and breakage		(10,000)
Sales		(380,000)
Ending inventory at retail		\$106,400

$$\text{Cost-to-retail ratio} = \frac{\$325,000}{\$500,000} = 65\%$$

Ending inventory at lower of cost or market (65% of \$106,400)	<u>\$ 69,160</u>
---	-------------------------

- (b) The difference between the inventory estimate per retail method and the amount per physical count may be due to:
1. Theft losses (shoplifting or pilferage).
 2. Spoilage or breakage above normal.
 3. Differences in cost/retail ratio for purchases during the month, beginning inventory, and ending inventory.
 4. Markups on goods available for sale inconsistent between cost of goods sold and ending inventory.
 5. A wide variety of merchandise with varying cost/retail ratios.
 6. Incorrect reporting of markdowns, additional markups, or cancellations.

PROBLEM 9-9

- (a) The inventory section of Brooks' Statement of Financial Position as of November 30, 2004, including required footnotes, is presented below. Also presented below are the inventory section supporting calculations.

Current assets

Inventory Section (*Note 1.*)

Finished goods (<i>Note 2.</i>)	\$641,000
Work-in-process	108,700
Raw materials	227,400
Factory supplies	<u>64,800</u>
Total inventories	<u>\$1,041,900</u>

Note 1. Lower of cost (first-in, first-out) or market is applied on a major category basis for finished goods, and on a total inventory basis for work-in-process, raw materials, and factory supplies.

Note 2. Seventy-five percent of bar end shifters finished goods inventory in the amount of \$136,500 ($\$182,000 \times .75$) is pledged as collateral for a bank loan, and one-half of the head tube shifters finished goods is held by catalog outlets on consignment.

PROBLEM 9-9 (Continued)

Supporting Calculations

	<u>Finished Goods</u>	<u>Work-in- Process</u>	<u>Raw Materials</u>	<u>Factory Supplies</u>
Down tube shifters at market	\$264,000			
Bar end shifters at cost	182,000			
Head tube shifters at cost	195,000			
Work-in-process at market		\$108,700		
Derailleurs at market			\$100,000 ¹	
Remaining items at market			127,400	
Supplies at cost				\$64,800 ²
Totals	<u>\$641,000</u>	<u>\$108,700</u>	<u>\$227,400</u>	<u>\$64,800</u>

¹\$120,000 ÷ 1.2 = \$100,000.

²\$69,000 – \$4,200 = \$64,800.

- (b) The decline in the market value of inventory below cost may be reported using one or two alternate methods, the direct write-down of inventory or the establishment of an allowance account. The decline in the market value of inventory may be reflected in Brooks' Income Statement as a separate loss item for the fiscal year ended November 30, 2004. The loss amount may also be written off directly, increasing the cost of goods sold on Brooks' Income Statement. The loss must be reported in continuing operations rather than in extraordinary items. The loss must be included in the Income Statement since it is material to Brooks' financial statements.
- (c) Purchase contracts for which a firm price has been established should be disclosed on the financial statements of the buyer. If the contract price is greater than the current market price and a loss is expected when the purchase takes place, an unrealized holding loss amounting to the difference between the contracted price and the current market price should be recognized on the Income Statement in the period during which the price decline takes place. Also, an estimated liability on purchase commitments should be recognized on the Statement of Financial Position. The recognition of the loss is unnecessary if a firm sales commitment exists which precludes the loss.

PROBLEM 9-10

(a) Schedule A

Item	On Hand Quantity	Replacement Cost/Unit	NRV Ceiling	NRV— Normal Profit (Floor)	Designated Market	Cost	Lower of Cost or Market
A	1,100	\$8.40	\$9.00	\$7.20	\$8.40	\$7.50	\$7.50
B	800	8.00	8.50	7.30	8.00	8.20	8.00
C	1,000	5.40	6.10	5.50	5.50	5.60	5.50
D	1,000	4.20	5.50	4.00	4.20	3.80	3.80
E	1,400	6.30	6.10	5.10	6.10	6.40	6.10

Schedule B

Item	Cost	Lower of Cost or Market	Difference
A	1,100 X \$7.50 = \$8,250	1,100 X \$7.50 = \$8,250	None
B	800 X \$8.20 = \$6,560	800 X \$8.00 = \$6,400	\$160
C	1,000 X \$5.60 = \$5,600	1,000 X \$5.50 = \$5,500	\$100
D	1,000 X \$3.80 = \$3,800	1,000 X \$3.80 = \$3,800	None
E	1,400 X \$6.40 = \$8,960	1,400 X \$6.10 = \$8,540	<u>\$420</u>
			<u>\$680</u>

(b) Cost of Goods Sold.....	680	
Inventory		680

or

Loss Due to Market Decline of Inventory	680	
Allowance to Reduce Inventory to Market.....		680

PROBLEM 9-10 (Continued)

(c)

To: Finn Berg, Clerk

From: Manager of Accounting

Date: January 14, 2004

Subject: Instructions on determining lower of cost or market for inventory valuation

This memo responds to your questions regarding our use of lower of cost or market for inventory valuation. Simply put, value inventory at whichever is the lower: the actual cost or the market value of the inventory at the time of valuation.

The term cost is relatively simple. It refers to the amount our company paid for our inventory including costs associated with preparing the inventory for sale.

The term market, on the other hand, is more complicated. As you have already noticed, this value could be the inventory's replacement cost, its net realizable value (selling price minus any estimated costs to complete and sell), or its net realizable value less a normal profit margin. The profession requires that the middle value of the three above costs be chosen as the "designated market value." This designated market value is then compared to the actual cost in determining the lower of cost or market.

Refer to Item A on the attached schedule. The values for the replacement cost, net realizable value, and net realizable value less a normal profit margin are \$8.40, \$9.00 (\$10.50 – \$1.50), and \$7.20 (\$9.00 – \$1.80) respectively. The middle value is the replacement cost, \$8.40, which becomes the designated market value for Item A. Compare it with the actual cost, \$7.50, choosing the lower to value Item A in inventory. In this case, \$7.50 is the value chosen to value inventory. Thus, inventory for Item A amounts to \$8,250. (See Schedule B, Item A.)

PROBLEM 9-10 (Continued)

Proceed in the same way, always choosing the middle value among replacement cost, net realizable value, and net realizable value less a normal profit, and compare that middle value to the actual cost. The lower of these will always be the amount at which you value the particular item.

After you have aggregated the total lower of cost or market for all items, you will be likely to have a loss on inventory which must be accounted for. In our example, the loss is \$680. You can journalize this loss in one of two ways:

Cost of Goods Sold	680	
Inventory		680

or

Loss Due to Market Decline of Inventory	680	
Allowance to Reduce Inventory to Market.....		680

This memo should answer your questions about which value to choose when valuing inventory at lower of cost or market.

Schedule A

Item	On Hand Quantity	Replacement Cost/Unit	NRV Ceiling	NRV— Normal Profit (Floor)	Designated Market	Cost	Lower of Cost or Market
A	1,100	\$8.40	\$9.00	\$7.20	\$8.40	\$7.50	\$7.50
B	800	8.00	8.50	7.30	8.00	8.20	8.00
C	1,000	5.40	6.10	5.50	5.50	5.60	5.50
D	1,000	4.20	5.50	4.00	4.20	3.80	3.80
E	1,400	6.30	6.10	5.10	6.10	6.40	6.10

Schedule B

Item	Cost	Lower of Cost or Market	Difference
A	1,100 X \$7.50 = \$8,250	1,100 X \$7.50 = \$8,250	None
B	800 X \$8.20 = \$6,560	800 X \$8.00 = \$6,400	\$160
C	1,000 X \$5.60 = \$5,600	1,000 X \$5.50 = \$5,500	\$100
D	1,000 X \$3.80 = \$3,800	1,000 X \$3.80 = \$3,800	None
E	1,400 X \$6.40 = \$8,960	1,400 X \$6.10 = \$8,540	<u>\$420</u>
			<u>\$680</u>

***PROBLEM 9-11**

(a)	Cost	Retail
Inventory, January 1	\$ 30,000	\$ 43,000
Purchases	108,800	155,000
Purchase returns and allowances	<u>(2,800)</u>	<u>(4,000)</u>
Totals	136,000	194,000
Add net markups		
Markups		\$ 9,200
Markup cancellations		<u>(3,200)</u>
Totals	<u>\$136,000</u>	<u>6,000</u>
Deduct net markdowns		
Markdowns		\$ 10,500
Markdown cancellations		<u>(6,500)</u>
Sales price of goods available		<u>196,000</u>
Sales		\$159,000
Sales returns and allowances		<u>(8,000)</u>
Ending inventory at retail		<u>\$ 45,000</u>

$$\text{Cost-to-retail ratio} = \frac{\$136,000}{\$200,000} = 68\%$$

Inventory at lower of cost or market (68% X \$45,000) **\$ 30,600**

(b) Ending inventory at retail at January 1 price level (\$54,000 ÷ 1.08)	\$ 50,000
Less beginning inventory at retail	<u>43,000</u>
Inventory increment at retail, January 1 price level	<u>\$ 7,000</u>
Inventory increment at retail, June 30 price level (\$7,000 X 1.08)	<u>\$ 7,560</u>
Beginning inventory at cost	\$ 30,000
Inventory increment at cost at June 30 price level (\$7,560 X 70%)	<u>5,292</u>
Ending inventory at dollar-value LIFO cost	<u>\$ 35,292</u>

***PROBLEM 9-12**

(a) The retail method is appropriate in businesses that sell many different items at relatively low unit costs and that have a large volume of transactions such as Sears or Wal-mart. The advantages of the retail method in these circumstances include the following:

- (1) Interim physical inventories can be estimated.
- (2) The retail method acts as a control as deviations from the physical count will have to be explained.

(b) Sprint Department Stores' ending inventory value, at cost, is \$75,300, calculated as follows:

	Cost	Retail
Beginning inventory	<u>\$ 68,000</u>	<u>\$100,000</u>
Purchases	\$248,200	\$400,000
Net markups		50,000
Net markdowns		<u>(110,000)</u>
Net purchases	<u>\$248,200</u>	<u>340,000</u>
Goods available		440,000
Sales		<u>(330,000)</u>
Estimated ending inventory at retail		<u>\$110,000</u>

Cost-to-retail percentage: $\$248,200 \div \$340,000 = \underline{73\%}$.

Beginning inventory layer	\$ 68,000	\$100,000
Incremental increase		
At retail		10,000
At cost (\$10,000 X 73%)	7,300	
Estimated ending inventory at LIFO cost	<u>\$ 75,300</u>	<u>\$110,000</u>

***PROBLEM 9-12 (Continued)**

- (c) The estimated shortage amount, at retail, for Sprint Department Stores is \$3,000 calculated as follows:

Estimated ending inventory at retail	\$110,000
Actual ending inventory at retail	<u>107,000</u>
Estimated inventory shortage	<u>\$ 3,000</u>

- (d) When using the retail inventory method, the four expenses and allowances noted are treated in the following manner:
- (1) Freight costs are added to the cost of purchases.
 - (2) Purchase returns and allowances are considered as reductions to both the cost price and the retail price.
 - (3) Sales returns and allowances are subtracted as an adjustment to sales.
 - (4) Employee discounts are deducted from the retail column in a manner similar to sales. They are not considered in the cost-to-retail percentage because they do not reflect an overall change in the selling price.

***PROBLEM 9-13**

(a)	Cost	Retail
Inventory (beginning)	\$ 13,600	\$ 24,000
Purchases	116,200	184,000
Markups		12,000
	<u>\$129,800</u>	220,000
Markdowns		(5,500)
Sales		(170,000)
Ending inventory at retail		<u>\$ 44,500</u>

$$\text{Cost-to-retail ratio} = \frac{\$129,800}{\$220,000} = 59\%$$

Ending inventory at cost (59% X \$44,500)	<u>\$ 26,255</u>
---	------------------

(b) Ending inventory for 2004 under the LIFO method:

The cost-to-retail ratio for 2004 can be computed as follows:

$$\frac{\text{Net purchases at cost}}{\text{Net purchases plus markups less markdowns at retail}} = \frac{\$116,200}{\$184,000 + \$12,000 - \$5,500} = 61\%$$

December 31, 2004, inventory at LIFO cost:

	Retail	Ratio	LIFO Cost
Beginning inventory	\$24,000	57%	\$13,680
Increment in 2004	20,500*	61%	12,505
Ending inventory	<u>\$44,500</u>		<u>\$26,185</u>

*\$44,500 – \$24,000 = \$20,500

***PROBLEM 9-14**

(a) **Rudyard Kipling Department Store**
COMPUTATION OF COST
OF DECEMBER 31, 2002, INVENTORY
BASED ON THE CONVENTIONAL RETAIL METHOD

	<u>At Cost</u>	<u>At Retail</u>
Beginning inventory, January 1, 2002	\$ 26,700	\$ 56,000
Add (deduct) transactions affecting cost ratio:		
Gross purchases	311,000	554,000
Purchase returns	(5,200)	(10,000)
Purchase discounts	(6,000)	
Freight-in	17,600	
Net markups		<u>20,000</u>
Totals (ratio of cost to retail, 55.5%)	<u>\$344,100</u>	<u>620,000</u>
Add (deduct) other retail transactions not considered in computation of cost ratio:		
Gross sales		(551,000)
Sales returns		9,000
Net markdowns		(12,000)
Employee discounts		<u>(3,000)</u>
Totals		<u>(557,000)</u>
Inventory, December 31, 2002:		
At retail		<u>\$ 63,000</u>
At cost (\$63,000 X 55.5%)	<u>\$ 34,965</u>	

***PROBLEM 9-14 (Continued)**

**(b) COMPUTATION OF COST
OF DECEMBER 31, 2002 INVENTORY
UNDER THE LIFO RETAIL METHOD**

	<u>Cost</u>	<u>Retail</u>
Totals used in computing cost ratio under conventional retail method (part a)	\$344,100	\$620,000
Exclude beginning inventory	<u>26,700</u>	<u>56,000</u>
Net purchases	317,400	564,000
Deduct net markdowns	<u> </u>	<u>12,000</u>
Totals used on computing cost ratio under LIFO retail method	<u>\$317,400</u>	<u>\$552,000</u>
Cost ratio under LIFO retail method (\$317,400 ÷ \$552,000)	57.5%	
Inventory, December 31, 2002:		
At Retail (Conventional)		<u>\$63,000</u>
At Cost under LIFO retail method (\$63,000 X 57.5%)	<u>\$ 36,225</u>	

***PROBLEM 9-14 (Continued)**

**(c) COMPUTATION OF 2003 AND 2004
YEAR-END INVENTORIES
UNDER THE DOLLAR-VALUE LIFO METHOD**

Computation of retail values on the basis of January 1, 2003, price levels

	<u>Cost</u>	<u>Retail</u>
2003:		
Inventory at end of year (given)		<u>\$73,500</u>
Inventory at end of year stated in terms of January 1, 2003 prices ($\$73,500 \div$ 105%)		70,000
January 1, 2003 inventory base (given) cost ratio of 55.5% ($\$34,965 \div \$63,000$)	\$34,965	<u>63,000</u>
Increment in inventory:		
In terms of January 1, 2003 prices		<u>\$ 7,000</u>
In terms of 2003 prices— $\$7,000 \times 105\%$		<u>\$ 7,350</u>
At LIFO cost—61% (2003 cost ratio) \times \$7,350	<u>4,484</u>	
December 1, 2003 inventory at LIFO cost	<u>\$39,449</u>	
2004:		
Inventory at end of year (given)		<u>\$65,880</u>
Inventory at end of year stated in terms of January 1, 2004 prices ($\$65,880 \div$ 108%)		<u>\$61,000</u>
December 31, 2004 inventory at LIFO cost—55.5%* (January 1, 2003 cost ratio) \times \$61,000	<u>\$33,855</u>	

***PROBLEM 9-14 (Continued)**

(Note to instructor: Because the retail inventory stated in terms of January 1, 2003 prices at December 31, 2003, \$61,000, has fallen below the January 1, 2004 inventory base at retail, \$63,000, under the LIFO theory the 2003 layer has been depleted and only a portion of the original inventory base remains. Hence the LIFO cost at December 31, 2004 is determined by applying the January 1, 2003 cost ratio of 55.5 percent to the retail inventory value of \$61,000).

***Based on the beginning inventory for 2003 of $\frac{\$34,965 \text{ Cost}}{\$63,000 \text{ Retail}} = 55.5\%$.**

TIME AND PURPOSE OF CASES

Case 9-1 (Time 15-25 minutes)

Purpose—to provide the student with an opportunity to discuss the purpose, the application, and the potential disadvantages of the lower of cost or market method. In addition, the student is asked to discuss the ceiling and floor constraints for determining “market” value.

Case 9-2 (Time 20-30 minutes)

Purpose—to provide the student with an opportunity to examine ethical issues related to lower of cost or market on an individual-product basis. A relatively straightforward case.

Case 9-3 (Time 15-20 minutes)

Purpose—to provide the student with a case that requires an application and an explanation of the lower of cost or market rule and a differentiation of the LIFO and the average cost methods.

Case 9-4 (Time 25-30 minutes)

Purpose—to provide the student with an opportunity to discuss the main features of the retail inventory system. In this case, the following must be explained: (a) accounting features of the method, (b) conditions that may distort the results under the method, (c) advantages of using the retail method versus using a cost method, and (d) the accounting theory underlying net markdowns and net markups. A relatively straightforward case.

Case 9-5 (Time 15-25 minutes)

Purpose—the student discusses which costs are inventoriable, the theoretical arguments for the lower of cost or market rule, and the amount that should be used to value inventories when replacement cost is below the net realizable value less a normal profit margin. The treatment of beginning inventories and net markdowns when using the conventional retail inventory method must be explained.

Case 9-6 (Time 10-15 minutes)

Purpose—to provide the student with a case that allows examination of ethical issues related to the recording of purchase commitments.

***Case 9-7** (Time 10-15 minutes)

Purpose—to provide the student with a number of items that might be encountered when a conventional retail or LIFO retail problem develops. The student must determine whether items, such as markdowns, markdown cancellations, sales discounts, etc. should be considered in computing the cost-to-retail percentage.

SOLUTIONS TO CASES

CASE 9-1

- (a) The purpose of using the lower of cost or market method is to reflect the decline of inventory value below its original cost. A departure from cost is justified on the basis that a loss of utility should be reported as a charge against the revenues in the period in which it occurs.
- (b) The term “market” in the phrase “the lower of cost or market” generally means the cost to replace the item by purchase or reproduction. Market is limited, however, to an amount that should not exceed the net realizable value (the “ceiling”) (that is, the estimated selling price in the ordinary course of business less reasonably predictable costs of completion and disposal) and should not be less than net realizable value reduced by an allowance for an approximately normal profit margin (the “floor”). The “ceiling” covers obsolete, damaged, or shopworn material and prevents serious overstatement of inventory. The “floor,” on the other hand, deters serious understatement of inventory.
- (c) The lower of cost or market method may be applied either directly to each inventory item, to a category, or to the total inventory. The application of the rule to the inventory total, or to the total components of each category, ordinarily results in an amount that more closely approaches cost than it would if the rule were applied to each individual item. Under the first two methods, increases in market prices offset, to some extent, the decreases in market prices. The most common practice is, however, to price the inventory on an item-by-item basis. Companies favor the individual item approach because tax rules require that an individual item basis be used unless it involves practical difficulties. In addition, the individual item approach gives the most conservative valuation for balance sheet purposes.
- (d) Conceptually, the lower of cost or market method has some deficiencies. First, decreases in the value of the asset and the charge to expense are recognized in the period in which loss in utility occurs—not in the period of sale. On the other hand, increases in the value of the asset are recognized only at the point of sale. This situation is inconsistent and can lead to distortions in the presentation of income data.

Second, there is difficulty in defining “market” value. Basically, three different types of valuation can be used: replacement cost, net realizable value, and net realizable value less a normal markup. A reduction in the replacement cost of an item does not necessarily indicate a corresponding reduction in the utility (price) of the item. To recognize a loss in one period may misstate the period’s income and also that of future periods because when the merchandise is sold subsequently, the full price for the item is received.

Net realizable value reflects the future service potential of the asset and, for that reason, it is conceptually sound. But net realizable value cannot often be measured with any certainty. Therefore, we revert to replacement cost because net realizable value less a normal markup is even more uncertain than net realizable value.

From the standpoint of accounting theory there is little to justify the lower of cost or market rule. Although conservative from the balance sheet point of view, it permits the income statement to show a larger net income in future periods than would be justified if the inventory were carried forward at cost. The rule is applied only in those cases where strong evidence indicates that market declines in inventory prices have occurred that will result in losses when such inventories are disposed of.

CASE 9-2

- (a) The accountant's ethical responsibility is to provide fair and complete financial information. In this case, the direct method distorts the cost of goods sold and hides the decline in market value.
- (b) If Brucki's direct method is used, management may have difficulty in calculations that involve the cost of goods sold. For example, these calculations are useful in establishing profit margins and determining selling prices; but from the investors' and stockholders' viewpoint, it is not good policy to hide declines in market value.
- (c) Maher should use the allowance method to disclose the decline in market value and avoid distorting cost of goods sold. However, she faces an ethical dilemma if Brucki will not accept the method Maher wants to use. She should consider various alternatives including the extremes of simply accepting her boss's decision to quitting if Brucki will not change his mind. Maher should assess the consequences of each possible alternative and weigh them carefully before she decides what to do.

CASE 9-3

- (a)
 1. Horne's inventory should be reported at net realizable value. According to the lower of cost or market rule, market is defined as replacement cost. However, market cannot exceed net realizable value. In this instance, net realizable value is below original cost.
 2. The lower of cost or market rule is used to report the inventory in the balance sheet at its future utility value. It also recognizes a decline in the utility of inventory in the income statement in the period in which the decline occurs.
- (b) Generally, ending inventory would have been higher and cost of goods sold would have been lower had Horne used the LIFO inventory method in a period of declining prices. Inventory quantities increased and LIFO associates the oldest purchase prices with inventory. However, in this instance, there would have been no effect on ending inventory or cost of goods sold had Horne used the LIFO inventory method because Horne's inventory would have been reported at net realizable value according to the lower of cost or market rule. Net realizable value of the inventory is less than either its average cost or LIFO cost.

CASE 9-4

- (a) The retail inventory method can be employed to estimate retail, wholesale, and manufacturing finished goods inventories.

The valuation of inventory under this method is arrived at by reducing the ending inventory at retail to an estimate of the lower of cost or market. The retail value of ending inventory can be computed by (1) taking a physical inventory, or by (2) subtracting net sales and net markdowns from the total retail value of merchandise available for sale (i.e., the sum of beginning inventory at retail, net purchases at retail, and net markups). The reduction of ending inventory at retail to an estimate of the lower of cost or market is accomplished by applying to it an estimated cost ratio arrived at by dividing the retail value of merchandise available for sale as computed in (2) above into the cost of merchandise available for sale (i.e., the sum of beginning inventory, net purchases, and other inventoriable costs).

CASE 9-4 (Continued)

- (b) Since the retail method is based on an estimated cost ratio involving total merchandise available during the period, its validity depends on the underlying assumption that the merchandise in ending inventory is a representative mixture of all merchandise handled. If this condition does not exist, the cost ratio may not be appropriate for the merchandise in ending inventory and can result in significant error.

Where there are a number of inventory subdivisions for which differing rates of markup are maintained, there is no assurance that the ending inventory mix will be representative of the total merchandise handled during the period. In such cases accurate results can be obtained by sub-classifications by rate of markup.

Seasonal variations in the rate of markup will nullify the ending inventory "representative mix" assumption. Since the estimated cost ratio is based on total merchandise handled during the period, the same rate of markup should prevail throughout the period. Because of seasonal variations it may be necessary to use data for the last six months, quarter, or month to compute a cost ratio that is appropriate for ending inventory.

Material quantities of special sale merchandise handled during the period may also bias the result of this method because merchandise data included in arriving at the estimated cost ratio may not be proportionately represented in ending inventory. This condition may be avoided by accumulating special sale merchandise data in separate accounts.

Distortion of the ending inventory approximation under this method is often caused by an inadequate system of inventory control. Adequate accounting controls are necessary for the accurate accumulation of the data needed to arrive at a valid cost ratio. Physical controls are equally important because, for interim purposes, this method is usually applied without taking a physical inventory.

- (c) The advantages of using the retail method as compared to cost methods include the following:
1. Approximate inventory values can be determined without maintaining perpetual inventory records.
 2. The preparation of interim financial statements is facilitated.
 3. Losses due to fire or other casualty are readily determined.
 4. Clerical work in pricing the physical inventory is reduced.
 5. The cost of merchandise can be kept confidential in intracompany transfers.
- (d) The treatments to be accorded net markups and net markdowns must be considered in light of their effects on the estimated cost ratio. If both net markups and net markdowns are used in arriving at the cost ratio, ending inventory will be converted to an estimated average cost figure. Excluding net markdowns will result in the inventory being stated at an estimate of the lower of cost or market.

The lower cost ratio arrived at by excluding net markdowns permits the pricing of inventory at an amount that reflects its current utility. The assumption is that net markdowns represent a loss of utility that should be recognized in the period of markdown. Ending inventory is therefore valued on the basis of its revenue-producing potential and may be expected to produce a normal gross profit if sold at prevailing retail prices in the next period.

CASE 9-5

- (a) 1. E.A. Poe's inventoriable cost should include all costs incurred to get the lighting fixtures ready for sale to the customer. It includes not only the purchase price of the fixtures but also the other associated costs incurred on the fixtures up to the time they are ready for sale to the customer, for example, freight-in.
2. No, administrative costs are assumed to expire with the passage of time and not to attach to the product. Furthermore, administrative costs do not relate directly to inventories, but are incurred for the benefit of all functions of the business.
- (b) 1. The lower of cost or market rule is used for valuing inventories because of the concept of balance sheet conservatism and because the decline in the utility of the inventories below their cost should be recognized as a loss in the current period.
2. The net realizable value less a normal profit margin should be used to value the inventories because market should not be less than net realizable value less a normal profit margin. To carry the inventories at net realizable value less a normal profit margin provides a means of measuring residual usefulness of an inventory expenditure.
- (c) Poe's beginning inventories at cost and at retail would be included in the calculation of the cost ratio.

Net markdowns would be excluded from the calculation of the cost ratio. This procedure reduces the cost ratio because there is a larger denominator for the cost ratio calculation. Thus, the concept of balance sheet conservatism is being followed and a lower of cost or market valuation is approximated.

CASE 9-6

- (a) Accounting standards require that when a contracted price is in excess of market, as it is in this case (market is \$5,000,000 and the contract price is \$6,000,000), and it is expected that losses will occur when the purchase is effected, losses should be recognized in the period during which such declines in market prices take place. It would be unethical to ignore recognition of the loss now if a loss is expected to occur when the purchase is effected.
- (b) If the loss is material, new and continuing shareholders are harmed by nonrecognition of the loss. Walker's position as an accounting professional also is affected if he accepts a financial report he knows violates GAAP.
- (c) If the preponderance of the evidence points to a loss when the purchase is effected, the controller should recognize the amount of the loss in the period in which the price decline occurs. In this case the loss is measured at \$1,000,000 and recorded as follows:

Unrealized Holding Loss—Income	
(Purchase Commitments).....	1,000,000
Estimated Liability on Purchases	
Commitments	1,000,000

Walker should insist on statement preparation in accordance with GAAP. If Hands will not accept Walker's position, Walker will have to consider alternative courses of action such as contacting higher-ups at Vineland and assess the consequences of each course of action.

*CASE 9-7

(a) Conventional retail

3. Cost of items transferred in from Other departments.
4. Retail value of items transferred in From other departments.
6. Purchase discounts.
8. Cost of beginning inventory.
9. Retail value of beginning inventory.
10. Cost of purchases.
11. Retail value of purchases.
12. Markups.
13. Markup cancellations.

(b) LIFO retail

1. Markdowns.
2. Markdown cancellations.
3. Cost of items transferred in from other departments.
4. Retail value of items transferred in from other departments.
6. Purchase discounts.
10. Cost of purchases.
11. Retail value of purchases.
12. Markups.
13. Markup cancellations.

(Note to instructor: If the goods broken or stolen are abnormal shrinkage, they are deducted from both the cost and retail columns.)

FINANCIAL REPORTING PROBLEM

- (a) 3M reports that “inventories are stated at the lower of cost or market. The cost of most inventories in the U.S. is determined by the “first-in, first-out” (FIFO) method.
- (b) Inventories are reported on the balance sheet simply as “inventories” with no additional descriptions or explanations. In the notes, 3M’s inventories are classified and described as (1) Raw materials (per note 6), (2) Work in process, and (3) Finished goods.

$$(c) \text{ Inventory turnover} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}} = \frac{\$8,749}{\frac{\$2,091 + \$2,312}{2}}$$

= 3.97 or approximately 91 days to turn its inventory.

Its gross profit percentages for 2001 and 2000 are as follows:

	2001	2000
Net revenues	\$16,079	\$16,724
Cost of goods sold	8,749	8,787
Gross profit	\$ 7,330	\$ 7,937
Gross profit percentage	45.6%	47.5%

3M had a slight decline in its Gross profit and Gross profit percentage. Sales in 2001 showed a slight decline, probably due to a slowing economy, and other market forces.

FINANCIAL STATEMENT ANALYSIS CASE 1

- (a) Although no absolute rules can be stated, preferability for LIFO can ordinarily be established if (1) selling prices and revenues have been increasing, whereas costs have lagged, to such a degree that an unrealistic earnings picture is presented, and (2) LIFO has been traditional, such as department stores and industries where a fairly constant “base stock” is present such as refining, chemicals, and glass. Conversely, LIFO would probably not be appropriate: (1) where prices tend to lag behind costs; (2) in situations where specific identification is traditional, such as in the sale of automobiles, farm equipment, art, and antique jewelry; and (3) where unit costs tend to decrease as production increases, thereby nullifying the tax benefit that LIFO might provide. Note that where inventory turnover is high, the difference between inventory methods is usually negligible.

In this case, it is impossible to determine what conditions exist, but it seems probable that the characteristics of certain parts of the inventory make LIFO desirable, whereas other parts of the inventory provide higher benefits if FIFO is used.

- (b) It may provide this information (although it is not required to do so) because it believes that this information tells the reader that both its income and inventory would be higher if FIFO had been used.
- (c) The LIFO liquidation reduces operating costs because low price goods are matched against current revenue. As a result, operating costs are lower than normal because higher operating costs would have normally been deducted from revenues.
- (d) It would probably have reported more income if it had been on a FIFO basis. For example, its inventory as of December 31, 2003 was stated at \$1,635,040. Its inventory under FIFO would have been \$564,960 higher (2003) if FIFO had been used.

On the other hand, the LIFO liquidation would not have occurred in 2002 or previous years because FIFO would have been used. Thus, the 2002 reduction in operating costs of \$24,000 due to the LIFO liquidation would not have occurred.

FINANCIAL STATEMENT ANALYSIS CASE 2

(a) There are probably no finished goods because gold is a highly liquid commodity, and so it can be sold as soon as processing is complete. Ore in stockpiles is a noncurrent asset probably because processing takes more than one year, so the ore in stockpiles is less likely to remain in the stockpiles for a long time.

(b) Sales are recorded as follows:

Accounts Receivable or Cash
Sales Revenue

AND

Cost of Goods Sold
Gold in Process Inventory

(c)	Balance Sheet		Income Statement	
	Inventory	Overstated	Cost of goods sold	Understated
	Retained earnings	Overstated	Net income	Overstated
	Accounts payable	No effect		
	Working capital	Overstated		
	Current ratio	Overstated		

COMPARATIVE ANALYSIS CASE

- (a) Coca-Cola reported inventories of \$1,055 million, which represents 4.7% of total assets. PepsiCo reported inventories of \$1,310 million, which represents 6% of its total assets.
- (b) Coca-Cola determines the cost of its inventories on the basis of average cost or first-in, first-out (FIFO) methods; its inventories are valued at the lower of cost or market. PepsiCo determines the cost of its inventories on the basis of average cost, first-in, first-out (FIFO), and last-in, first-out (LIFO) methods. PepsiCo reported that the cost of 20% of its 2001 inventories was computed using the LIFO method. PepsiCo's "inventories are valued at the lower of cost (computed on the average, FIFO or LIFO method) or net realizable value."
- (c) Coca-Cola classifies and describes its inventories as primarily raw materials and supplies. PepsiCo classifies and describes its inventories as (1) raw materials, (2) work-in-process and (3) finished goods.
- (d) Inventory turnover ratios and days to sell inventory for 2001:

Coca-Cola	PepsiCo
$\frac{\$6,044}{\$1,055 + \$1,066} = 5.7 \text{ times}$	$\frac{\$10,754}{\$1,310 + \$1,192} = 8.6 \text{ times}$
$\frac{2}{365 \div 5.7} = 64 \text{ days}$	$\frac{2}{365 \div 8.6} = 42 \text{ days}$

A substantial difference between Coca-Cola and PepsiCo exists regarding the inventory turnover and related days to sell inventory. The primary reason is that PepsiCo's cost of goods sold and related inventories involves food operations as well as beverage cost. This situation is not true for Coca-Cola. Food will have a much higher turnover ratio because food must be turned over quickly or else spoilage will become a major problem.

RESEARCH CASES

CASE 1

Answers will depend on companies selected.

CASE 2

- (a) CompUSA estimated a retail value of \$7.6 million, while one bidder predicted a selling price less than \$1 million.
- (b) The computers experienced an excessively high failure rate, leading to speculation that the units would sell for the value of the parts.
- (c) The sealed-bid auction had two major rules: (1) all of the units were to be sold together for cash, and (2) the buyer had to haul the units away.
- (d) Depends on students' opinions.

PROFESSIONAL SIMULATION

Resources

	B	C	D	E	F	G	H	I	J	K	L
1											
2											
3											
4											
5											
6											
7											
8	Number of Units	Cost to Replace	Floor	Ceiling	Designated Market	Original Cost	LCM	Total Difference			
9	1,000	\$14.00	\$15.00	\$24.00	\$15.00	\$17.50	\$15.00	(\$2,500.00)			
10	1,000	78.00	44.00	74.00	74.00	48.00	48.00	0.00			
11	1,000	42.00	41.00	65.00	42.00	35.00	35.00	0.00			
12	1,000	45.00	46.00	74.50	46.00	47.50	46.00	-1,500.00			
13							Total	(\$4,000.00)			
14								=====			
15	Note :										
16	Floor = (70% X expected selling price) – estimated cost to dispose.										
17	Ceiling = expected selling price – estimated cost to dispose.										
18											
19											

Journal Entry

Cost of Goods Sold	4,000	
Inventory		4,000

Note: This entry assumes use of direct method.

Explanation

Expected selling prices are important in the application of the lower of cost or market rule because they are used in measuring losses of utility in inventory that otherwise would not be recognized until the period during which the inventory is sold. Declines in replacement cost generally are assumed to foreshadow declines in selling prices expected in the next period and hence in the revenue expected upon the sale of the inventory during the next period. However, the use of current replacement cost as “market” is limited to those situations in which it falls between (1) net realizable value (the “ceiling”) and (2) net realizable value less a “normal” profit (the “floor”), both of which depend upon the selling prices expected in the next period for their computation.

CHAPTER 10

Acquisition and Disposition of Property, Plant, and Equipment

ASSIGNMENT CLASSIFICATION TABLE

Topics	Questions	Brief			
		Exercises	Exercises	Problems	Cases
1. Valuation and classification of land, buildings, and equipment.	1, 2, 3, 4, 6, 7, 12, 13, 18	1	1, 2, 3, 4, 5, 13	1, 2, 3, 5	1, 6, 7
2. Self-constructed assets, capitalization of overhead.	5, 8, 20, 21		4, 6, 12		2
3. Capitalization of interest.	7, 9, 10, 13, 18	2, 3, 4	4, 5, 7, 8, 9, 10, 16	1, 5, 6, 7	3, 4
4. Exchanges of assets: a. Similar assets with cash payments.	12, 16, 17	10, 11	11, 16, 17, 18, 19, 20	4, 8, 9, 10	5
b. Dissimilar assets.	12, 16	8, 9	3, 17	9, 10, 11	5
5. Lump-sum purchases, issuance of stock, deferred payment contracts.	12, 14, 15	6, 7	3, 6, 11, 12, 13, 14, 15, 16	1, 11	
6. Costs subsequent to acquisition.	16, 18, 19, 22	12	21, 22, 23		1
7. Alternative valuations.	23	5		3	
8. Disposition of assets.	24	13, 14	24, 25	4	1

ASSIGNMENT CHARACTERISTICS TABLE

Item	Description	Level of Difficulty	Time (minutes)
E10-1	Acquisition costs of realty.	Moderate	15-20
E10-2	Acquisition costs of realty.	Simple	10-15
E10-3	Acquisition costs of trucks.	Simple	10-15
E10-4	Purchase and self-constructed cost of assets.	Moderate	20-25
E10-5	Treatment of various costs.	Moderate	30-40
E10-6	Correction of improper cost entries.	Moderate	15-20
E10-7	Capitalization of interest.	Moderate	20-25
E10-8	Capitalization of interest.	Moderate	20-25
E10-9	Capitalization of interest.	Moderate	20-25
E10-10	Capitalization of interest.	Moderate	20-25
E10-11	Entries for equipment acquisitions.	Simple	10-15
E10-12	Entries for asset acquisition, including self-construction.	Simple	15-20
E10-13	Entries for acquisition of assets.	Simple	20-25
E10-14	Purchase of equipment with noninterest-bearing debt.	Moderate	15-20
E10-15	Purchase of computer with noninterest-bearing debt.	Moderate	15-20
E10-16	Acquisitions, exchanges.	Moderate	25-35
E10-17	Nonmonetary exchange with boot.	Simple	10-15
E10-18	Nonmonetary exchange with boot.	Moderate	20-25
E10-19	Nonmonetary exchange with boot.	Moderate	15-20
E10-20	Nonmonetary exchange with boot.	Moderate	15-20
E10-21	Analysis of subsequent expenditures.	Moderate	20-25
E10-22	Analysis of subsequent expenditures.	Simple	15-20
E10-23	Analysis of subsequent expenditures.	Simple	20-25
E10-24	Entries for disposition of assets.	Moderate	20-25
E10-25	Disposition of assets.	Simple	15-20
P10-1	Classification of acquisition and other asset costs.	Moderate	35-40
P10-2	Classification of acquisition costs.	Moderate	40-55
P10-3	Classification of land and building costs.	Moderate	35-45
P10-4	Dispositions, including condemnation, demolition, and trade-in.	Moderate	35-40
P10-5	Classification of costs and interest capitalization.	Moderate	20-30
P10-6	Acquisition cost, capitalization of interest.	Moderate	25-35
P10-7	Capitalization of interest, disclosures.	Moderate	20-30
P10-8	Nonmonetary exchanges with boot.	Moderate	35-45
P10-9	Nonmonetary exchanges with boot.	Moderate	30-40
P10-10	Nonmonetary exchanges with boot.	Moderate	30-40
P10-11	Purchases by deferred payment, lump-sum, and nonmonetary exchange.	Moderate	35-45
C10-1	Acquisition, improvements, and sale of realty.	Moderate	20-25
C10-2	Accounting for self-constructed assets.	Moderate	20-25

ASSIGNMENT CHARACTERISTICS TABLE (Continued)

Item	Description	Level of Difficulty	Time (minutes)
C10-3	Capitalization of interest.	Simple	20-25
C10-4	Capitalization of interest.	Moderate	30-40
C10-5	Exchanges of similar, dissimilar assets.	Moderate	30-40
C10-6	Costs of acquisition.	Simple	20-25
C10-7	Allocation of acquisition costs—ethics.	Moderate	20-25

ANSWERS TO QUESTIONS

1. The major characteristics of plant assets are (1) that they are acquired for use in operations and not for resale, (2) that they are long-term in nature and usually subject to depreciation, and (3) that they have physical substance.
2. The company should report the asset at its historical cost of \$420,000, not its current value. The main reasons for this position are (1) at the date of acquisition, cost reflects fair value; (2) historical cost involves actual, not hypothetical transactions, and as a result is extremely reliable; and (3) gains and losses should not be anticipated but should be recognized when the asset is sold.
3.
 - (a) The acquisition costs of land may include the purchase or contract price, the broker's commission, title search and recording fees, assumed taxes or other liabilities, and surveying, demolition (less salvage), and landscaping costs.
 - (b) Machinery and equipment costs may properly include freight and drayage (handling), taxes on purchase, insurance in transit, installation, and expenses of testing and breaking-in.
 - (c) If a building is purchased, all repair charges, alterations, and improvements necessary to ready the building for its intended use should be included as a part of the acquisition cost. Building costs in addition to the amount paid to a contractor may include excavation, permits and licenses, architect's fees, interest accrued on funds obtained for construction purposes (during construction period only) called avoidable interest, insurance premiums applicable to the construction period, temporary buildings and structures, and property taxes levied on the building during the construction period.
4.
 - (a) Land.
 - (b) Land.
 - (c) Land.
 - (d) Machinery. The only controversy centers on whether fixed overhead should be allocated as a cost to the machinery.
 - (e) Land Improvements, may be depreciated.
 - (f) Building.
 - (g) Building, provided the benefits in terms of information justify the additional cost involved in providing the information (**FASB Statement No. 34**).
 - (h) Land.
 - (i) Land.
5.
 - (a) The position that no fixed overhead should be capitalized assumes that the construction of plant (fixed) assets will be timed so as not to interfere with normal operations. If this were not the case, the savings anticipated by constructing instead of purchasing plant assets would be nullified by reduced profits on the product that could have been manufactured and sold. Thus, construction of plant assets during periods of low activity will have a minimal effect on the total amount of overhead costs. To capitalize a portion of fixed overhead as an element of the cost of constructed assets would, under these circumstances, reduce the amount assignable to operations and therefore overstate net income in the construction period and understate net income in subsequent periods because of increased depreciation charges.
 - (b) Capitalizing overhead at the same rate as is charged to normal operations is defended by those who believe that all manufacturing overhead serves a dual purpose during plant asset construction periods. Any attempt to assign construction activities less overhead than the normal rate implies costing favors and results in the misstatement of the cost of both plant assets and finished goods.

Questions Chapter 10 (Continued)

6. (a) and (d) Organization and promotion expenses and commission paid on the sale of capital stock are not a part of the cost of the building. They should be charged to separate accounts.
- (b) Architect's fees for plans actually used in construction of the building should be charged to the building account as part of the cost.
- (c) **FASB Statement No. 34** recommends that avoidable interest or actual interest cost, whichever is lower, be capitalized as part of the cost of acquiring an asset if a significant period of time is required to bring the asset to a condition or location necessary for its intended use. Interest costs are capitalized starting with the first expenditure related to the asset and capitalization would continue until the asset is substantially completed and ready for its intended use. Property taxes during construction should also be charged to the building account.
- (e) As bond discount amortization is a form of interest, that portion applicable to the period of construction may be added to the cost of the building as discussed in (c) above. The remainder should be carried as a reduction of bonds payable and amortized over the life of the bonds.
7. Since the land for the plant site will be used in the operations of the firm, it is classified as property, plant, and equipment. The other tract is being held for speculation. It is classified as an investment.
8. A common accounting justification is that all costs associated with the construction of an asset, including interest, should be capitalized in order that the costs can be matched to the revenues which the new asset will help generate.
9. Assets that do not qualify for interest capitalization are (1) assets that are in use or ready for their intended use, and (2) assets that are not being used in the earnings activities of the firm.
10. The avoidable interest is determined by multiplying (an) interest rate(s) by the weighted-average amount of accumulated expenditures on qualifying assets. For the portion of weighted-average accumulated expenditures which is less than or equal to any amounts borrowed specifically to finance construction of the assets, the capitalization rate is the specific interest rate incurred. For the portion of weighted-average accumulated expenditures which is greater than specific debt incurred, the interest rate is a weighted average of all other interest rates incurred.

The amount of interest to be capitalized is the avoidable interest, or the actual interest incurred, whichever is lower.

As indicated in the chapter, an alternative to the specific rate is to use an average borrowing rate.

11. The total interest cost incurred during the period should be disclosed, indicating the portion capitalized and the portion charged to expense.

Interest revenue from temporarily invested excess funds should not be offset against interest cost when determining the amount of interest to be capitalized. The interest revenue would be reported in the same manner customarily used to report any other interest revenue.

12. (a) **Assets acquired by issuance of capital stock**—when property is acquired by issuance of securities such as common stock, the cost of the property is not measured by par or stated value of such stock. If the stock is actively traded on the market, then the market value of the stock is a fair indication of the cost of the property because the market value of the stock is a good measure of the current cash equivalent price. If the market value of the common stock is not determinable, then the market value of the property should be established and used as the basis for recording the asset and issuance of common stock.

Questions Chapter 10 (Continued)

- (b) **Assets acquired by gift or donation**—when assets are acquired in this manner a strict cost concept would dictate that the valuation of the asset be zero. However, in this situation, accountants record the asset at its fair market value. The credit would be made to Contribution Revenue or “donated capital.” Contributions received should be credited to revenue unless the contribution is from a governmental unit. Even in that case, we believe that the credit should be to contribution revenue.
- (c) **Cash discount**—when assets are purchased subject to a cash discount, the question of how the discount should be handled occurs. If the discount is taken, it should be considered a reduction in the asset cost. Different viewpoints exist, however, if the discount is not taken. One approach is that the discount must be considered a reduction in the cost of the asset. The rationale for this approach is that the terms of these discounts are so attractive that failure to take the discount must be considered a loss because management is inefficient. The other view is that failure to take the discount should not be considered a loss, because the terms may be unfavorable or the company might not be prudent to take the discount. Presently both methods are employed in practice. The former approach is conceptually correct.
- (d) **Deferred payments**—assets should be recorded at the present value of the consideration exchanged between contracting parties at the date of the transaction. In a deferred payment situation, there is an implicit (or explicit) interest cost involved, and the accountant should be careful not to include this amount in the cost of the asset.
- (e) **Lump sum or basket purchase**—sometimes a group of assets are acquired for a single lump sum. When a situation such as this exists, the accountant must allocate the total cost among the various assets on the basis of their relative fair market value.
- (f) **Trade or exchange of assets**—when one asset is exchanged for another asset, the accountant is faced with several issues in determining the value of the new asset. The basic principle involved is to record the new asset at the fair market value of the new asset or the fair market value of what is given up to acquire the new asset, whichever is more clearly evident. However, the accountant must also be concerned with whether the exchange results in the culmination of an earnings process and whether monetary consideration is involved in the transaction. The earnings process issue rests on whether the assets involved are similar or dissimilar, and monetary consideration may affect the amount of gain recognized on the exchange under consideration.
13. The cost of such assets includes the purchase price, freight and handling charges incurred, insurance on the equipment while in transit, cost of special foundations if required, assembly and installation costs, and costs of conducting trial runs. Costs thus include all expenditures incurred in acquiring the equipment and preparing it for use. When plant assets are purchased subject to cash discounts for prompt payment, the question of how the discount should be handled arises. The appropriate view is that the discount, whether taken or not, is considered a reduction in the cost of the asset. The rationale for this approach is that the real cost of the asset is the cash or cash equivalent price of the asset. Similarly, assets purchased on long-term payment plans should be accounted for at the present value of the consideration exchanged between the contracting parties at the date of the transaction.
14.
$$\frac{\text{Fair market value of land}}{\text{Fair market value of building and land}} \times \text{Cost} = \text{Cost allocated to land}$$
$$\frac{\$500,000}{\$2,500,000} \times \$2,200,000 = \$440,000 \quad (\text{Bldg.} = \frac{\$2,000,000}{\$2,500,000} \times \$2,200,000 = \$1,760,000)$$

Cost allocated to the land is therefore \$440,000.

Cost allocated to building is \$1,760,000 (\$2,200,000 – \$440,000).

Questions Chapter 10 (Continued)

15. $\$10,000 + 4,058 = \$14,058$
16. Ordinarily accounting for the exchange of nonmonetary assets should be based on the fair value of the asset given up or the fair value of the asset received, whichever is clearly more evident. Thus any gains and losses on the exchange should be recognized immediately. If the fair value of either asset is not reasonably determinable, the book value of the asset given up is usually used as the basis for recording the nonmonetary exchange. This approach is always employed when the assets are dissimilar in nature. The general rule is modified when exchanges of similar nonmonetary assets occur. If a company trades similar productive assets, the enterprise is not considered to have completed the earnings process and therefore a gain should not be recognized. However, a loss should be recognized immediately. In certain situations, gains on exchange of similar nonmonetary assets may be recorded when monetary consideration is received. When monetary consideration is received, it is assumed that a portion of the earnings process is completed, and therefore, a partial gain is recognized.
17. In accordance with **APB Opinion No. 29** which requires losses to be recognized immediately, the entry should be:

Heavy Duty Truck (new)	39,000	
Accumulated Depreciation on Heavy Duty Truck	9,800*	
Loss on Exchange of Heavy Duty Truck	7,200**	
Heavy Duty Truck (old)		30,000
Cash		26,000

*[(\\$30,000 – \\$6,000) X 49 months/120 months = \\$9,800]

** (Book value \\$20,200 – \\$13,000 trade-in = \\$7,200 loss)

18. Ordinarily such expenditures include (1) the recurring costs of servicing necessary to keep property in good operating condition, (2) cost of renewing structural parts of major plant units, and (3) costs of major overhauling operations which may or may not extend the life beyond original expectation.

The first class of expenditures represents the day-to-day service and in general in chargeable to operations as incurred. These expenditures should not be to the asset accounts.

The second class of expenditures may or may not affect the recorded cost of property. If the asset is rigidly defined as a distinct unit, the renewal of parts does not usually disturb the asset accounts; however, these costs may be capitalized and apportioned over several fiscal periods on some equitable basis. If the property is conceived in terms of structural elements subject to separate replacement, such expenditures should be charged to the plant asset accounts.

The third class of expenditures, major overhauls, is usually entered through the asset accounts because replacement of important structural elements is usually involved. Other than maintenance charges mentioned above are those expenditures which add some physical aspect not a part of such asset at the time of its original acquisition. These expenditures may be capitalized in the asset account.

An expenditure which extends the life but not the usefulness of the asset is often charged to the accumulated depreciation account. A more appropriate treatment requires retiring from the asset and accumulated depreciation accounts the appropriate amounts (original cost from the asset account) and to capitalize in the asset account the new cost. Often it is difficult to determine the original cost of the item being replaced. For this reason the replacement or renewal is charged to the accumulated depreciation account.

19. (a) **Additions.** Additions represent entirely new units or extensions and enlargements of old units. Expenditures for additions are capitalized by charging either old or new asset accounts depending on the nature of the addition.

Questions Chapter 10 (Continued)

- (b) **Major Repairs.** Expenditures to replace parts or otherwise to restore assets to their previously efficient operating condition are regarded as repairs. To be considered a major repair, several periods must benefit from the expenditure. The cost should be handled as an addition, improvement or replacement depending on the type of major repair made.
- (c) **Improvements.** An improvement does not add to existing plant. Expenditures for betterments represent increases in the quality of existing plant by rearrangements in plant layout or the substitution of improved components for old components so that the facilities have increased productivity, greater capacity, or longer life. The cost of improvement is accounted for by charges to the appropriate property accounts and the elimination of the cost and accumulated depreciation associated with the replaced components, if any.

Replacements. Replacements involve an “in kind” substitution of a new asset or part for an old asset or part. Accounting for major replacements requires entries to retire the old asset or part and to record the cost of the new asset or part. Minor replacements are treated as period costs.

20. The cost of installing the machinery should be capitalized, but the extra month’s wages paid to the dismissed employees should not, as this payment did not add any value to the machinery.

The extra wages should be charged off immediately as an expense; they could be shown as a separate item in the income statement for disclosure purposes.

21. (a) Overhead of a business which builds its own equipment. Some accountants have maintained that the equipment account should be charged only with the additional overhead caused by such construction. However, a more realistic figure for cost of equipment results if the plant asset account is charged for overhead applied on the same basis and at the same rate as used for production (see Question 5).
- (b) Cost of constructing new models of machinery. These costs should ordinarily be considered proper elements of the cost of plant assets. The cost of developing new models necessarily will run higher than those which later are constructed, and that is to be expected.
 - (c) Cash discounts on purchases of equipment. Some accountants treat all cash discounts as financial or other revenue, regardless of whether they arise from the payment of invoices for merchandise or plant assets. Others take the position that only the net amount paid for plant assets should be capitalized on the basis that the discount represents a reduction of price and is not income. The latter position seems more logical in light of the fact that plant assets are purchased for use and not for sale and that they are written off to expense over a long period of time.
 - (d) Interest paid during construction of a building. **FASB Statement No. 34** recommends that avoidable or actual interest cost, whichever is lower, be capitalized as part of the cost of acquiring an asset if a significant period of time is required to bring the asset to a condition and location necessary for its intended use.
 - (e) Cost of a safety device installed on a machine. This is an addition to the machine and should be capitalized in the machinery account if material.
 - (f) Freight on equipment returned before installation, for replacement by other equipment of greater capacity. If ordering the first equipment was an error, whether due to judgment or otherwise, the freight should be regarded as a loss. However, if information became available after the order was placed which indicated purchase of the new equipment was more advantageous, the cost of the return freight may be viewed as a necessary cost of the new equipment.

Questions Chapter 10 (Continued)

- (g) Cost of moving machinery to a new location. Normally, only the cost of one installation should be capitalized for any piece of equipment. Thus the original installation and any accumulated depreciation relating thereto should be removed from the accounts and the new installation costs (i.e., cost of moving) should be capitalized. In cases where this is not possible and the cost of moving is substantial, it is sometimes charged to a special asset account and amortized over the period during which it makes a contribution to operations.
 - (h) Cost of plywood partitions erected in the remodeling of the office. This is a part of the remodeling cost and may be capitalized if the remodeling itself is of such a nature that it is an addition to the building and not merely a replacement or repair.
 - (i) Replastering of a section of the building. This seems more in the nature of a repair than anything else and as such should be treated as expense.
 - (j) Cost of a new motor for one of the trucks. This probably extends the useful life of the truck. As such it may be viewed as an extraordinary repair and charged against the accumulated depreciation on the truck. The remaining service life of the truck should be estimated and depreciation adjusted to write off the new book value, less salvage, over the remaining useful life. A more appropriate treatment is to remove the cost of the old motor and related depreciation and add the cost of the new motor if possible.
22. The authors believe it is difficult to justify an Allowance for Repairs account under any circumstances, except possibly for interim statements. It is difficult to justify the "Allowance for Repairs" as a liability under any conditions because no past transaction has occurred which will result in future payments to satisfy an existing obligation. Furthermore, as a liability we might ask the question—whom do you owe? Placement in the stockholders' equity section is also illogical because no addition to the stockholders' investment has taken place. The only reasonable method of presentation appears to be as a contra account to the asset involved. Even this approach is highly questionable.
23. This approach is not correct since at the very minimum the investor should be aware that certain assets are used in the business which are not reflected in the main body of the financial statements. Either the company should keep these assets on the balance sheet or they should be recorded at salvage value and the resulting gain recognized. In either case, there should be a clear indication that these assets are fully depreciated, but are still being used in the business.
24. Gains or losses on plant asset retirements should be shown in the income statement along with other items that arise from customary business activities.

SOLUTIONS TO BRIEF EXERCISES

BRIEF EXERCISE 10-1

$$\$27,000 + \$1,400 + \$12,200 = \underline{\underline{\$40,600}}$$

BRIEF EXERCISE 10-2

Expenditures		Capitalization Period	Weighted-Average Accumulated Expenditures
Date	Amount	Period	Accumulated Expenditures
3/1	\$1,500,000	10/12	\$1,250,000
6/1	1,200,000	7/12	<u>700,000</u>
			<u><u>\$1,950,000</u></u>

BRIEF EXERCISE 10-3

	Principal	Interest
13%, 5-year note	\$2,000,000	\$260,000
15%, 4-year note	<u>3,500,000</u>	<u>525,000</u>
	<u><u>\$5,500,000</u></u>	<u><u>\$785,000</u></u>

$$\text{Weighted-average interest rate} = \frac{\$785,000}{\$5,500,000} = \underline{\underline{14.27\%}}$$

BRIEF EXERCISE 10-4

Weighted-Average Accumulated Expenditures	X	Interest Rate	=	Avoidable Interest
\$1,000,000		12%		\$120,000
<u>950,000</u>		14.27%		<u>135,565</u>
<u><u>\$1,950,000</u></u>				<u><u>\$255,565</u></u>

BRIEF EXERCISE 10-5

Truck (\$80,000 X .63552)	50,842	
Discount on Notes Payable	29,158	
Notes Payable.....		80,000

BRIEF EXERCISE 10-6

	<u>Fair Value</u>	<u>% of Total</u>	<u>Cost</u>	<u>Recorded Amount</u>
Land	\$ 60,000	60/360	\$306,000	\$ 51,000
Building	220,000	220/360	\$306,000	187,000
Equipment	<u>80,000</u>	80/360	\$306,000	<u>68,000</u>
	<u>\$360,000</u>			<u>\$306,000</u>

BRIEF EXERCISE 10-7

Land (2,000 X \$41)	82,000	
Common Stock (2,000 X \$10		20,000
Paid-in Capital in Excess of Par.....		62,000

BRIEF EXERCISE 10-8

Computer	3,700	
Accumulated Depreciation	18,000	
Truck.....		20,000
Cash.....		1,000
Gain on Disposal of Truck.....		700

BRIEF EXERCISE 10-9

Office Equipment.....	5,000	
Accumulated Depreciation	3,000	
Loss on Disposal of Machine.....	3,000	
Machine.....		9,000
Cash.....		2,000

BRIEF EXERCISE 10-10

Truck.....	35,000	
Loss on Disposal of Truck.....	1,000	
Accumulated Depreciation	27,000	
Truck.....		30,000
Cash.....		33,000

BRIEF EXERCISE 10-11

Truck.....	35,000	
Accumulated Depreciation	17,000	
Loss on Disposal of Truck.....	1,000	
Truck.....		20,000
Cash.....		33,000

BRIEF EXERCISE 10-12

Only cost (b) is expensed when incurred.

BRIEF EXERCISE 10-13

(a)	Depreciation Expense (\$3,000 X 8/12).....	2,000	
	Accumulated Depreciation		2,000
(b)	Cash	10,500	
	Accumulated Depreciation.....	11,000	
	Machinery		20,000
	Gain on Disposal of Machinery		1,500

BRIEF EXERCISE 10-14

(a)	Depreciation Expense (\$3,000 X 8/12).....	2,000	
	Accumulated Depreciation		2,000
(b)	Cash	5,200	
	Loss on Disposal of Machinery	3,800	
	Accumulated Depreciation.....	11,000	
	Machinery		20,000

SOLUTIONS TO EXERCISES

EXERCISE 10-1 (15-20 minutes)

Item	Land	Land Improvements	Building	Other Accounts
(a)				(\$275,000) Notes Payable
(b)			\$275,000	
(c)	\$ 8,000			
(d)	7,000			
(e)			6,000	
(f)			(1,000)	
(g)			22,000	
(h)	250,000			
(i)	9,000			
(j)		\$ 4,000		
(k)	11,000			
(l)	(5,000)			
(m)			13,000	
(n)		19,000		
(o)	14,000			
(p)			3,000	

EXERCISE 10-2 (10-15 minutes)

The allocation of costs would be as follows:

	Land	Building
Land	\$400,000	
Razing Costs	42,000	
Salvage	(6,300)	
Legal Fees	1,850	
Survey		\$ 2,200
Plans		68,000
Title Insurance	1,500	
Liability Insurance		900
Construction		2,740,000
Interest		170,000
	\$439,050	\$2,981,100

EXERCISE 10-3 (10-15 minutes)

1.	Truck #1.....	13,900.00	
	Cash		13,900.00
2.	Truck #2.....	14,727.26*	
	Discount on Notes Payable.....	1,272.74	
	Cash		2,000.00
	Notes Payable		14,000.00
	*PV of \$14,000 @ 10% for 1 year =		
	\$14,000 X .90909 = \$12,727.26		
	\$12,727.26 + \$2,000.00 = \$14,727.26		
3.	Truck #3.....	15,200.00	
	Cost of Goods Sold.....	12,000.00	
	Inventory.....		12,000.00
	Sales.....		15,200.00

[Note to instructor: The selling (retail) price of the computer system appears to be a better gauge of the fair value of the consideration given than is the list price of the truck as a gauge of the fair value of the consideration received (truck). Vehicles are very often sold at a price below the list price.]

4.	Truck #4.....	13,000.00	
	Common Stock.....		10,000.00
	Paid-in Capital in Excess of Par.....		3,000.00
	(1,000 shares X \$13 = \$13,000)		

EXERCISE 10-4 (20-25 minutes)

Purchase

Cash paid for equipment, including sales tax of \$5,000	\$105,000
Freight and insurance while in transit	2,000
Cost of moving equipment into place at factory	3,100
Wage cost for technicians to test equipment	4,000
Special plumbing fixtures required for new equipment	<u>8,000</u>
Total cost	<u>\$122,100</u>

The insurance premium paid during the first year of operation of this equipment should be reported as insurance expense, and not be capitalized. Repair cost incurred in the first year of operations related to this equipment should be reported as repair and maintenance expense, and not be capitalized. Both these costs relate to periods subsequent to purchase.

Construction

Material and purchased parts ($\$200,000 \times .98$)	\$196,000
Labor costs	190,000
Overhead costs	50,000
Cost of installing equipment	<u>4,400</u>
Total cost	<u>\$440,400</u>

Note that the cost of material and purchased parts is reduced by the amount of cash discount not taken because the equipment should be reported at its cash equivalent price. The imputed interest on funds used during construction related to stock financing should not be capitalized or expensed. This item is an opportunity cost that is not reported.

Profit on self-construction should not be reported. Profit should only be reported when the asset is sold.

EXERCISE 10-5 (30-40 minutes)

	Land	Buildings	M & E	Other	
Abstract fees	\$ 520				
Architect's fees		\$ 2,800			
Cash paid for land and old building	87,000				
Removal of old building (\$20,000 – \$5,500)	14,500				
Surveying before construction		370			
Interest on loans during construction		7,400			
Excavation before construction		19,000			
Machinery purchased			\$53,900	\$1,100	—Misc. expense (Discount Lost)
Freight on machinery			1,340		
Storage charges caused by noncompletion of building				2,180	—Misc. expense (Loss)
New building		485,000			
Assessment by city	1,600				
Hauling charges—machinery				620	—Misc. expense (Loss)
Installation—machinery			2,000		
Landscaping	5,400				
	<u>\$109,020</u>	<u>\$514,570</u>	<u>\$57,240</u>	<u>\$3,900</u>	

EXERCISE 10-6 (15-25 minutes)

1.	Land	131,250	
	Buildings	306,250	
	Equipment	262,500	
	Cash		700,000

$$\$700,000 \times \frac{\$150,000}{\$800,000} = \$131,250 \quad \text{Land}$$

$$\$700,000 \times \frac{\$350,000}{\$800,000} = \$306,250 \quad \text{Buildings}$$

$$\$700,000 \times \frac{\$300,000}{\$800,000} = \$262,500 \quad \text{Equipment}$$

EXERCISE 10-6 (Continued)

2.	Store Equipment	25,000	
	Cash		2,000
	Note Payable		23,000
3.	Office Equipment	19,600	
	Accounts Payable (\$20,000 X .98).....		19,600
4.	Land	27,000	
	Contribution Revenue		27,000
5.	Warehouse.....	600,000	
	Cash.....		600,000

EXERCISE 10-7 (20-25 minutes)

(a) Avoidable Interest

Weighted-Average			
<u>Accumulated Expenditures</u>	X	<u>Interest Rate</u>	= <u>Avoidable Interest</u>
\$2,000,000		12%	\$240,000
1,600,000		10.42%	<u>166,720</u>
			<u>\$406,720</u>

Weighted-average interest rate computation	<u>Principal</u>	<u>Interest</u>
10% short-term loan	\$1,400,000	\$140,000
11% long-term loan	<u>1,000,000</u>	<u>110,000</u>
	<u>\$2,400,000</u>	<u>\$250,000</u>

$$\frac{\text{Total Interest}}{\text{Total Principal}} = \frac{\$250,000}{\$2,400,000} = 10.42\%$$

EXERCISE 10-7 (Continued)

(b)

	<u>Actual Interest</u>	
Construction loan	\$2,000,000 X 12% =	\$240,000
Short-term loan	\$1,400,000 X 10% =	140,000
Long-term loan	\$1,000,000 X 11% =	<u>110,000</u>
	Total	<u>\$490,000</u>

Because avoidable interest is lower than actual interest, use avoidable interest.

Cost	\$5,200,000
Interest capitalized	<u>406,720</u>
Total cost	<u>\$5,606,720</u>

$$\text{Depreciation Expense} = \frac{\$5,606,720 - 300,000}{30 \text{ years}} = \$176,891$$

EXERCISE 10-8 (20-25 minutes)

(a) Computation of Weighted-Average Accumulated Expenditures

<u>Expenditures</u>			<u>Capitalization</u>		<u>Weighted-Average</u>
<u>Date</u>	<u>Amount</u>	X	<u>Period</u>	=	<u>Accumulated Expenditures</u>
March 1	\$ 360,000		10/12		\$ 300,000
June 1	600,000		7/12		350,000
July 1	1,500,000		6/12		750,000
December 1	<u>1,500,000</u>		1/12		<u>125,000</u>
	<u>\$3,960,000</u>				<u>\$1,525,000</u>

<u>Weighted-Average</u>		<u>Interest Rate</u>		<u>Avoidable Interest</u>
<u>Accumulated Expenditures</u>	X		=	
\$1,525,000		.12 (Construction loan)		\$183,000

Actual interest

\$3,000,000 X 12%	\$ 360,000
\$4,000,000 X 13%	520,000
\$1,600,000 X 10%	<u>160,000</u>
	<u>\$1,040,000</u>

Note: Use avoidable interest for capitalization purposes because it is lower than actual.

EXERCISE 10-8 (Continued)

(b) Building.....	183,000	
Interest Expense*	857,000	
Cash (\$360,000 + \$520,000 + \$160,000)		1,040,000

*Actual interest for year	\$1,040,000
Less: Amount capitalized	<u>(183,000)</u>
Interest expense debit	<u>\$ 857,000</u>

EXERCISE 10-9 (20-25 minutes)

(a) Computation of Weighted-Average Accumulated Expenditures

<u>Expenditures</u>			<u>Capitalization</u>		<u>Weighted-Average</u>
<u>Date</u>	<u>Amount</u>	X	<u>Period</u>	=	<u>Accumulated Expenditures</u>
July 31	\$200,000		3/12		\$50,000
November 1	100,000		0		<u>0</u>
					<u>\$50,000</u>

Interest revenue \$100,000 X 10% X 3/12 = \$2,500

Avoidable interest

<u>Weighted-Average</u>		<u>Interest Rate</u>	=	<u>Avoidable Interest</u>
<u>Accumulated Expenditures</u>	X			
\$50,000		12%		\$6,000

Total interest cost

\$300,000 X 12% X 5/12 =	\$15,000
\$30,000 X 8% =	<u>2,400</u>
	<u>\$17,400</u>

Interest capitalized \$ 6,000

EXERCISE 10-9 (Continued)

(b) (1)	7/31	Cash	300,000	
		Note Payable		300,000
		Machine	200,000	
		Trading Securities	100,000	
		Cash		300,000
(2)	11/1	Cash	102,500	
		Interest Revenue		
		(\$100,000 X 10% X 3/12)		2,500
		Trading Securities.....		100,000
		Machine	100,000	
		Cash		100,000
(3)	12/31	Machine	6,000	
		Interest Expense		
		(\$17,400 – \$6,000).....	11,400	
		Cash (\$30,000 X 8%)		2,400
		Interest Payable		
		(\$300,000 X 12% X 5/12)		15,000

EXERCISE 10-10 (20-25 minutes)

Situation I. \$80,000—The requirement is the amount Oksana Baiul should report as capitalized interest at 12/31/04. The amount of interest eligible for capitalization is

Weighted-Average Accumulated Expenditures X Interest Rate = Avoidable Interest

Since Oksana Baiul has outstanding debt incurred specifically for the construction project, in an amount greater than the weighted-average accumulated expenditures of \$800,000, the interest rate of 10% is used for capitalization purposes. Therefore, the avoidable interest is \$80,000, which is less than the actual interest.

$$\mathbf{\$800,000 \times .10 = \$80,000}$$

EXERCISE 10-10 (Continued)

Finally, per FASB Statement No. 62, the interest earned of \$250,000 is irrelevant to the question addressed in this problem because such interest earned on the unexpended portion of the loan is not to be offset against the amount eligible for capitalization.

Situation II. \$39,000—The requirement is total interest costs to be capitalized. FASB Statement No. 34 identifies assets which qualify for interest capitalization: assets constructed for an enterprise's own use and assets intended for sale or lease that are produced as discrete projects. Inventories that are routinely produced in large quantities on a repetitive basis do not qualify for interest capitalization. Therefore, only \$30,000 and \$9,000 are capitalized.

Situation III. \$385,000—The requirement is to determine the amount of interest to be capitalized on the financial statements at April 30, 2002. The requirements of the FASB Statement No. 34 are met: (1) expenditures for the asset have been made, (2) activities that are necessary to get the asset ready for its intended use are in progress, and (3) interest cost is being incurred. The amount to be capitalized is determined by applying an interest rate to the weighted-average amount of accumulated expenditures for the asset during the period. Because the \$7,000,000 of expenditures incurred for the year ended April 30, 2005, were incurred evenly throughout the year, the weighted-average amount of expenditures for the year is \$3,500,000, ($\$7,000,000 \div 2$). Therefore, the amount of interest to be capitalized is \$385,000 ($\$3,500,000 \times 11\%$). In any period the total amount of interest cost to be capitalized shall not exceed the total amount of interest cost incurred by the enterprise. (Total interest is \$1,100,000). Finally, per FASB Statement No. 62, the interest earned of \$650,000 is irrelevant to the question addressed in this problem because such interest earned on the unexpended portion of the loan is not be offset against the amount eligible for capitalization.

EXERCISE 10-11 (10-15 minutes)

(a)	Equipment.....	10,000	
	Accounts Payable.....		10,000
	Accounts Payable	10,000	
	Equipment (\$10,000 X .02)		200
	Cash		9,800
(b)	Equipment (new)	9,900*	
	Loss on Disposal of Equipment	1,600**	
	Accumulated Depreciation.....	6,000	
	Accounts Payable.....		9,500
	Equipment (old).....		8,000
	**Cost	\$8,000	
	Accumulated Depreciation	<u>6,000</u>	
	Book value	2,000	
	Fair market value	<u>400</u>	
	Loss	<u>\$1,600</u>	
	*Cost (\$9,500 + \$400)	\$9,900	
	Accounts Payable	9,500	
	Cash		9,500
(c)	Equipment (\$10,800 X .91743).....	9,908	
	Discount on Note Payable.....	892	
	(\$10,800 – \$9,908)		
	Note Payable		10,800
	Interest Expense	892	
	Note Payable.....	10,800	
	Discount on Note Payable		892
	Cash		10,800

EXERCISE 10-12 (15-20 minutes)

(a)	Land	81,000	
	Contribution Revenue		81,000
(b)	Land	180,000	
	Buildings.....	630,000	
	Common Stock (\$50 X 13,000)		650,000
	Additional Paid-in Capital*		160,000

*Since the market value of the stock is not determinable, the market value of the property is used as the basis for recording the asset and issuance of the stock.

(c)	Machinery	40,100	
	Materials		12,500
	Direct Labor		15,000
	Factory Overhead		
	[(60% X \$15,000) + \$2,700 + \$900].....		12,600
	(Overhead applied, 60% of \$15,000 plus \$3,600)		

EXERCISE 10-13 (20-25 minutes)

1.	Land	350,000	
	Building.....	1,050,000	
	Machinery and Equipment	700,000	
	Common Stock (12,500 X \$100)		1,250,000
	Paid-in Capital in Excess of Par.....		850,000
	(\$2,100,000 – \$1,250,000)		
	(The cost of the plant assets is \$2,100,000, or 12,500 X \$168. The cost is allocated in proportion to the appraised value: 1/6 to Land, 1/2 to Building, and 1/3 to Machinery and Equipment.)		

EXERCISE 10-13 (Continued)

2.	Buildings (\$105,000 plus \$161,000).....	266,000	
	Machinery and Equipment	135,000	
	Land Improvements	122,000	
	Land	18,000	
	Cash		541,000
3.	Machinery and Equipment	265,300	
	Cash		265,300
	(\$10,500 plus \$254,800, which is 98% of \$260,000.)		

EXERCISE 10-14 (15-20 minutes)

(a)	Equipment.....	576,765*	
	Discount on Notes Payable.....	223,235	
	Notes Payable		800,000
	*PV of \$160,000 annuity @ 12% for 5 years (\$160,000 X 3.60478) = \$576,765		
(b)	Interest Expense	69,212*	
	Notes Payable.....	160,000	
	Discount on Notes Payable		69,212
	Cash		160,000
	*(12% X \$576,765)		

<u>Year</u>	<u>Note Payment</u>	<u>12% Interest</u>	<u>Reduction of Principal</u>	<u>Balance</u>
1/2/04				\$576,765
12/31/04	\$160,000	\$69,212	\$ 90,788	485,977
12/31/05	160,000	58,317	101,683	384,294

EXERCISE 10-14 (Continued)

(c)	Interest Expense	58,317	
	Notes Payable	160,000	
	Discount on Notes Payable		58,317
	Cash		160,000
(d)	Depreciation Expense	57,677*	
	Accumulated Depreciation		57,677

*(\$576,765 ÷ 10)

EXERCISE 10-15 (15-20 minutes)

(a)	Equipment	86,861.85*	
	Discount on Notes Payable	18,138.15	
	Cash		30,000.00
	Notes Payable		75,000.00

*PV of \$15,000 annuity @ 10% for

5 years (\$15,000 X 3.79079)	\$56,861.85
Down payment	<u>30,000.00</u>
Capitalized value of equipment	<u>\$86,861.85</u>

(b)	Notes Payable	15,000.00	
	Interest Expense (see schedule)	5,686.19	
	Cash		15,000.00
	Discount on Notes Payable		5,686.19

<u>Year</u>	<u>Note Payment</u>	<u>10% Interest</u>	<u>Reduction of Principal</u>	<u>Balance</u>
12/31/03				\$56,861.85
12/31/04	\$15,000.00	\$5,686.19	\$ 9,313.81	47,548.04
12/31/05	15,000.00	4,754.80	10,245.20	37,302.84

EXERCISE 10-15 (Continued)

(c) Notes Payable.....	15,000.00	
Interest Expense	4,754.80	
Cash		15,000.00
Discount on Notes Payable		4,754.80

EXERCISE 10-16 (25-35 minutes)

**Hayes Industries
Acquisition of Assets 1 and 2**

Use Appraised Values to break-out the lump-sum purchase

Description	Appraisal	Percentage	Lump-Sum	Value on Books
Machinery	85,000	0.65384615	100,000	65,385
Office Equipment	<u>45,000</u>	0.34615385	100,000	34,615
	<u>130,000</u>			

Machinery.....	65,385	
Office Equipment	34,615	
Cash		100,000

Acquisition of Asset 3

Use the cash price as a basis for recording the asset with a discount recorded on the note.

Machinery.....	35,900	
Discount on Notes Payable.....	4,100	
Cash		10,000
Notes Payable		30,000

EXERCISE 10-16 (Continued)

Acquisition Asset 4

Since the machines are similar in nature, a gain will be recognized in the proportion of Cash received (\$10,000/\$80,000) times the \$20,000 gain (FMV of \$80,000 minus BV of \$60,000). The Gain recognized will then be \$2,500 with \$17,500 of it being unrecognized and used to reduce the basis of the asset acquired.

Machinery	52,500	
Accumulated Depreciation	40,000	
Cash	10,000	
Machinery		100,000
Gain on Trade-in of Asset.....		2,500

Acquisition of Asset 5

In this case the Office Equipment should be placed on Hayes's books at the fair market value of the stock. The difference between the stock's par value and its fair market value should be credited to Additional Paid-in Capital in Excess of Par.

Office Equipment	1,100	
Common Stock		800
Additional Paid-in Capital		300

Acquisition of Land and the Construction of a Building

First look at Interest during Construction

EXERCISE 10-16 (Continued)

Schedule of Weighted Average Expenditures

<u>Date</u>	<u>Amount</u>	<u>Weight</u>	<u>Weighted Expenditure</u>
1-Feb	150,000	9/12	112,500
1-Feb	120,000	9/12	90,000
1-Jun	360,000	5/12	150,000
1-Sep	480,000	2/12	80,000
1-Nov	<u>100,000</u>	0/12	<u>0</u>
	<u>1,210,000</u>		<u>432,500</u>

Schedule of Weighted Borrowings

<u>Date</u>	<u>Amount</u>	<u>Weight</u>	<u>Weighted Borrowing</u>	<u>Rate</u>	<u>Capitalized</u>
1-Jun	600,000	5/12	250,000	0.12	30,000
			<u>182,500</u>	0.08	<u>14,600</u>
			<u>432,500</u>		<u>44,600</u>

Land Cost 150,000

Building Cost 1,104,600

Land	150,000	
Building	1,104,600	
Cash		1,210,000
Interest Expense		44,600

EXERCISE 10-17 (10-15 minutes)

Busytown Corporation

Machine (\$340 + \$85).....	425	
Accumulated Depreciation	140	
Loss on Disposal of Machine.....	65	
Machine (old)		290
Cash.....		340

Computation of loss:

Book value of old machine (\$290 – \$140)	150
Fair value of old machine	<u>(85)</u>
Loss on exchange	<u>\$ 65</u>

Dick Tracy Business Machine Company

Cash	340	
Inventory (old).....	85	
Cost of Goods Sold.....	270	
Sales		425
Inventory (new).....		270

EXERCISE 10-18 (20-25 minutes)

(a) Assets Are Considered Similar in Nature:

Depreciation Expense.....	700	
Accumulated Depreciation—Melter		700
(\$11,200 – \$700 = \$10,500;		
\$10,500 ÷ 5 = \$2,100;		
\$2,100 X 4/12 = \$700)		
Melter (New).....	15,200**	
Accumulated Depreciation—Melter	7,000	
Gain on Disposal of Plant Assets		1,000*
Melter (Old).....		11,200
Cash		10,000

*Cost of old asset	\$11,200	
Accum. depr.	<u>(7,000)</u>	(\$6,300 + \$700)
Book value	4,200	
Fair market value		
of old asset	<u>(5,200)</u>	
Gain (on disposal		
of plant asset)	<u>\$ 1,000</u>	

**Cash paid	\$10,000
FMV of old melter	<u>5,200</u>
Cost of new melter	<u>\$15,200</u>

Gain is not deferred because boot is more than 25% of the transaction which makes the entire transaction monetary in nature.

EXERCISE 10-18 (Continued)

(b) Assets Are Considered Dissimilar in Nature:

Depreciation Expense	700	
Accumulated Depreciation—Melter		700
Melter (New).....	15,200**	
Accumulated Depreciation—Melter	7,000	
Gain on Disposal of Plant Assets		1,000
Melter (Old).....		11,200
Cash		10,000
**Cash paid	\$10,000	
FMV of old asset	<u>(5,200)</u>	
Cost of new asset	<u>\$15,200</u>	

Note that the entries are the same for both (1) and (2).

EXERCISE 10-19 (15-20 minutes)

Carlos Arruza Company:

Equipment (New)	12,000	
Accumulated Depreciation	19,000	
Equipment (Old)		28,000
Cash.....		3,000

Valuation of equipment:

Book value of equip. given	\$ 9,000	OR	Fair value received	\$15,500
Fair value of boot given	3,000		Less gain deferred	<u>3,500*</u>
New equip.	<u>\$12,000</u>		New equipment	<u>\$12,000</u>
			*Fair value of old equipment	\$12,500
			Book value of old equipment	<u>(9,000)</u>
			Gain on disposal	<u>\$ 3,500</u>

Note: Cash paid is less than 25%, the transaction is nonmonetary, so the gain is deferred.

EXERCISE 10-19 (Continued)

Tony Lo Bianco Company:

Cash		3,000	
Equipment (New)		12,500	
Accumulated Depreciation		10,000	
Loss on Disposal of Plant Assets		2,500	
 Equipment (Old).....			28,000
 Computation of loss:			
Book value of old equipment	\$18,000		
Fair value of old equipment	<u>15,000</u>		
Loss on exchange	<u>\$ 2,500</u>		

EXERCISE 10-20 (15-20 minutes)

(a) Automatic Equipment	51,100*	
Accumulated Depreciation—Equipment	20,000	
 Equipment		62,000
 Cash		9,100

Cash	\$8,000	Cost of old asset	\$62,000
Installation cost		Accumulated	
(cash)	1,100	depreciation	<u>20,000</u>
Market value of		Book value	42,000
used equipment	<u>47,800</u>	Fair market value	
	<u>\$56,900</u>	of old asset	<u>47,800</u>
		Gain	<u>\$ 5,800</u>

*Cost	\$56,900
Less: Gain deferred	<u>5,800</u>
Adjusted cost	<u>\$51,100</u>

Note: Cash paid is less than 25%, so the gain is deferred.

EXERCISE 10-20 (Continued)

(b) Automatic Equipment (see above).....	56,900	
Accumulated Depreciation—Equipment (given)	20,000	
Gain on Disposal of Equipment (see above)		5,800
Equipment (given)		62,000
Cash (see above)		9,100

EXERCISE 10-21 (20-25 minutes)

- (a) Any addition to plant assets is capitalized because a new asset has been created. This addition increases the service potential of the plant.
- (b) Expenditures that do not increase the service benefits of the asset are expensed. Painting costs are considered ordinary repairs because they maintain the existing condition of the asset or restore it to normal operating efficiency.
- (c) The approach to follow is to remove the old book value of the roof and substitute the cost of the new roof. It is assumed that the expenditure increases the future service potential of the asset.
- (d) Conceptually, the book value of the old electrical system should be removed. However, practically it is often difficult if not impossible to determine this amount. In this case, one of two approaches is followed. One approach is to capitalize the replacement on the theory that sufficient depreciation was taken on the old system to reduce the carrying amount to almost zero. A second approach is to debit accumulated depreciation on the theory that the replacement extends the useful life of the asset and thereby recaptures some or all of the past depreciation. In our present situation, the problem specifically states that the useful life is not extended and therefore debiting Accumulated Depreciation is inappropriate. Thus, this expenditure should be added to the cost of the plant facility.
- (e) See discussion in (d) above. In this case, because the useful life of the asset has increased, a debit to Accumulated Depreciation would appear to be the most appropriate.

EXERCISE 10-22 (15-20 minutes)

1/30	Accumulated Depreciation—Buildings	112,200*	
	Loss on Disposal of Plant Assets	24,900**	
	Buildings		132,000
	Cash		5,100

***(5% X \$132,000 = \$6,600; \$6,600 X 17 = \$112,200)**

****(\$132,000 – \$112,200) + \$5,100**

3/10	Cash (\$2,900 – \$300).....	2,600	
	Accumulated Depreciation—Machinery	11,200*	
	Loss on Disposal of Plant Assets	2,200**	
	Machinery		16,000

***(70% X \$16,000 = \$11,200)**

****(\$16,000 – \$11,200) + \$300 – \$2,900**

3/20	Machinery (new).....	385	
	Cash		385

5/18	Machinery (new).....	5,500	
	Accumulated Depreciation—Machinery	2,100*	
	Loss on Disposal of Plant Assets	1,400**	
	Machinery (old)		3,500
	Cash		5,500

***(60% X \$3,500 = \$2,100)**

****(\$3,500 – \$2,100)**

6/23	Building Maintenance and Repairs Expense	6,900	
	Cash		6,900

EXERCISE 10-23 (20-25 minutes)

- (a) C
- (b) E, assuming immaterial
- (c) C
- (d) C
- (e) C
- (f) C
- (g) C
- (h) E
- (i) E

EXERCISE 10-24 (20-25 minutes)

(a)	Depreciation Expense (8/12 X \$60,000)	40,000	
	Accumulated Depreciation—Machine		40,000
	Loss on Disposal of Machine	470,000	
	(\$1,300,000 – \$400,000) – \$430,000		
	Cash	430,000	
	Accumulated Depreciation—Machine	400,000	
	(\$360,000 + \$30,000)		
	Machine		1,300,000
(b)	Depreciation Expense (3/12 X \$60,000)	15,000	
	Accumulated Depreciation—Machine		15,000
	Cash	1,040,000	
	Accumulated Depreciation—Machine	375,000	
	(\$360,000 + \$15,000)		
	Machine		1,300,000
	Gain on Sale of Machine		115,000*
	*\$1,040,000 – (\$1,300,000 – \$375,000)		

EXERCISE 10-24 (Continued)

(c) Depreciation Expense (7/12 X \$60,000)	35,000	
Accumulated Depreciation—Machine		35,000
Contribution Expense.....	1,100,000	
Accumulated Depreciation—Machine	395,000	
(\$360,000 + \$35,000)		
Machine		1,300,000
Gain on Disposal of Machine		195,000*
*\$1,100,000 – (\$1,300,000 – \$395,000)		

EXERCISE 10-25 (15-20 minutes)

April 1 Cash	430,000	
Accumulated Depreciation—Building.....	160,000	
Land.....		60,000
Building.....		280,000
Gain on Disposal of Plant Assets.....		250,000
(\$280,000 – \$160,000 = \$120,000;		
\$120,000 + \$60,000 = \$180,000;		
\$430,000 – \$180,000 = \$250,000		
gain)		
Aug. 1 Land	90,000	
Building	400,000	
Cash.....		490,000

TIME AND PURPOSE OF PROBLEMS

Problem 10-1 (Time 35-40 minutes)

Purpose—to provide a problem involving the proper classification of costs related to property, plant, and equipment. Property, plant, and equipment must be segregated into land, buildings, leasehold improvements, and machinery and equipment for purposes of the analysis. Such costs as demolition costs, real estate commissions, imputed interest, minor and major repair work, and royalty payments are presented. An excellent problem for reviewing the first part of this chapter.

Problem 10-2 (Time 40-55 minutes)

Purpose—to provide a problem involving the proper classification of costs related to property, plant, and equipment. Such costs as land, freight and unloading, installation, parking lots, sales and use taxes, and machinery costs must be identified and appropriately classified. An excellent problem for reviewing the first part of this chapter.

Problem 10-3 (Time 35-45 minutes)

Purpose—to provide a problem involving the proper classification of costs related to land and buildings. Typical transactions involve allocation of the cost of removal of a building, legal fees paid, general expenses, cost of organization, special tax assessments, etc. A good problem for providing a broad perspective as to the types of costs expensed and capitalized.

Problem 10-4 (Time 35-40 minutes)

Purpose—to provide a problem involving the method of handling the disposition of certain properties. The dispositions include a condemnation, demolition, trade-in, contribution and sale to a stockholder. The problem therefore involves a number of situations and provides a good overview of the accounting treatment accorded property dispositions.

Problem 10-5 (Time 20-30 minutes)

Purpose—to provide the student with a problem in which schedules must be prepared on the costs of acquiring land and the costs of constructing a building. Interest costs are included.

Problem 10-6 (Time 25-35 minutes)

Purpose—to provide the student with a problem to determining costs to include in the value of land and plant, including interest capitalization.

Problem 10-7 (Time 20-30 minutes)

Purpose—to provide the student with a problem to compute capitalized interest and to present disclosures related to capitalized interest.

Problem 10-8 (Time 35-45 minutes)

Purpose—to provide the student with a problem involving the exchange of machinery. Four different exchange transactions are possible, and journal entries are required for each possible transaction. The exchange transactions cover the receipt and disposition of cash as well as the purchase of a machine from a dealer of machinery.

Problem 10-9 (Time 30-40 minutes)

Purpose—to provide a problem on exchanges of productive assets that involves similar and dissimilar assets. The problem is instructive because the accounting treatment for exchanges of similar and dissimilar assets involving gain situations is highlighted.

Problem 10-10 (Time 30-40 minutes)

Purpose—to provide the student with another problem involving the exchange of productive assets. This problem is unusual because the size of the boot is greater than 25%. As a result, the entire transaction is monetary in nature and all gains and losses are recognized.

Problem 10-11 (Time 35-45 minutes)

Purpose—to provide a property, plant, and equipment problem consisting of three transactions that have to be recorded—(1) an asset purchased on a deferred payment contract, (2) a lump sum purchase, and (3) a nonmonetary exchange.

SOLUTIONS TO PROBLEMS

PROBLEM 10-1

(a)

Craig Ehlo Company ANALYSIS OF LAND ACCOUNT for 2004

Balance at January 1, 2004			\$ 230,000
<u>Land site number 621</u>			
Acquisition cost		\$850,000	
Commission to real estate agent		51,000	
Clearing costs	\$35,000		
Less amounts recovered	<u>13,000</u>	<u>22,000</u>	
Total land site number 621			923,000
<u>Land site number 622</u>			
Land value		300,000	
Building value		120,000	
Demolition cost		<u>41,000</u>	
Total land site number 622			<u>461,000</u>
Balance at December 31, 2001			<u>\$1,614,000</u>

Craig Ehlo Company ANALYSIS OF BUILDINGS ACCOUNT for 2004

Balance at January 1, 2004			\$ 890,000
Cost of new building constructed on land site number 622			
Construction costs		\$330,000	
Excavation fees		38,000	
Architectural design fees		11,000	
Building permit fee		<u>2,500</u>	<u>381,500</u>
Balance at December 31, 2004			<u>\$1,271,500</u>

PROBLEM 10-1 (Continued)

Craig Ehlo Company
ANALYSIS OF LEASEHOLD IMPROVEMENTS ACCOUNT
for 2004

Balance at January 1, 2004	\$660,000
Office space	<u>89,000</u>
Balance at December 31, 2004	<u>\$749,000</u>

Craig Ehlo Company
ANALYSIS OF MACHINERY AND EQUIPMENT ACCOUNT
for 2004

Balance at January 1, 2004		\$875,000
Cost of the new machines acquired		
Invoice price	\$ 87,000	
Freight costs	3,300	
Unloading charges	<u>2,400</u>	<u>92,700</u>
Balance at December 31, 2004		<u>\$967,700</u>

(b) Items in the fact situation which were not used to determine the answer to (a) above are as follows:

- 1. Interest imputed on common stock financing is not permitted by FASB Statement No. 34 and thus does not appear in any financial statement.**
- 2. Land site number 623, which was acquired for \$650,000, should be included in Ehlo's balance sheet as land held for resale (investment section).**
- 3. Royalty payments of \$17,500 should be included as a normal operating expense in Ehlo's income statement.**

PROBLEM 10-2

(a)

**Spud Webb Corporation
ANALYSIS OF LAND ACCOUNT**

2004

Balance at January 1, 2004	\$300,000
Plant facility acquired from Ken Norman Company— portion of fair value allocated to land (Schedule 1)	<u>185,000</u>
Balance at December 31, 2004	<u>\$485,000</u>

**Spud Webb Corporation
ANALYSIS OF LAND IMPROVEMENTS ACCOUNT**

2004

Balance at January 1, 2004	\$140,000
Parking lots, streets, and sidewalks	<u>95,000</u>
Balance at December 31, 2004	<u>\$235,000</u>

**Spud Webb Corporation
ANALYSIS OF BUILDINGS ACCOUNT**

2004

Balance at January 1, 2004	\$1,100,000
Plant facility acquired from Ken Norman Company— portion of fair value allocated to building (Schedule 1)	<u>555,000</u>
Balance at December 31, 2004	<u>\$1,655,000</u>

PROBLEM 10-2 (Continued)

Spud Webb Corporation
ANALYSIS OF MACHINERY AND EQUIPMENT ACCOUNT
2004

Balance at January 1, 2004		\$ 960,000
Cost of new machinery and equipment acquired		
Invoice price	\$400,000	
Freight and unloading costs	13,000	
Sales taxes	20,000	
Installation costs	<u>26,000</u>	<u>459,000</u>
		\$1,419,000
Deduct cost of machines disposed of		
Machine scrapped June 30, 2004	\$ 80,000*	
Machine sold July 1, 2004	<u>44,000*</u>	<u>124,000</u>
Balance at December 31, 2004		<u>\$1,295,000</u>

*(The accumulated depreciation account can be ignored for this part of the problem.)

PROBLEM 10-2 (Continued)

Schedule 1

Computation of Fair Value of Plant Facility Acquired from Ken Norman Company and Allocation to Land and Building

20,000 shares of Webb common stock at \$37 quoted
market price on date of exchange (20,000 X \$37) \$740,000

Allocation to land and building accounts in proportion
to appraised values at the exchange date:

	<u>Amount</u>	<u>Percentage of total</u>
Land	\$230,000	25
Building	<u>690,000</u>	<u>75</u>
Total	<u>\$920,000</u>	<u>100</u>

Land	(\$740,000 X 25%)	\$185,000
Building	(\$740,000 X 75%)	<u>555,000</u>
Total		<u>\$740,000</u>

- (b) Items in the fact situation that were not used to determine the answer to (a) above, are as follows:
1. The tract of land, which was acquired for \$150,000 as a potential future building site, should be included in Webb's balance sheet as an investment in land.
 2. The \$110,000 and \$320,000 book values respective to the land and building carried on Ken Norman's books at the exchange date are not used by Webb.
 3. The \$12,080 loss (Schedule 2) incurred on the scrapping of a machine on June 30, 2004, should be included in the other expenses and losses section in Webb's income statement. The \$67,920 accumulated depreciation (Schedule 3) should be deducted from the accumulated depreciation—machinery and equipment account in Webb's balance sheet.

PROBLEM 10-2 (Continued)

4. The \$3,000 loss on sale of a machine on July 1, 2004 (Schedule 4) should be included in the other expenses and losses section of Webb's income statement. The \$21,000 accumulated depreciation (Schedule 4) should be deducted from the accumulated depreciation—machinery and equipment account in Webb's balance sheet.

Schedule 2

Loss on Scrapping of Machine

June 30, 2004

Cost, January 1, 1996	\$80,000
Accumulated depreciation (double-declining- balance method, 10-year life) January 1, 1996, to June 30, 2004 (Schedule 3)	<u>67,920</u>
Asset book value June 30, 2004	<u>\$12,080</u>
Loss on scrapping of machine	<u>\$12,080</u>

PROBLEM 10-2 (Continued)

Schedule 3

**Accumulated Depreciation Using
Double-Declining-Balance Method**
June 30, 2004
(Double-declining-balance rate is 20%)

<u>Year</u>	<u>Book Value at Beginning of Year</u>	<u>Depreciation Expense</u>	<u>Accumulated Depreciation</u>
1996	\$80,000	\$16,000	\$16,000
1997	64,000	12,800	28,800
1998	51,200	10,240	39,040
1999	40,960	8,192	47,232
2000	32,768	6,554	53,786
2001	26,214	5,243	59,029
2002	20,971	4,194	63,223
2003	16,777	3,355	66,578
2004 (6 months)	13,422	<u>1,342</u>	67,920
		<u>\$67,920</u>	

Schedule 4

Loss on Sale of Machine
July 1, 2004

Cost, January 1, 2001	\$44,000
Depreciation (straight-line method, salvage value of \$2,000, 7-year life) January 1, 2001, to July 1, 2004 [$3\frac{1}{2}$ years $(\$44,000 - \$2,000) \div 7$]	<u>(21,000)</u>
Asset book value July 1, 2004	<u>\$23,000</u>
Asset book value	\$23,000
Proceeds from sale	<u>(20,000)</u>
Loss on sale	<u>\$ 3,000</u>

PROBLEM 10-3

(a)	1.	Land (Schedule A)	180,700	
		Building (Schedule B)	146,250	
		Insurance Expense (6 months X \$95)	570	
		Prepaid Insurance (16 months X \$95)	1,520	
		Organization Expense	610	
		Retained Earnings	43,800	
		Salary Expense	32,100	
		Land and Building		399,950
		Additional Paid-in Capital		5,600
		(800 shares X \$7)		

Schedule A

Amount Consists of:

		Acquisition Cost		
		(\$80,000 + [800 X \$107])		\$165,600
		Removal of Old Building		9,800
		Legal Fees (Examination of title)		1,300
		Special Tax Assessment		4,000
		Total		<u>\$180,700</u>

Schedule B

Amount Consists of:

		Legal Fees (Construction contract)		\$ 1,860
		Construction Costs (First payment)		60,000
		Construction Costs (Second payment)		40,000
		Insurance (2 months)		
		([2,280 ÷ 24] = \$95 X 2 = \$190)		190
		Plant Superintendent's Salary		4,200
		Construction Costs (Final payment)		40,000
		Total		<u>\$146,250</u>

	2.	Land and Building	4,000	
		Depreciation Expense		2,537
		Accumulated Depreciation—Building		1,463

PROBLEM 10-3 (Continued)

Schedule C

Depreciation taken		\$ 4,000
Depreciation that should be taken (1% X \$146,250)		<u>(1,463)</u>
Depreciation adjustment		<u>\$ 2,537</u>

(b) Plant, Property, and Equipment:

Land		\$180,700	
Building	\$146,250		
Less: Accum. depr.	<u>1,463</u>	<u>144,787</u>	\$325,487

PROBLEM 10-4

The following accounting treatment appears appropriate for these items:

Land—The loss on the condemnation of the land of \$9,000 (\$40,000 – \$31,000) should be reported as an extraordinary item on the income statement. If condemnations are either usual or recurring, then an ordinary or unusual classification is more appropriate. The \$35,000 land purchase has no income statement effect.

Building—There is no recognized gain or loss on the demolition of the building. The entire purchase cost (\$15,000), decreased by the demolition proceeds (\$3,600), is allocated to land.

Warehouse—The gain on the destruction of the warehouse should be reported as an extraordinary item, assuming that it is unusual and infrequent. The gain is computed as follows:

Insurance proceeds		\$74,000
Deduct: Cost	\$70,000	
Less accumulated depreciation	<u>11,000</u>	<u>59,000</u>
Realized gain		<u>\$15,000</u>

Some contend that a portion of this gain should be deferred because the proceeds are reinvested in similar assets. We do not believe such an approach should be permitted. Deferral of the gain in this situation is not permitted under GAAP.

Machine—The recognized gain on the transaction would be computed as follows:

Fair market value of old machine		\$ 7,200
Deduct: Cost	\$ 8,000	
Less accumulated depreciation	<u>(3,200)</u>	<u>4,800</u>
Total gain		<u>\$ 2,400</u>

$$\text{Total gain recognized} = \$2,400 \times \frac{\$900}{\$900 + \$6,300} = \underline{\underline{\$300}}$$

PROBLEM 10-4 (Continued)

This gain would probably be reported in other revenues and gains. It might be reported as an unusual item if the company believes that such a situation occurs infrequently. The cost of the new machine would be capitalized at \$4,200.

Fair market value of new machine		\$6,300
Less gain deferred	\$2,400	
Less accumulated depreciation	<u>(300)</u>	<u>2,100</u>
Total gain		<u>\$4,200</u>

Furniture—The contribution of the furniture would be reported as a contribution expense of \$3,100 with a related gain on disposition of furniture of \$950: $\$3,100 - (\$10,000 - \$7,850)$. The contribution expense and the related gain may be netted, if desired.

Automobile—The loss on sale of the automobile of \$1,580: $[\$2,960 - (\$8,000 - \$3,460)]$ should probably be reported in the other expenses or losses section. It might be reported as an unusual item if the company believes that such a situation occurs infrequently.

PROBLEM 10-5

(a) **George Solti Corporation**
Cost of Land (Site #101)
As of September 30, 2005

Cost of land and old building	\$600,000
Real estate broker's commission	36,000
Legal fees	6,000
Title insurance	18,000
Removal of old building	<u>54,000</u>
Cost of land	<u>\$714,000</u>

(b) **George Solti Corporation**
Cost of Building
As of September 30, 2005

Fixed construction contract price	\$3,000,000
Plans, specifications, and blueprints	21,000
Architects' fees	82,000
Interest capitalized during 2004 (Schedule 1)	120,000
Interest capitalized during 2005 (Schedule 2)	<u>190,000</u>
Cost of building	<u>\$3,413,000</u>

Schedule 1

Interest Capitalized During 2001 and 2002

	Weighted-average accumulated construction expenditures		Interest rate		Interest to be capitalized
2004:	\$1,200,000	X	10%	=	<u>\$120,000</u>
2005:	\$1,900,000	X	10%	=	<u>\$190,000</u>

PROBLEM 10-6

**Interest Capitalization
Balance in the Land Account**

Purchase Price	\$142,000
Surveying Costs	2,000
Title Insurance Policy	4,000
Demolition Costs	3,000
Salvage	<u>(1,000)</u>
Total Land Cost	<u>\$150,000</u>

Weighted Average Expenditures for 2002

<u>Date</u>	<u>Amount</u>	<u>Fraction</u>	<u>Weighted Expenditures</u>
1-Dec	150,000	1/12	12,500
1-Dec	30,000	1/12	2,500
1-Dec	<u>3,000</u>	1/12	<u>250</u>
	<u>183,000</u>		<u>\$15,250</u>

Weighted Average Borrowings for 2002

<u>Date</u>	<u>Amount</u>	<u>Fraction</u>	<u>Weighted Expenditure</u>	<u>Interest Rate</u>	<u>Amount Capitalizable</u>
1-Dec	600,000	1/12	50,000		
	But Limited To		15,250	0.08	1,220
					2,780
					Interest taken to Interest Expense

PROBLEM 10-6 (Continued)

Weighted Average Expenditures for 2003

<u>Date</u>	<u>Amount</u>	<u>Fraction</u>	<u>Weighted Expenditure</u>
1-Jan	183,000	1/2	91,500
1-Jan	1,220	1/2	610
1-Mar	240,000	1/3	80,000
1-May	360,000	1/6	60,000
1-Jul	<u>60,000</u>	0/12	<u>0</u>
	<u>844,220</u>		<u>232,110</u>

Weighted Average Borrowings for 2002

<u>Date</u>	<u>Amount</u>	<u>Fraction</u>	<u>Weighted Expenditure</u>	<u>Interest Rate</u>	<u>Amount Capitalizable</u>
1-Jan	600,000	1	600,000		
	But Limited To		232,110	0.08	18,568.80
	Interest taken to Interest Expense				29,431.20

- (a) Balance in Land Account—2002 and 2003 150,000.00
- (b) Balance in Building—2002 34,220.00*
- Balance in Building—2003 712,788.80**
- (c) Balance in Interest Expense—2002 2,780.00
- Balance in Interest Expense—2003 29,431.20

*\$30,000 + \$3,000 + \$1,220

**\$34,220 + \$240,000 + \$360,000 + \$60,000 + \$18,568.80

PROBLEM 10-7

(a) Computation of Weighted-Average Accumulated Expenditures

Expenditures			Capitalization		Weighted-Average
Date	Amount	X	Period	=	Accumulated Expenditures
July 30, 2004	\$1,200,000		10/12		\$1,000,000
January 30, 2005	1,500,000		4/12		500,000
May 30, 2005	<u>1,300,000</u>		0		<u>0</u>
	<u>\$4,000,000</u>				<u>\$1,500,000</u>

Weighted-Average Accumulated Expenditures	X	Weighted-Average Interest Rate	=	Avoidable interest
\$1,500,000		13%*		<u>\$195,000</u>

Loans Outstanding During Construction Period

	Principal	Interest
*14% five-year note	\$2,000,000	\$290,000
12% ten-year bond	<u>3,000,000</u>	<u>360,000</u>
	<u>\$5,000,000</u>	<u>\$650,000</u>

$$\frac{\text{Total interest}}{\text{Total principal}} = \frac{\$650,000}{\$5,000,000} = 13\% \text{ (weighted-average rate)}$$

(c) (1) and (2)

Total actual interest cost	<u>\$650,000</u>
Total interest capitalized	<u>\$195,000</u>
Total interest expensed	<u>\$455,000</u>

PROBLEM 10-8

1. Susquehanna Corporation

Cash	23,000	
Machinery (new)	69,000	
Accumulated Depreciation	50,000	
Loss on Exchange of Machinery	18,000*	
Machinery (old)		160,000
*Computation of loss:		
Book value	\$110,000	
Fair value	<u>(92,000)</u>	
Loss	<u>\$ 18,000</u>	

Choctaw Company

Machinery (new)	92,000	
Accumulated Depreciation	45,000	
Loss on Exchange of Machinery	6,000*	
Cash		23,000
Machinery (old)		120,000
*Computation of loss:		
Book value	\$ 75,000	
Fair value	<u>(69,000)</u>	
Loss	<u>\$ 6,000</u>	

2. Susquehanna Corporation

Machinery (new)	92,000	
Accumulated Depreciation	50,000	
Loss on Exchange of machinery	18,000	
Machinery (old)		160,000
 <u>Powhatan Company</u>		
Machinery (new) (\$92,000 – \$16,000)	76,000*	
Accumulated Depreciation	71,000	
Machinery (old)		147,000
*Computation of gain		
deferred:		
Fair value	\$92,000	
Book value	<u>(76,000)</u>	
Gain deferred	<u>\$16,000</u>	

PROBLEM 10-8 (Continued)

3. Susquehanna Corporation

Machinery (new)	100,000	
Accumulated Depreciation	50,000	
Loss on Exchange of machinery	18,000	
Machinery (old)		160,000
Cash		8,000

Shawnee Company

Machinery (new)	78,200*	
Accumulated Depreciation	75,000	
Cash	8,000	
Machinery (old)		160,000
Gain on Exchange of Machinery		1,200**

*[\$92,000 – (\$15,000 – \$1,200)]

**Computation of Gain: $\frac{\$8,000}{\$8,000 + \$92,000} \times (\$100,000 - \$85,000) = \$1,200$

4. Susquehanna Corporation

Machinery (new)	185,000	
Accumulated Depreciation	50,000	
Loss on Exchange of machinery	18,000	
Machinery (old)		160,000
Cash		93,000

Seminole Company

Cash	93,000	
Used Machine Inventory	92,000	
Sales		185,000
Cost of Goods Sold	130,000	
Inventory		130,000

PROBLEM 10-9

(a) Exchange of dissimilar assets:

Arna Inc.'s Books

Asset B	75,000	
Accumulated Depreciation—Asset A	45,000	
Asset A		96,000
Gain on Disposal of Plant Assets (\$60,000 – [\$96,000 – \$45,000])		9,000
Cash		15,000

Bontemps Inc.'s Books

Cash	15,000	
Asset A	60,000	
Accumulated Depreciation—Asset B	52,000	
Asset B		110,000
Gain on Disposal of Plant Assets (\$75,000 – [\$110,000 – \$52,000])		17,000

(b) Exchange of similar assets:

Arna Inc.'s Books

Asset B (\$75,000 – \$9,000)	66,000*	
Accumulated Depreciation—Asset A	45,000	
Asset A		96,000
Cash		15,000

*Computation of gain deferred:

Fair value	\$60,000
Book value	<u>(51,000)</u>
Gain deferred	<u>\$ 9,000</u>

PROBLEM 10-9 (Continued)

Bontemps Inc.'s Books

Cash	15,000	
Asset A	46,400*	
Accumulated Depreciation—Asset B	52,000	
Asset B		110,000
Gain on Disposal of Plant Assets		3,400**

Computation of total gain:

Fair value of Asset B	\$75,000
Book value of Asset B	<u>(58,000)</u>
Total gain	<u>\$17,000</u>

*Fair value of asset acquired	\$60,000	OR	Book value of Asset B	\$58,000
Less gain deferred (\$17,000 – \$3,400)	<u>13,600</u>		Portion of book value sold	<u>(11,600)</u>
Basis of Asset A	<u>\$46,400</u>			<u>\$46,400</u>

$$**\text{Gain recognized} = \frac{\$15,000}{\$15,000 + \$60,000} \times \$17,000 = \underline{\underline{\$3,400}}$$

PROBLEM 10-10

(a) Garrison Books

(1)	Equipment	190,000	
	Accumulated Depreciation—Equipment	60,000	
	Loss on Disposal of Plant Assets	8,000	
	Equipment		140,000
	Cash		118,000

Keillor Books

(2)	Cash	118,000	
	Equipment Inventory	72,000	
	Sales		190,000
	Cost of Goods Sold	165,000	
	Equipment Inventory		165,000

- (b) (1) Garrison Construction should record the same entry as in part (a) above, since the exchange resulted in a loss.
- (2) Keillor should record the same entry as in part (a) above. No gain should be deferred because we are assuming that Garrison is a customer. In addition, because the cash involved is greater than 25% of the value of the exchange, the entire transaction is considered a monetary transaction and a gain is recognized.

(c) Garrison Books

(1)	Equipment	190,000	
	Accumulated Depreciation—Equipment	60,000	
	Equipment		140,000
	Cash		92,000
	Gain on Disposal of Plant Assets		18,000
	(\$98,000 – \$80,000)		

PROBLEM 10-10 (Continued)

		<u>Keillor Books</u>	
(2)	Cash	92,000	
	Equipment Inventory	98,000	
	Sales		190,000
	Cost of Goods Sold	165,000	
	Equipment Inventory		165,000
(d)			
		<u>Garrison Books</u>	
(1)	Equipment	190,000	
	Accumulated Depreciation—Equipment	60,000	
	Cash		103,000
	Equipment		140,000
	Gain on Disposal of Plant Assets		7,000

Note: Cash involved is greater than 25% of the value of the exchange, so the gain is not deferred.

		<u>Keillor Books</u>	
(2)	Cash	103,000	
	Equipment Inventory	87,000	
	Sales		190,000
	Cost of Goods Sold	165,000	
	Equipment Inventory		165,000

Same reasons as cited in (b) (2) above.

PROBLEM 10-11

(a) The major characteristics of plant assets, such as land, buildings, and equipment, that differentiate them from other types of assets are presented below.

1. Plant assets are acquired for use in the regular operations of the enterprise and are not for resale.
2. Property, plant, and equipment possess physical substance or existence and are thus differentiated from intangible assets such as patents and goodwill. Unlike other assets that possess physical substance (i.e., raw material), property, plant, and equipment do not physically become part of the product held for resale.
3. These assets are durable and long-term in nature and are usually subject to depreciation.

(b) *Transaction 1.* To properly reflect cost, assets purchased on deferred payment contracts should be accounted for at the present value of the consideration exchanged between the contracting parties at the date of the consideration. When no interest rate is stated, interest must be imputed at a rate that approximates the rate that would be negotiated in an arm's-length transaction. In addition, all costs necessary to ready the asset for its intended use are considered to be costs of the asset.

Asset cost = Present value of the note + Freight + Installation

$$\begin{aligned} &= \left[\left(\frac{\$20,000}{4} \right) \times 3.17 \right] + \$425 + \$500 \\ &= \$15,850 + 925 \\ &= \$16,775 \end{aligned}$$

PROBLEM 10-11 (Continued)

Transaction 2. The lump-sum purchase of a group of assets should be accounted for by allocating the total cost among the various assets on the basis of their relative fair market values. The \$8,000 of interest expense incurred for financing the purchase is a period cost and is not a factor in determining asset cost.

Inventory	$\$210,000 \times (\$ 50,000/\$250,000) = \$42,000$
Land	$\$210,000 \times (\$ 80,000/\$250,000) = \$67,200$
Building	$\$210,000 \times (\$120,000/\$250,000) = \$100,800$

Transaction 3. The cost of a nonmonetary asset acquired in exchange for a dissimilar nonmonetary asset should be recorded at the fair value of the asset given up plus any cash paid. Furthermore, any gain on exchange is also recognized.

Fair value of trucks	\$46,000
Cash paid	<u>19,000</u>
Cost of land	<u>\$65,000</u>

- (c)
1. A building purchased for speculative purposes is not a plant asset as it is not being used in normal operations. The building is more appropriately classified as an investment.
 2. The two-year insurance policy covering plant equipment is not a plant asset as it is not long-term in nature, not subject to depreciation, and has no physical substance. This policy is more appropriately classified as a current asset (prepaid insurance).
 3. The rights for the exclusive use of a process used in the manufacture of ballet shoes are not plant assets as they have no physical substance. The rights should be classified as an intangible asset.

TIME AND PURPOSE OF CASES

Case 10-1 (Time 20-25 minutes)

Purpose—the student discusses which expenditures related to purchasing land, constructing a building, and adding to the building should be capitalized and how each should be depreciated. When the land and building are sold, the student discusses how the book value is determined and how a gain would be reported.

Case 10-2 (Time 20-25 minutes)

Purpose—to provide the student with a situation involving the proper allocation of costs to self-constructed machinery. As part of this case, the student is required to discuss the propriety of including overhead costs in the construction costs. Finally, the proper accounting treatment accorded the development costs associated with the construction of a new machine must be evaluated.

Case 10-3 (Time 20-25 minutes)

Purpose—to provide the student with a problem involving the proper accounting treatment for interest costs. The student is required to assess the advantages and disadvantages of capitalizing interest. In addition, this problem should provide you with an opportunity to discuss the FASB pronouncement in this area.

Case 10-4 (Time 30-40 minutes)

Purpose—to provide the student a context to determine capitalization of interest and to explain in a memorandum the conceptual basis for interest capitalization.

Case 10-5 (Time 30-40 minutes)

Purpose—to provide the student with a context in which to examine differences in accounting for exchanges of similar and dissimilar assets.

Case 10-6 (Time 20-25 minutes)

Purpose—to provide the student with an understanding of the proper accounting treatment involving incidental costs associated with the purchase of a machine. The student must be able to defend why certain costs might be capitalized even though this valuation has no relationship to net realizable value. In addition, the costs may be charged off immediately for tax purposes and the student is required to analyze why these costs may still be capitalized for book purposes.

Case 10-7 (Time 20-25 minutes)

Purpose—to provide the student with a case involving allocation of costs between land and buildings, including ethical issues.

SOLUTIONS TO CASES

CASE 10-1

- (a) Expenditures should be capitalized when they benefit future periods. The cost to acquire the land should be capitalized and classified as land, a nondepreciable asset. Since tearing down the small factory is readying the land for its intended use, its cost is part of the cost of the land and should be capitalized and classified as land. As a result, this cost will not be depreciated as it would if it were classified with the capitalizable cost of the building.

Since rock blasting and removal is required for the specific purpose of erecting the building, these costs are part of the cost of the building and should be capitalized and classified with the capitalizable cost of the building. This cost should be depreciated over the estimated useful life of the building.

The road is a land improvement, and these costs should be capitalized and classified separately as a land improvement. This cost should be depreciated over its estimated useful life.

The added four stories is an addition, and its cost should be capitalized and classified with the capitalizable cost of the building. This cost should be depreciated over the remaining life of the original office building because that life is shorter than the estimated useful life of the addition.

- (b) A gain should be recognized on the sale of the land and building because income is realized whenever the earning process has been completed and a sale has taken place.

The net book value at the date of sale would be composed of the capitalized cost of the land, the land improvement, and the building, as determined above, less the accumulated depreciation on the land improvement and the building. The excess of the proceeds received from the sale over the net book value at the date of sale would be accounted for as a gain in continuing operations in the income statement.

CASE 10-2

- (a) Materials and direct labor used in the construction of the equipment definitely should be charged to the equipment account. It should be emphasized that no gain on self-construction should be recorded because such an approach violates the historical cost principle. The controversy centers on the assignment of indirect costs, called overhead or burden, consisting of power, heat, light, insurance, property taxes on factory buildings, etc. The suggested approaches are discussed below.

- (b) 1. Many believe that only the variable overhead costs that increase as a result of the construction should be assigned to the cost of the asset. This approach assumes that the company will have the same fixed costs regardless of whether the company constructs the asset or not, so to charge a portion of the fixed overhead costs to the equipment will usually decrease current expenses and consequently overstate income of the current period. Therefore, only the incremental costs should be charged.
2. Proponents of alternative (2) argue that such assets should be given the same treatment as inventory items and that all costs should be allocated thereto just as if saleable goods were being produced. They state that no special favor should be granted in the allocation of any cost, as long as sufficient facts are available to enable the allocation to be made. They argue that allocation of overhead to fixed assets is similar to allocation to joint products and byproducts, and should be made at regular rates. Of course, no item should be capitalized at an amount greater than that prevailing in the market.

CASE 10-2 (Continued)

- (c) Because costs of development are usually higher on the first few units, the additional costs of \$273,000 should be allocated to all four machines. If these costs are due to inefficiency and not development costs, the additional costs should be expensed.

CASE 10-3

Three approaches have been suggested to account for actual interest incurred in financing the construction or acquisition of property, plant, and equipment. One approach is to capitalize no interest during construction. Under this approach interest is considered a cost of financing and not a cost of construction. It is contended that if the company had used stock financing rather than debt financing, this expense would not have developed. The major arguments against this approach are that an implicit interest cost is associated with the use of cash regardless of the source.

A second approach is to capitalize the actual interest costs. This approach relies on the historical cost concept that only actual transactions are recorded. It is argued that interest incurred is as much a cost of acquiring the asset as the cost of the materials, labor, and other resources used. As a result, a company that uses debt financing will have an asset of higher cost than an enterprise that uses stock financing. The results achieved by this approach are held to be unsatisfactory by some because the cost of an asset should be the same whether cash, debt financing, or stock financing is employed.

A third approach is to charge construction with all costs of funds employed, whether identifiable or not. This approach is an economic cost approach that maintains that one part of the cost of construction is the cost of financing whether by debt, cash, or stock financing. An asset should be charged with all costs necessary to get it ready for its intended use. Interest, whether actual or imputed, is a cost of building, just as labor, materials, and overhead are costs. A major criticism of this approach is that imputation of a cost of equity capital is subjective and outside the framework of a historical cost system.

FASB Statement No. 34 requires that the lower of actual or avoidable interest cost be capitalized as part of the cost of acquiring an asset if a significant period of time is required to bring the asset to a condition or location necessary for its intended use. Interest costs would be capitalized (provided interest costs are being incurred) starting with the first expenditure related to the asset and would continue until the asset is substantially completed and ready for its intended use. Capitalization should occur only if the benefits exceed the costs.

CASE 10-4

To: Dee Pettepiece, President

From: Good Student, Manager of Accounting

Date: January 15, 2003

Subject: Capitalization of avoidable interest on the warehouse construction project

I am writing in response to your questions about the capitalized interest costs for the warehouse construction project. This brief explanation of my calculations should facilitate your understanding of these costs.

Generally, the accounting profession does not allow accrued interest to be capitalized along with an asset's cost. However, the FASB made an exception for interest costs incurred during construction. In order to qualify for this treatment, the constructed asset must require a period of time to become ready for its intended use.

Because interest capitalization is allowed in special circumstances only, the company must be especially careful to capitalize only that interest which is associated with the construction itself. Thus, the FASB issued a standard indicating how much interest may be associated with the construction, i.e., the lower of actual or avoidable interest.

On the surface, this standard seems simple. Actual interest incurred during the construction period equals all interest which accrued on any debt outstanding during that period. Avoidable interest equals the amount of interest which would not have been incurred if the construction project had not been undertaken. The amount of interest capitalized is the smaller of the two.

To determine the amount capitalized, we must calculate both the actual and the avoidable interest during 2002. Actual interest is computed by applying the interest rates of 12%, 10%, and 11% to their related debt. Thus, total actual interest for this period is \$600,000 (see Schedule #1).

CASE 10-4 (Continued)

Calculations for avoidable interest are more complex. First, interest can be capitalized only on the weighted-average amount of accumulated expenditures. Although total costs amounted to \$6,200,000 for the project, an average of only \$4,000,000 was outstanding during the period of construction.

Second, of the total \$5,400,000 debt outstanding during this period, only 2,000,000 of it can be associated with the actual construction project. Therefore, rather than arbitrarily choose the interest rate for one of the other loans, we must calculate the weighted-average interest rate. This rate is the ratio of accrued interest on the other loans to the total amount of their principal. For the \$2,000,000 balance of weighted-average accumulated expenditures, this interest rate equals 10.59% (see Schedule #2).

Third, we compute our avoidable interest as follows: calculate the interest on the loan directly associated with the construction. Apply the weighted-average interest rate to the remainder of the weighted-average accumulated expenditure. Now, add these products. Avoidable interest for 2002 amounts to \$451,800 (see Schedule #3).

So as not to overstate the interest associated with the construction, we capitalize the smaller of the two—\$451,800—along with the other construction costs.

I hope that this explanation has answered any questions you may have had about capitalized interest. If any further questions should arise, please contact me.

CASE 10-4 (Continued)

Schedule #1

Actual Interest

Construction loan	\$2,000,000 X 12% =	\$240,000
Short-term loan	\$1,400,000 X 10% =	140,000
Long-term loan	\$2,000,000 X 11% =	<u>220,000</u>
	Total	<u>\$600,000</u>

Schedule #2

Weighted-Average Interest Rate

Weighted-average interest rate computation	<u>Principal</u>	<u>Interest</u>
10% short-term loan	\$1,400,000	\$140,000
11% long-term loan	<u>2,000,000</u>	<u>220,000</u>
	<u>\$3,400,000</u>	<u>\$360,000</u>

$$\frac{\text{Total Interest}}{\text{Total Principal}} = \frac{\$360,000}{\$3,400,000} = 10.59\%$$

Schedule #3

Avoidable Interest

<u>Weighted-Average Accumulated Expenditures</u>	X	<u>Interest Rate</u>	=	<u>Avoidable Interest</u>
\$2,000,000		12%		\$240,000
2,000,000		10.59%		<u>211,800</u>
				<u>\$451,800</u>

Schedule #4

Interest Capitalized

Because avoidable interest is lower than actual interest, use avoidable interest.

Cost	\$6,200,000
Interest capitalized	<u>451,800</u>
Total cost	<u>\$6,651,800</u>

CASE 10-5

(a) **Client A**

Treatment if Dissimilar

If the assets are considered dissimilar, Client A would recognize a gain of \$35,000 on the exchange. The basis of the asset acquired would be \$125,000. The entry would be as follows:

Machinery	125,000	
Accumulated Depreciation	40,000	
Cash		30,000
Gain on Exchange of Assets		35,000
Machinery		100,000

(b) Treatment if Similar

If the assets are considered similar, Client A would be prohibited from recognizing a \$35,000 gain on the exchange. This is because he paid rather than received cash. The new asset on his books would have a basis of \$90,000 (\$125,000 less the \$35,000 unrecognized gain). The entry would be as follows:

Machinery	90,000	
Accumulated Depreciation	40,000	
Cash		30,000
Machinery		100,000

(c) Memo to the Controller:

TO: The Controller

RE: Exchanges of Assets

Financial Statement effect of treating the assets as dissimilar as opposed to similar

1. The income statement will reflect a before tax gain of \$35,000. This gain will increase the reported income on this year's financial statements. Future income statements will probably show a higher depreciation deduction because of an increased book value of the new asset. Thus future income statements will reflect lower income.
2. The current balance sheet will show a \$35,000 higher value for fixed assets, a higher liability for taxes payable and higher retained earnings if the assets are treated as dissimilar. This difference will disappear gradually as the asset is depreciated.

CASE 10-5 (Continued)

(d) **Client B**

Treatment if Dissimilar

If these assets are considered dissimilar, the full \$55,000 gain would be recognized on this year's income statement. The new asset would go on the books at its fair market value. The entry is as follows:

Machinery	95,000	
Accumulated Depreciation	80,000	
Cash	30,000	
Machinery		150,000
Gain on Exchange		55,000

(e) Treatment if Similar

If these assets are considered similar a gain will be recognized in the ratio of cash received. In this case, a gain of \$13,200 will be recognized ($30,000/125,000$ times the gain of \$55,000). The unrecognized portion of \$41,800 will be used to reduce the basis of the new asset. The entry to record the exchange is as follows:

Machinery	53,200	
Accumulated Depreciation	80,000	
Cash	30,000	
Machinery		150,000
Gain on Exchange		13,200

(f) Memo to the Controller:

TO: The Controller

RE: Exchanges of Assets

Financial Statement effect of treating the assets as dissimilar as opposed to similar.

TO: The Controller

RE: Asset Exchanges—Effect of similar vs. dissimilar

1. The income statement will reflect a before tax gain of \$55,000 if the assets are treated as dissimilar. This gain will increase the reported income on this year's financial statements. Future income statements will probably show a higher depreciation deduction because of an increased book value of the new asset. Thus future income statements will reflect lower income. The reported gain will only be \$13,200 if the assets are treated as similar.
2. The current balance sheet will show a \$41,800 higher value for fixed assets, a higher liability for taxes payable and higher retained earnings if the assets are treated as dissimilar. This difference will disappear gradually as the asset is depreciated.

CASE 10-6

In general, the inclusion of the \$7,500 as part of the cost of the machine is justified because the primary purpose in accounting for plant asset costs is to secure an equitable allocation of incurred costs over the period of time when the benefits are being received from the use of the assets. These costs—both the \$40,000 and the \$7,500—are much like prepaid expenses, to be matched against the revenue emerging through their use. The purpose of accounting for plant assets then is not primarily aimed at securing sound valuation of the asset for balance sheet purposes, but proper determination of net income through matching of incurred costs with revenue resulting from use of the assets.

1. It may be true that these installation costs could not be recovered if the machine were to be sold. This is not important, however, because presumably the machine was acquired to be used, not to be sold. Assuming approximately equal utilization of the machine in each of the ten years, the owner properly could allocate \$4,750 (10% of \$47,500) against each year's operations. If the owner's suggestion was followed, the first year would be charged with \$11,500 (\$7,500 plus 10% of \$40,000), and the following nine years with \$4,000 per year, hence overstating expenses by \$6,750 the first year and understating expenses by \$750 per year for the succeeding nine years. This could hardly be defended as proper matching of costs and revenue.
2. Again, the purpose of accounting for plant assets is not to arrive at an approximation of current value of the assets each year over the life of the assets. However, even if this were an objective, the question of which method would come closer to stating current market value at some later date would revolve around the general trend of the price level over the years involved.
3. Two factors are involved here. First, the \$7,500 is not a proper deduction under federal income tax regulations. If it were deducted in the year of acquisition, and a correction were made in a later year on review of the return, additional tax plus interest would have to be paid. In the second place, even if the \$7,500 could properly be deducted, there would be no total tax saving over the years unless the tax rates applicable to the business were reduced during the following years. There is some value to taking the \$7,500 deduction right now because of the present value of money. If the rates increased, there would be an increase in total taxes, due to higher rates applicable during the period when depreciation deductions would be reduced. However, generally accepted accounting principles are not determined by income tax effects. In many instances, GAAP requires different accounting treatment of an item than the IRS Revenue Code does.

CASE 10-7

- (a) If the land is undervalued so that a higher depreciation expense is assigned to the building, management interests are served. The lower net income and reduced tax liability save cash to be used for management purposes. By contrast, stockholders and potential investors are misled by the inaccurate cost values. They will have been deprived of information concerning the significant impact of changing real estate values on this holding.
- (b) The ethical question centers on whether to allocate the cost of the purchase on the fair market value of land and building or whether to determine the allocation in view of the potential effect on net income. Phillips faces an ethical dilemma if Smith will not accept Phillips' position. Phillips should specify alternative course of action and carefully assess the consequences of each before deciding what to do.
- (c) For basket (lump sum) purchases of land and buildings, costs should be allocated on the ratio of fair market values of the land and buildings.

FINANCIAL STATEMENT ANALYSIS CASE

JOHNSON & JOHNSON

- (a) The cost of buildings and building equipment at the end of 2001 was \$3,911,000,000.
- (b) As indicated in footnote number one to the financial statements, the company utilizes the straight-line method for financial statement purposes for all additions to property, plant, and equipment. Given that straight-line depreciation provides a lower charge for depreciation as compared to an accelerated method in the early years of an asset's life, the accounting appears to be less conservative.

- (c) The amount of actual interest expense in 2001 can be computed as follows:

Interest, net of portion capitalized (per cash flow statement)	\$185,000,000
Capitalized interest (per note 3)	<u>95,000,000</u>
Actual interest	<u>\$280,000,000</u>

- (d) Free cash flow is defined as net cash flows provided by operating activities less capital expenditures and dividends.

Free cash flow is the amount of discretionary cash flow a company has for purchasing additional investments, retiring its debt, purchasing treasury stock, or simply adding to its liquidity. In Johnson & Johnson's situation, free cash flow is computed as follows:

Net cash flows from operating activities	\$8,864,000,000
Less: Additions to property, plant, and equipment	1,731,000,000
Dividends	<u>2,047,000,000</u>
Free cash flow	<u>\$5,086,000,000</u>

As indicated from the above computation, Johnson & Johnson has considerable free cash flows. The company has excellent financial flexibility.

FINANCIAL STATEMENT ANALYSIS CASE (Continued)

For example, the company is able to pay its dividends without resorting to external financing. Secondly, even if operations decline, it appears that the company will be able to fund additions to property, plant, and equipment. Thirdly, the company is using its free cash flow to expand its operations by acquiring new businesses.

RESEARCH CASE

- (a) The EITF stands for the Emerging Issues Task Force. The EITF is a unit of the Financial Accounting Standards Board. The EITF has as its mission to work out the conventions of cutting-edge accounting issues. The EITF has no binding enforcement power, but, by providing a forum to debate issues, it helps create consistent standards, which in turn allows investors to compare companies in the same industry.
- (b) The issue involves exchanges of similar network capacity. Companies engaged in such deals count as revenue the money received from the company on the other end of the deal. (In general, in transactions involving leased capacity, the companies booked the revenue over the life of the contract.) Some of these companies then treated their own purchases as capital expenditures, which aren't run through the income statement; instead, the spending led to the addition of assets on the balance sheet. Mr. Lucas and others view an exchange of similar network capacity as equivalent to trading a blue truck for a red truck; it shouldn't boost a company's revenue.
- (c) Until recently the swaps of network capacity were not that common. Not until companies raced to expand their networks did the swaps become controversial. As a result, the exchanges of network capacity never arose as a subject at this task force, according to its head, Timothy Lucas. "I don't know what it looked like to people at the time," Mr. Lucas says. "It is obvious in hindsight that [the accounting for such exchanges of capacity] was something that raises questions" that should have been debated publicly, he says. Generally, as a new industry evolves, the big accounting firms either approach the SEC or the EITF directly to establish a consensus on proper accounting standards. In the early years of the telecom boom, the SEC was very involved in working with the industry on accounting standards involving one-way leases of network capacity, an SEC spokesman confirmed the assertion of Mr. Lucas, of the EITF, that the SEC, like the auditing firms, hadn't referred swap-related accounting issues to the EITF for discussion.

PROFESSIONAL SIMULATION

Measurement

Historical cost is measured by the cash or cash-equivalent price of obtaining the asset and bringing it to the location and condition for its intended use. For Norwel, this is:

Price	\$12,000
Tax (\$12,000 X .05)	600
Platform	<u>1,400</u>
Total	<u>\$14,000</u>

Journal Entry

June 5, 2003

Machine	14,000	
Cash		14,000
Depreciation Expense	1,500	
Accumulated Depreciation		1,500*

*Depreciable base: $(\$14,000 - \$2,000) = \$12,000$

Depreciation expense: $\$12,000 \div 4 = \$3,000$ per year

2003: $\frac{1}{2}$ year = $\$3,000 \times .50 = \$1,500$

Financial Statements

The amount reported on the balance sheet is the cost of the asset less accumulated depreciation:

Machine	\$14,000
Accumulated depreciation	<u>(4,500)</u>
Book value	<u>\$ 9,500</u>

PROFESSIONAL SIMULATION (Continued)

Analysis

The income effect is a gain or loss, determined by comparing the book value of the asset to the disposal value:

Book value	
Cost	\$14,000
Accumulated depreciation	<u>6,000</u>
Book value	8,000
Cash received for machine and platform	<u>7,000</u>
Pretax loss	<u>\$ 1,000</u>

CHAPTER 11

Depreciation, Impairments, and Depletion

ASSIGNMENT CLASSIFICATION TABLE

Topics	Questions	Brief			Cases
		Exercises	Exercises	Problems	
1. Depreciation methods; meaning of depreciation; choice of depreciation methods.	1, 2, 3, 4, 5, 6, 14, 20, 21, 22, 23		1, 2, 3, 4, 5, 8, 14, 15	1, 2, 3	1, 2, 3, 4, 5
2. Computation of depreciation.	7, 8, 9, 10, 14	1, 2, 3, 4	1, 2, 3, 4, 5, 6, 7, 10, 14, 15	1, 2, 3, 4, 11, 12	1, 2, 3
3. Depreciation base.	6	5	8, 17	1, 2, 3	3
4. Errors; changes in estimate.	13	7	11, 12, 13, 14	3, 4	3
5. Depreciation of partial periods.	15	3, 4	3, 4, 5, 7, 15	1, 2, 3, 8, 10, 11	
6. Composite method.	11, 12	6	9		2
7. Impairment of value.	16, 17, 18, 19	8	16, 17, 18	9	
8. Depletion.	22, 23, 24, 25, 26, 27	9	19, 20, 21, 22, 23	5, 6, 7	
9. Ratio analysis.	28	10	24		
*10. Tax depreciation (MACRS).	29	11	25, 26	12	

*This material is covered in an Appendix to the chapter.

ASSIGNMENT CHARACTERISTICS TABLE

Item	Description	Level of Difficulty	Time (minutes)
E11-1	Depreciation computations—SL, SYD, DDB.	Simple	15-20
E11-2	Depreciation—conceptual understanding.	Moderate	20-25
E11-3	Depreciation computations—SYD, DDB—partial periods.	Simple	15-20
E11-4	Depreciation computations—five methods.	Simple	15-25
E11-5	Depreciation computations—four methods.	Simple	20-25
E11-6	Depreciation computations—five methods, partial periods.	Moderate	25-35
E11-7	Different methods of depreciation.	Simple	20-30
E11-8	Depreciation computation—replacement, non-monetary exchange.	Moderate	20-25
E11-9	Composite depreciation.	Simple	15-20
E11-10	Depreciation computations—SYD.	Simple	10-15
E11-11	Depreciation—change in estimate.	Simple	10-15
E11-12	Depreciation computation—addition, change in estimate.	Simple	20-25
E11-13	Depreciation—replacement, change in estimate.	Simple	15-20
E11-14	Error analysis and depreciation, SL and SYD.	Moderate	20-25
E11-15	Depreciation for fractional periods.	Moderate	25-35
E11-16	Impairment.	Simple	10-15
E11-17	Impairment.	Simple	15-20
E11-18	Impairment.	Simple	15-20
E11-19	Depletion computations—timber.	Simple	15-20
E11-20	Depletion computations—oil.	Simple	10-15
E11-21	Depletion computations—timber.	Simple	15-20
E11-22	Depletion computations—mining.	Simple	15-20
E11-23	Depletion computations—minerals.	Simple	15-20
E11-24	Ratio analysis.	Moderate	15-20
*E11-25	Book versus tax (MACRS) depreciation.	Moderate	20-25
*E11-26	Book versus tax (MACRS) depreciation.	Moderate	15-20
P11-1	Depreciation for partial periods—SL, SYD, and DDB.	Simple	25-30
P11-2	Depreciation for partial periods—SL, Act., SYD, and DDB.	Simple	25-35
P11-3	Depreciation—SYD, Act., SL, and DDB.	Moderate	40-50
P11-4	Depreciation and error analysis.	Complex	45-60
P11-5	Depletion and depreciation—mining.	Moderate	25-30
P11-6	Depletion, timber, and extraordinary loss.	Moderate	25-30
P11-7	Natural resources, timber.	Moderate	25-35
P11-8	Comprehensive fixed asset problem.	Moderate	25-35
P11-9	Impairment.	Moderate	15-25
P11-10	Comprehensive depreciation computations.	Complex	45-60

ASSIGNMENT CHARACTERISTICS TABLE (Continued)

Item	Description	Level of Difficulty	Time (minutes)
P11-11	Depreciation for partial periods—SL, Act., SYD, and DDB.	Moderate	30-35
*P11-12	Depreciation—SL, DDB, SYD, Act., and MACRS.	Moderate	25-35
C11-1	Depreciation basic concepts.	Moderate	25-35
C11-2	Unit, group, and composite depreciation.	Simple	20-25
C11-3	Depreciation—strike, units-of-production, obsolescence.	Moderate	25-35
C11-4	Depreciation concepts—written component.	Moderate	25-35
C11-5	Depreciation method choice—ethics	Moderate	20-25

ANSWERS TO QUESTIONS

1. The differences among the terms depreciation, depletion, and amortization are that they imply a cost allocation of different types of assets. Depreciation is employed to indicate that tangible plant assets have decreased in service potential. Where natural resources (wasting assets) such as timber, oil, coal, and lead are involved, the term depletion is used. The expiration of intangible assets such as patents or copyrights is referred to as amortization.
2. The factors relevant in determining the annual depreciation for a depreciable asset are the initial recorded amount (cost), estimated salvage value, estimated useful life, and depreciation method.

Assets are typically recorded at their acquisition cost, which is in most cases objectively determinable. But cost assignments in other cases—"basket purchases" and the selection of an implicit interest rate in asset acquisition under deferred-payment plans—may be quite subjective, involving considerable judgment.

The salvage value is an estimate of an amount potentially realizable when the asset is retired from service. The estimate is based on judgment and is affected by the length of the useful life of the asset.

The useful life is also based on judgment. It involves selecting the "unit" of measure of service life and estimating the number of such units embodied in the asset. Such units may be measured in terms of time periods or in terms of activity (for example, years or machine hours). When selecting the life, one should select the lower (shorter) of the physical life or the economic life. Physical life involves wear and tear and casualties; economic life involves such things as technological obsolescence and inadequacy.

Selecting the depreciation method is generally a judgment decision, but a method may be inherent in the definition adopted for the units of service life, as discussed earlier. For example, if such units are machine hours, the method is a function of the number of machine hours used during each period. A method should be selected that will best measure the portion of services expiring each period. Once a method is selected, it may be objectively applied by using a predetermined, objectively derived formula.

3. Accounting depreciation is defined as an accounting process of allocating the costs of tangible assets to expense in a systematic and rational manner to the periods expected to benefit from the use of the asset. Thus, depreciation is not a matter of valuation but a means of cost allocation.
4. The carrying value of a fixed asset is its cost less accumulated depreciation. If the company estimates that the asset will have an unrealistically long life, periodic depreciation charges, and hence accumulated depreciation, will be lower. As a result the carrying value of the asset will be higher.
5. A change in the amount of annual depreciation recorded does not change the facts about the decline in economic usefulness. It merely changes reported figures. Depreciation in accounting consists of allocating the cost of an asset over its useful life in a systematic and rational manner. Abnormal obsolescence, as suggested by the plant manager, would justify more rapid depreciation, but increasing the depreciation charge would not necessarily result in funds for replacement. It would not increase revenue but simply make reported income lower than it would have been, thus preventing overstatement of net income.

Recording depreciation on the books does not set aside any assets for eventual replacement of the depreciated assets. Fund segregation can be accomplished but it requires additional managerial action. Unless an increase in depreciation is accompanied by an increase in sales price of the product, or unless it affects management's decision on dividend policy, it does not

Questions Chapter 11 (Continued)

affect funds. Ordinarily higher depreciation will not lead to higher sales prices and thus to more rapid “recovery” of the cost of the asset, and the economic factors present would have permitted this higher price regardless of the excuse given or the particular rationalization used. The price could have been increased without a higher depreciation charge.

The funds of a firm operating profitably do increase, but these may be used as working capital policy may dictate. The measure of the increase in these funds from operations is not merely net income, but that figure plus charges to operations which did not require working capital, less credits to operations which did not create working capital. The fact that net income alone does not measure the increase in funds from profitable operations leads some non-accountants to the erroneous conclusion that a fund is being created and that the amount of depreciation recorded affects the fund accumulation.

Acceleration of depreciation for purposes of income tax calculation stands in a slightly different category, since this is not merely a matter of recordkeeping. Increased depreciation will tend to postpone tax payments, and thus temporarily increase funds (although the liability for taxes may be the same or even greater in the long run than it would have been) and generate gain to the firm to the extent of the value of use of the extra funds.

6. Assets are retired for one of two reasons: physical factors or economic factors—or a combination of both. Physical factors are the wear and tear, decay, and casualty factors which hinder the asset from performing indefinitely. Economic factors can be interpreted to mean any other constraint that develops to hinder the service life of an asset. Some accountants attempt to classify the economic factors into three groups: inadequacy, supersession, and obsolescence. Inadequacy is defined as a situation where an asset is no longer useful to a given enterprise because the demands of the firm have increased. Supersession is defined as a situation where the replacement of an asset occurs because another asset is more efficient and economical. Obsolescence is the catchall term that encompasses all other situations and is sometimes referred to as the major concept when economic factors are considered.
7. Before the amount of the depreciation charge can be computed, three basic questions must be answered:
 1. What is the depreciation base to be used for the asset?
 2. What is the asset’s useful life?
 3. What method of cost apportionment is best for this asset?

8. Cost	\$600,000	Cost	\$600,000
Depreciation rate	<u>30%*</u>	Depreciation for 2003	<u>(180,000)</u>
Depreciation for 2003	<u>\$180,000</u>	Undepreciated cost in 2004	420,000
2003 Depreciation	\$180,000	Depreciation rate	<u>30%</u>
2004 Depreciation	<u>126,000</u>	Depreciation for 2004	<u>\$126,000</u>
Accumulated depreciation			
at December 31, 2004	<u>\$306,000</u>		

* $(1 \div 5) \times 150\%$

Questions Chapter 11 (Continued)

9. Depreciation base:

Cost	\$120,000	Straight-line, $\$105,000 \div 20 =$	\$5,250
Salvage	<u>(15,000)</u>		
	<u>\$105,000</u>	Units of output, $\frac{\$105,000}{84,000}$	X 20,000 = \$25,000
		Working hours, $\frac{\$105,000}{42,000}$	X 14,300 = \$35,750
		Sum-of-the-years'-digits, $\$105,000 \times 20/210^* =$	\$10,000
		Declining-balance, $\$120,000 \times 10\% =$	\$12,000

$$\frac{*20(20 + 1)}{2} = 210$$

10. From a conceptual point of view, the method which best matches revenue and expenses should be used; in other words, the answer depends on the decline in the service potential of the asset. If the service potential decline is faster in the earlier years, an accelerated method would seem to be more desirable. On the other hand, if the decline is more uniform, perhaps a straight-line approach should be used. Many firms adopt depreciation methods for more pragmatic reasons. Some companies use accelerated methods for tax purposes but straight-line for book purposes because a higher net income figure is shown on the books in the earlier years, but a lower tax is paid to the government. Others attempt to use the same method for tax and accounting purposes because it eliminates some recordkeeping costs. Tax policy sometimes also plays a role.

11. The composite method is appropriate for a company which owns a large number of heterogeneous plant assets and which would find it impractical to keep detailed records for them.

The principal advantage is that it is not necessary to keep detailed records for each plant asset in the group. The principle disadvantage is that after a period of time the book value of the plant assets may not reflect the proper carrying value of the assets. Inasmuch as the accumulated depreciation account is debited or credited for the difference between the cost of the asset and the cash received from the retirement of the asset (i.e., no gain or loss on disposal is recognized), the accumulated depreciation account is self-correcting over time.

12. Cash	16,000	
Accumulated Depreciation—Plant Assets	34,000	
Plant Assets		50,000

No gain or loss is recognized under the composite method.

13. Original estimate: $\$2,400,000 \div 50 = \$48,000$ per year
 Depreciation to January 1, 2004: $\$48,000 \times 24 = \$1,152,000$
 Depreciation in 2004 $(\$2,400,000 - \$1,152,000) \div 15 \text{ years} = \$83,200$

14. No, depreciation does not provide cash; revenues do. The funds for the replacement of the assets come from the revenues; without the revenues no income materializes and no cash inflow results. A separate decision must be made by management to set aside cash to accumulate asset replacement funds. Depreciation is added to net income on the statement of cash flows (indirect method) because it is a noncash expense, not because it is a cash inflow.

Questions Chapter 11 (Continued)

15. 25% straight-line rate $\times 2 = 50\%$ double-declining rate
 $\$6,000 \times 50\% = \$3,000$ Depreciation for first full year.
 $\$3,000 \times 6/12 = \$1,500$ Depreciation for half a year (first year), 2004
 $\$4,500 \times 50\% = \$2,250$ Depreciation for 2005.
16. The accounting standards require that if events or changes in circumstances indicate that the carrying amount of such assets may not be recoverable, then the carrying amount of the asset should be assessed. The assessment or review takes the form of a recoverability test that compares the sum of the expected future cash flows from the asset (undiscounted) to the carrying amount. If the cash flows are less than the carrying amount, the asset has been impaired. The impairment loss is measured as the amount by which the carrying amount exceeds the fair value of the asset. The fair value of assets is measured by their market value if an active market for them exists. If no market price is available, the present value of the expected future net cash flows from the asset may be used.
17. Under U.S. GAAP, impairment losses on assets held for use may not be restored.
18. An impairment is deemed to have occurred if, in applying the recoverability test, the carrying amount of the asset exceeds the expected future net cash flows from the asset. In this case, the expected future net cash flows of \$705,000 exceed the carrying amount of the equipment of \$700,000 so that no impairment is assumed to have occurred; thus no measurement of the loss is made or recognized even though the fair value is \$590,000.
19. Impairment losses are reported as part of income from continuing operations, generally in the "Other expenses and losses" section. Impairment losses (and recovery of losses for assets to be disposed of) are similar to other costs that would flow through operations. Thus, gains (recoveries of losses) on assets to be disposed of should be reported as part of income from continuing operations.
20. In a decision to replace or not to replace an asset, the undepreciated cost of the old asset is not a factor to be considered. Therefore, the decision to replace plant assets should not be affected by the amount of depreciation that has been recorded. The relative efficiency of new equipment as compared with that presently in use, the cost of the new facilities, the availability of capital for the new asset, etc., are the factors entering into the decision. Normally, the fact that the asset had been fully depreciated through the use of some accelerated depreciation method, although the asset was still in use, should not cause management to decide to replace the asset. If the new asset under consideration for replacement was not any more efficient than the old, or if it cost a good deal more in relationship to its efficiency, it is illogical for management to replace it merely because all or the major portion of the cost had been charged off for tax and accounting purposes.

If depreciation rates were higher it might be true that a business would be financially more able to replace assets, since during the earlier years of the asset's use a larger portion of its cost would have been charged to expense, and hence during this period a smaller amount of income tax paid. By a sale of the old asset, which might result in a capital gain, and purchase of a new asset, the higher depreciation charge might be continued for tax purposes. However, if the asset were traded in, having taken higher depreciation would result in a lower basis for the new asset.

It should be noted that expansion (not merely replacement) might be encouraged by increased depreciation rates. Management might be encouraged to expand, believing that in the first few years when they are reasonably sure that the expanded facilities will be profitable, they can charge off a substantial portion of the cost as depreciation for tax purposes. Similarly, since a replacement involves additional capital outlays, the tax treatment may have some influence.

Also, because of the inducement to expand or to start new businesses, there may be a tendency in the economy as a whole for the accounting and tax treatment of the cost of plant assets to influence the retirement of old plant assets.

Questions Chapter 11 (Continued)

It should be noted that to the extent that increased depreciation causes management to alter its decision about replacement, and to the extent it results in capital gains at the time of disposition, it is not matching costs and revenues in the closest possible manner.

21. In lieu of recording depreciation on replacement costs, management might elect to make annual appropriations of retained earnings in contemplation of replacing certain facilities at higher price levels. Such appropriations might help to eliminate misunderstandings as to amounts available for distribution as dividends, higher wages, bonuses, or lower sales prices. The need for these appropriations can be explained by supplementary financial schedules, explanations, and footnotes accompanying the financial statements. (However, neither depreciation charges nor appropriations of retained earnings result in the accumulation of funds for asset replacement. Fund accumulation is a result of profitable operations and appropriate funds management.)
22. (a) Depreciation and cost depletion are similar in the accounting sense in that:
1. The cost of the asset is the starting point from which computation of the amount of the periodic charge to operations is made.
 2. The estimated life is based on economic or productive life.
 3. The accumulated total of past charges to operations is deducted from the original cost of the asset on the balance sheet.
 4. When output methods of computing depreciation charges are used, the formulas are essentially the same as those used in computing depletion charges.
 5. Both represent an apportionment of cost under the process of matching costs with revenue.
 6. Assets subject to either are reported in the same classification on the balance sheet.
 7. Appraisal values are sometimes used for depreciation while discovery values are sometimes used for depletion.
 8. Residual value is properly recognized in computing the charge to operations.
 9. They may be included in inventory if the related asset contributed to the production of the inventory.
 10. The rates may be changed upon revision of the estimated productive life used in the original rate computations.
- (b) Depreciation and cost depletion are dissimilar in the accounting sense in that:
1. Depletion is almost always based on output whereas depreciation is usually based on time.
 2. Many formulas are used in computing depreciation but only one is used to any extent in computing depletion.
 3. Depletion applies to natural resources while depreciation applies to plant and equipment.
 4. Depletion refers to the physical exhaustion or consumption of the asset while depreciation refers to the wear, tear, and obsolescence of the asset.
 5. Under statutes which base the legality of dividends on accumulated earnings, depreciation is usually a required deduction but depletion is usually not a required deduction.
 6. The computation of the depletion rate is usually much less precise than the computation of depreciation rates because of the greater uncertainty in estimating the productive life.
 7. A difference that is temporary in nature arises from the timing of the recognition of depreciation under conventional accounting and under the Internal Revenue Code, and it results in the recording of deferred income taxes. On the other hand, the difference between cost depletion under conventional accounting and its counterpart, percentage depletion, under the Internal Revenue Code is permanent and does not require the recording of deferred income taxes.
23. Cost depletion is the procedure by which the capitalized costs, less residual land values, of a natural resource are systematically charged to operations. The purpose of this procedure is to match the cost of the resource with the revenue it generates. The usual method is to divide the total cost less residual value by the estimated number of recoverable units to arrive at a depletion charge for each unit removed. A change in the estimate of recoverable units will necessitate a revision of the unit charge.

Questions Chapter 11 (Continued)

Percentage depletion is the procedure, authorized by the Internal Revenue Code, by which a certain percentage of gross income is charged to operations is arriving at taxable income. Percentage depletion is not considered to be a generally accepted accounting principle because it is not related to the cost of the asset and is allowed even though the property is fully depleted under cost depletion accounting. Applicable rates, ranging from 5% to 22% of gross income, are specified for nearly all natural resources. The total amount deductible in a given year may not be less than the amount computed under cost depletion procedures, and it may not exceed 50% of taxable income from the property before the depletion deduction. Cost depletion differs from percentage depletion in that cost depletion is a function of production whereas percentage depletion is a function of income.

Percentage depletion has arisen, in part, from the difficulty of valuing the natural resource or determining the discovery value of the asset and of determining the recoverable units. Although other arguments have been advanced for maintaining percentage depletion, a primary argument is its value in encouraging the search for additional resources. It is deemed to be in the national interest to provide an incentive to the continuing search for natural resources. As noted in the textbook, percentage depletion is no longer permitted for many enterprises.

24. This method does not necessarily measure the proper share of the cost of land to be charged to expense for depletion and, in fact, may ultimately exceed the actual cost of the property.
25. The maximum permissible is the amount of accumulated net income (after depletion) plus the amount of depletion charged. This practice can be justified for companies that expect to extract natural resources and not purchase additional properties. In effect, such companies are distributing gradually to stockholders their original investments.
26. Reserve recognition accounting (RRA) is the method that was proposed by the SEC to account for oil and gas resources. Proponents of this approach argue that oil and gas should be valued at the date of discovery. The value of the reserve still in the ground is estimated and this amount, appropriately discounted, is reported on the balance sheet as "oil deposits."

The costs of exploration incurred each year are deducted from the estimated reserves discovered during the same period with the difference probably being reported as income.

The oil companies are concerned because the valuation issue is extremely tenuous. For example, to properly value the reserves, the following must be estimated: (1) amount of the reserves, (2) future production costs, (3) periods of expected disposal, (4) discount rate, and (5) the selling price.

27. Using full-cost accounting, the cost of unsuccessful ventures as well as those that are successful are capitalized, because a cost of drilling a dry hole is a cost that is needed to find the commercially profitable wells. Successful efforts accounting capitalizes only those costs related to successful projects. They contend that to measure cost and effort accurately for a single property unit, the only measure is in terms of the cost directly related to that unit. In addition, it is argued that full-cost is misleading because capitalizing all costs will make an unsuccessful company over a short period of time show no less income than does one that is successful.
28. Asset turnover ratio:

$$\frac{\$39.2}{\$21.8} = 1.8 \text{ times}$$

Rate of return on assets:

$$\frac{\$1.4}{\$21.8} = 6.4\%$$

Questions Chapter 11 (Continued)

- *29. The modified accelerated cost recovery system (MACRS) has been adopted by the Internal Revenue Service. It applies to depreciable assets acquired in 1987 and later. MACRS eliminates the need to determine each asset's useful life. The selection of a depreciation method and a salvage value is also unnecessary under MACRS. The taxpayer determines the recovery deduction for an asset by applying a statutory percentage to the historical cost of the property. MACRS was adopted to permit a faster write-off of tangible assets so as to provide additional tax incentives and to simplify the depreciation process. The simplification should end disputes related to estimated useful life, salvage value, and so on.

SOLUTIONS TO BRIEF EXERCISES

BRIEF EXERCISE 11-1

$$2004: \frac{(\$42,000 - \$2,000) \times 23,000}{160,000} = \underline{\$5,750}$$

$$2005: \frac{(\$42,000 - \$2,000) \times 31,000}{160,000} = \underline{\$7,750}$$

BRIEF EXERCISE 11-2

$$(a) \frac{\$60,000 - \$6,000}{8} = \underline{\$6,750}$$

$$(b) \frac{\$60,000 - \$6,000}{8} \times 4/12 = \underline{\$2,250}$$

BRIEF EXERCISE 11-3

$$(a) (\$60,000 - \$6,000) \times 8/36 = \underline{\$12,000}$$

$$(b) [(\$60,000 - \$6,000) \times 8/36] \times 9/12 = \underline{\$9,000}$$

BRIEF EXERCISE 11-4

$$(a) \$60,000 \times 25\% = \underline{\$15,000}$$

$$(b) (\$60,000 \times 25\%) \times 3/12 = \underline{\$3,750}$$

BRIEF EXERCISE 11-5

Depreciable Base = $(\$25,000 + \$200 + \$125 + \$500 + \$475) - \$3,000 = \$23,300$.

BRIEF EXERCISE 11-6

<u>Asset</u>	<u>Depreciation Expense</u>
A	$(\$70,000 - \$7,000)/10 = \$6,300$
B	$(\$50,000 - \$10,000)/5 = 8,000$
C	$(\$82,000 - \$4,000)/12 = 6,500$
	<u>\$20,800</u>

Composite rate = $\$20,800/\$202,000 = 10.3\%$

Composite life = $\$181,000/\$20,800 = 8.7$ years

BRIEF EXERCISE 11-7

Annual depreciation expense: $(\$7,000 - \$1,000)/5 = \underline{\$1,200}$

Book value, 1/1/05: $\$7,000 - (2 \times \$1,200) = \underline{\$4,600}$

Depreciation expense, 2005: $(\$4,600 - \$500)/2 = \underline{\$2,050}$

BRIEF EXERCISE 11-8

Recoverability test:

Future net cash flows (\$500,000) < Carrying amount (\$540,000);
therefore, the asset has been impaired.

Journal entry:

Loss on Impairment	140,000	
Accumulated Depreciation.....		140,000
(\$540,000 – \$400,000)		

BRIEF EXERCISE 11-9

Inventory	72,625	
Accumulated Depletion		72,625

$$\frac{\$400,000 + \$100,000 + \$75,000 - \$160,000}{4,000} = \underline{\$103.75 \text{ per ton}}$$

$$700 \times \$103.75 = \underline{\$72,625}$$

BRIEF EXERCISE 11-10

(a) Asset turnover ratio:

$$\frac{\$6,664}{\frac{\$5,196 + \$5,927}{2}} = 1.20 \text{ times}$$

(b) Profit margin on sales:

$$\frac{\$649}{\$6,664} = 9.74\%$$

(c) Rate of return on asset:

1. $1.20 \times 9.74\% = 11.7\%$

2. $\frac{\$649}{\frac{\$5,196 + \$5,927}{2}} = 11.7\%$

***BRIEF EXERCISE 11-11**

2005:	\$40,000 X 20%	=	\$ 8,000
2006:	\$40,000 X 32%	=	12,800
2007:	\$40,000 X 19.2%	=	7,680
2008:	\$40,000 X 11.52%	=	4,608
2009:	\$40,000 X 11.52%	=	4,608
2010:	\$40,000 X 5.76%	=	<u>2,304</u>
			<u>\$40,000</u>

SOLUTIONS TO EXERCISES

EXERCISE 11-1 (15-20 minutes)

- (a) Straight-line method depreciation for each of Years 1 through 3 =

$$\frac{\$469,000 - \$40,000}{12} = \underline{\$35,750}$$

- (b) Sum-of-the-Years'-Digits = $\frac{12 \times 13}{2} = 78$

$$12/78 \times (\$469,000 - \$40,000) = \underline{\$66,000} \quad \text{depreciation Year 1}$$

$$11/78 \times (\$469,000 - \$40,000) = \underline{\$60,500} \quad \text{depreciation Year 2}$$

$$10/78 \times (\$469,000 - \$40,000) = \underline{\$55,000} \quad \text{depreciation Year 3}$$

- (c) Double-Declining Balance method depreciation rate. $\frac{100\%}{12} \times 2 = 16.67\%$

$$\$469,000 \times 16.67\% = \underline{\$78,182} \quad \text{depreciation Year 1}$$

$$(\$469,000 - \$78,182) \times 16.67\% = \underline{\$65,149} \quad \text{depreciation Year 2}$$

$$(\$469,000 - \$78,182 - \$65,149) \times 16.67\% = \underline{\$54,289} \quad \text{depreciation Year 3}$$

EXERCISE 11-2 (20-25 minutes)

- (a) If there is any salvage value and the amount is unknown (as is the case here), the cost would have to be determined by looking at the data for the double-declining balance method.

$$\frac{100\%}{5} = 20\%; 20\% \times 2 = 40\%$$

$$\text{Cost} \times 40\% = \$20,000$$

$$\$20,000 \div .40 = \underline{\$50,000} \quad \text{Cost of asset}$$

EXERCISE 11-2 (Continued)

- (b) \$50,000 cost [from (a)] – \$45,000 total depreciation = \$5,000 salvage value.
- (c) The highest charge to income for Year 1 will be yielded by the double-declining balance method.
- (d) The highest charge to income for Year 4 will be yielded by the straight-line method.
- (e) The method that produces the highest book value at the end of Year 3 would be the method that yields the lowest accumulated depreciation at the end of Year 3, which is the straight-line method.

Computations:

St.-line = \$50,000 – (\$9,000 + \$9,000 + \$9,000) = \$23,000 book value, end of Year 3.

S.Y.D. = \$50,000 – (\$15,000 + \$12,000 + \$9,000) = \$14,000 book value, end of Year 3.

D.D.B. = \$50,000 – (\$20,000 + \$12,000 + \$7,200) = \$10,800 book value, end of Year 3.

- (f) The method that will yield the highest gain (or lowest loss) if the asset is sold at the end of Year 3 is the method which will yield the lowest book value at the end of Year 3, which is the double-declining balance method in this case.

EXERCISE 11-3 (15-20 minutes)

(a)
$$\frac{20(20 + 1)}{2} = 210$$

$$\frac{3}{4} \times \frac{20}{210} \times (\$711,000 - \$60,000) = \underline{\$46,500} \text{ for 2004}$$

	$\frac{1}{4} \times \frac{20}{210} \times (\$711,000 - \$60,000) =$	$\$15,500$	
+	$\frac{3}{4} \times \frac{19}{210} \times (\$711,000 - \$60,000) =$	$\underline{44,175}$	
		$\underline{\$59,675}$	for 2005

EXERCISE 11-3 (Continued)

$$(b) \frac{100\%}{20} = 5\%; 5\% \times 2 = 10\%$$

$$3/4 \times 10\% \times \$711,000 = \underline{\$53,325} \text{ for 2004}$$

$$10\% \times (\$711,000 - \$53,325) = \underline{\$65,768} \text{ for 2005}$$

EXERCISE 11-4 (15-25 minutes)

$$(a) \$315,000 - \$15,000 = \$300,000; \$300,000 \div 10 \text{ yrs.} = \$30,000$$

$$(b) \$300,000 \div 240,000 \text{ units} = \$1.25; 25,500 \text{ units} \times \$1.25 = \$31,875$$

$$(c) \$300,000 \div 25,000 \text{ hours} = \$12.00 \text{ per hr.}; 2,650 \text{ hrs.} \times \$12.00 = \$31,800$$

$$(d) 10 + 9 + 8 + 7 + 6 + 5 + 4 + 3 + 2 + 1 = 55 \text{ OR } \frac{n(n+1)}{2} = \frac{10(11)}{2} = 55$$

$$\frac{10}{55} \times \$300,000 \times 1/3 = \$18,182$$

$$\frac{9}{55} \times \$300,000 \times 2/3 = \underline{32,727}$$

$$\text{Total for 2005} \quad \underline{\underline{\$50,909}}$$

$$(e) \$315,000 \times 20\% \times 1/3 = \$21,000$$

$$[\$315,000 - (\$315,000 \times 20\%)] \times 20\% \times 2/3 = \underline{33,600}$$

$$\text{Total for 2005} \quad \underline{\underline{\$54,600}}$$

[May also be computed as 20% of (\$315,000 – 2/3 of 20% of \$315,000)]

EXERCISE 11-5 (20-25 minutes)

(a)
$$\frac{(\$117,900 - \$12,900)}{5} = \$21,000/\text{yr.} = \$21,000 \times 5/12 = \underline{\$8,750}$$

2004 Depreciation — Straight line = \$8,750

(b)
$$\frac{(\$117,900 - \$12,900)}{21,000} = \$5.00/\text{hr.}$$

2004 Depreciation — Machine Usage = 800 X \$5.00 = \$4,000

Machine	Year	Total	Allocated to	
			2004	2005
	1	5/15 X \$105,000 = \$35,000	\$14,583*	\$20,417**
	2	4/15 X \$105,000 = \$28,000		11,667***
			<u>\$14,583</u>	<u>\$32,084</u>

* \$35,000 X 5/12 = \$14,583

** \$35,000 X 7/12 = \$20,417

*** \$28,000 X 5/12 = \$11,667

2005 Depreciation — Sum-of-the-Years'-Digits = \$32,084

(d) **2004 40% X (\$117,900) X 5/12 = \$19,650**

2005 40% X (\$117,900 – \$19,650) = \$39,300

OR

1st full year (40% X \$117,900) = \$47,160

2nd full year [40% X (\$117,900 – \$47,160)] = \$28,296

2004 Depreciation = 5/12 X \$47,160 = \$19,650

2005 Depreciation = 7/12 X \$47,160 = \$27,510

5/12 X \$28,296 = 11,790

\$39,300

EXERCISE 11-6 (20-30 minutes)

(a) 2003 Straight-line $\frac{\$212,000 - \$12,000}{8} = \$25,000/\text{year}$

3 months — Depreciation $\$6,250 = (\$25,000 \times 3/12)$

(b) 2003 Output $\frac{\$212,000 - \$12,000}{40,000} = \$5.00/\text{output unit}$

1,000 units $\times \$5.00 = \$5,000$

(c) 2003 Working hours $\frac{\$212,000 - \$12,000}{20,000} = \$10.00/\text{hour}$

525 hours $\times \$10.00 = \$5,250$

(d) $8 + 7 + 6 + 5 + 4 + 3 + 2 + 1 = 36$ OR $\frac{n(n+1)}{2} = \frac{8(9)}{2} = 36$

Sum-of-the-years'-digits	Total	Allocated to		
		2003	2004	2005
Year 1 $8/36 \times \$200,000 =$	\$44,444	\$11,111	\$33,333	
2 $7/36 \times \$200,000 =$	\$38,889		9,722	\$29,167
3 $6/36 \times \$200,000 =$	\$33,333			8,333
		<u>\$11,111</u>	<u>\$43,055</u>	<u>\$37,500</u>

2005: \$37,500 = (9/12 of 2nd year of machine's life plus 3/12 of 3rd year of machine's life)

(e) Double-declining balance 2004: $1/8 \times 2 = 25\%$.

2003: $25\% \times \$212,000 \times 3/12 = \underline{\$13,250}$

2004: $25\% \times (\$212,000 - \$13,250) = \underline{\$49,688}$

OR

1st full year $(25\% \times \$212,000) = \$53,000$

EXERCISE 11-6 (Continued)

2nd full year [25% X (\$212,000 – \$53,000)] = \$39,750

2003 Depreciation 3/12 X \$53,000 = \$13,250

2004 Depreciation 9/12 X \$53,000 = \$39,750
 3/12 X \$39,750 = 9,938
\$49,688

EXERCISE 11-7 (25-35 minutes)

Methods of Depreciation

<u>Description</u>	<u>Date Purchased</u>	<u>Cost</u>	<u>Salvage</u>	<u>Life</u>	<u>Method</u>	<u>Accum. Depr. to 2004</u>	<u>2005 Depr.</u>
A	03	142,500	16,000	10	(a) SYD	33,350	(b) 19,550
B	02	(c) 79,000	21,000	5	SL	29,000	(d) 11,600
C	01	75,400	23,500	8	DDB	(e) 47,567	(f) 4,333
D	(g) 00	219,000	69,000	5	SYD	70,000	(h) 35,000

Machine A—Testing the methods

Straight-Line Method for 2003 \$ 6,325
 Straight-Line Method for 2004 \$12,650
 Total Straight Line \$18,975

Double-Declining Balance for 2003 \$14,250 (142,500 X .2 X .5)
 Double-Declining Balance for 2004 \$25,650
 Total Double Declining Balance \$39,900

Sum-of-the-years-digits for 2003 \$11,500 [(142,500 – 16,000) X 10/55 X .5]
 Sum-of-the-years-digits for 2004 \$21,850 (126,500 X 10/55 X 1/2) + (126,500 X 9/55 X .5)
 Total Sum-of-the-years-digits \$33,350 (126,500 X 9/55 X 1/2) + (126,500 X 8/55 X .5)

Method used must be SYD
 Using SYD, 2005 Depreciation is \$19,550

EXERCISE 11-7 (Continued)

Machine B—Computation of the cost

Asset has been depreciated for 2 1/2 years using the straight-line method.

Annual depreciation is then equal to 29,000 divided by 2.5 or \$11,600.

11,600 times 5 plus the salvage value is equal to the cost.

Cost is \$79,000

Using SL, 2005 Depreciation is \$11,600.

Machine C—Using the double-declining balance method of depreciation

2001's depreciation is	\$ 9,425	(75,400 X .25 X .5)
2002's depreciation is	\$16,494	
2003's depreciation is	\$12,370	
2004's depreciation is	<u>\$ 9,278</u>	
	<u>\$47,567</u>	

Using DDB, 2005 Depreciation is \$ 4,333.21

Machine D—Computation of Year Purchased

First Half Year using SYD =	\$25,000	[(219,000 – 69,000) X 5/15 X .5]
Second Year using SYD =	<u>\$45,000</u>	(150,000 X 5/15 X .5) + (150,000 X 4/15 X .5)
	<u>\$70,000</u>	

Thus asset must have been purchased on October 12, 2003

Using SYD, 2005 Depreciation is \$35,000 (150,000 X 4/15 X .5) +
(150,000 X 3/15 X .5)

EXERCISE 11-8 (20-25 minutes)

Old Machine

June 1, 2002	Purchase	\$31,000
	Freight	200
	Installation	<u>500</u>
	Total cost	<u>\$31,700</u>

Annual depreciation charge: $(\$31,700 - \$2,500) \div 10 = \$2,920$

On June 1, 2003, debit the old machine for \$1,980; the revised total cost is \$33,680 ($\$31,700 + \$1,980$); thus the revised annual depreciation charge is: $(\$33,680 - \$2,500 - \$2,920) \div 9 = \$3,140$.

Book value, old machine, June 1, 2006:

$[\$33,680 - \$2,920 - (\$3,140 \times 3)] =$	\$21,340
Fair market value	<u>20,000</u>
Loss on exchange	1,340
Cost of removal	<u>75</u>
Total loss	<u>\$ 1,415</u>

(Note to instructor: The above computation is done to determine whether there is a gain or loss from the exchange of the old machine with the new machine. If there is a gain on the exchange (not the case in this exercise), the gain needs to be deferred and the cost for the new machine should be adjusted accordingly.)

New Machine

Basis of new machine	Cash paid ($\$35,000 - \$20,000$)	\$15,000
	Fair market value of old machine	20,000
	Installation cost	<u>1,500</u>
	Total cost of new machine	<u>\$36,500</u>

Depreciation for the year beginning June 1, 2006 = $(\$36,500 - \$4,000) \div 10 = \$3,250$.

EXERCISE 11-9 (15-20 minutes)

(a) Asset	Cost	Estimated Scrap	Depreciable Cost	Estimated Life	Depreciation per Year
A	\$40,500	\$ 5,500	\$ 35,000	10	\$ 3,500
B	33,600	4,800	28,800	9	3,200
C	36,000	3,600	32,400	9	3,600
D	19,000	1,500	17,500	7	2,500
E	<u>23,500</u>	<u>2,500</u>	<u>21,000</u>	6	<u>3,500</u>
	<u>\$152,600</u>	<u>\$17,900</u>	<u>\$134,700</u>		<u>\$16,300</u>

Composite life = \$134,700 ÷ \$16,300, or 8.26 years

Composite rate = \$16,300 ÷ \$152,600, or approximately 10.7%

(b)	Depreciation Expense—Plant Assets	16,300	
	Accumulated Depreciation—Plant Assets		16,300
(c)	Cash	4,800	
	Accumulated Depreciation—Plant Assets	14,200	
	Plant Assets		19,000

EXERCISE 11-10 (10-15 minutes)

$$\text{Sum-of-the-years'-digits} = \frac{8 \times 9}{2} = 36$$

Using Y to stand for the years of remaining life:

$$Y/36 \times (\$430,000 - \$70,000) = \$60,000$$

Multiplying both sides by 36:

$$\begin{aligned} \$360,000 \quad Y &= \$2,160,000 \\ Y &= \$2,160,000 \div \$360,000 \\ Y &= 6 \end{aligned}$$

The year in which there are six remaining years of life at the beginning of that given year is 2003.

EXERCISE 11-11 (10-15 minutes)

(a) No correcting entry is necessary because changes in estimate are handled in the current and prospective periods.

(b) Revised annual charge

Book value as of 1/1/2005 [$\$60,000 - (\$7,000 \times 5)$] = $\$25,000$

Remaining useful life, 5 years (10 years – 5 years)

Revised salvage value, $\$4,500$

$(\$25,000 - \$4,500) \div 5 = \$4,100$

Depreciation Expense—Equipment.....	4,100	
Accumulated Depreciation—Equipment...		4,100

EXERCISE 11-12 (20-25 minutes)

(a) 1978-1987— $(\$2,000,000 - \$60,000) \div 40 = \$48,500/\text{yr.}$

(b) 1988-2005—Building $(\$2,000,000 - \$60,000) \div 40 =$ $\$48,500/\text{yr.}$
 Addition $(\$500,000 - \$20,000) \div 30 =$ $16,000/\text{yr.}$
 $\$64,500/\text{yr.}$

(c) No entry required.

(d) Revised annual depreciation

Building

Book value: $(\$2,000,000 - \$1,358,000^*)$	$\$642,000$
Salvage value	<u>$60,000$</u>
	$582,000$
Remaining useful life	<u>32 years</u>
Annual depreciation	<u><u>$\\$ 18,188$</u></u>

EXERCISE 11-12 (Continued)

Addition	
Book value: (\$500,000 – \$288,000**)	\$212,000
Salvage value	<u>20,000</u>
	192,000
Remaining useful life	<u>32 years</u>
Annual depreciation	<u>\$ 6,000</u>

*\$48,500 X 28 years = \$1,358,000

**\$16,000 X 18 years = \$288,000

Annual depreciation expense—building (\$18,188 + \$6,000) \$24,188

EXERCISE 11-13 (15-20 minutes)

(a) \$2,200,000 ÷ 40 = \$55,000

(b) Loss on Disposal of Plant Assets	80,000	
Accumulated Depreciation—Building		
(\$160,000 X 20/40)	80,000	
Building.....		160,000
Building	300,000	
Cash		300,000

Note: The most appropriate entry would be to remove the old roof and record a loss on disposal, because the cost of old roof is given. Another alternative would be to debit Accumulated Depreciation on the theory that the replacement extends the useful life of the building. The entry in this case would be as follows:

Accumulated Depreciation—Building.....	300,000	
Cash		300,000

As indicated, this approach does not seem as appropriate as the first approach.

EXERCISE 11-13 (Continued)

(c) No entry necessary.

(d) (Assume the cost of old roof is removed)

Building (\$2,200,000 – \$160,000 + \$300,000)	\$2,340,000
Accumulated Depreciation (\$55,000 X 20 – \$80,000)	<u>1,020,000</u>
	1,320,000
Remaining useful life	<u>25 years</u>
Depreciation—2005 (\$1,320,000 ÷ 25)	<u>\$ 52,800</u>

OR

(Assume the cost of new roof is debited to accumulated depreciation)

Book value of building prior to the replacement of roof \$2,200,000 – (\$55,000 X 20) =	\$1,100,000
Cost of new roof	<u>300,000</u>
	\$1,400,000
Remaining useful life	<u>25 years</u>
Depreciation—2005 (\$1,400,000 ÷ 25)	<u>\$ 56,000</u>

EXERCISE 11-14 (20-25 minutes)

(a) Repair Expense	500	
Equipment		500

(b) The proper ending balance in the asset account is:

January 1 balance		\$134,750
Add new equipment:		
Purchases	\$32,000	
Freight	700	
Installation	<u>2,700</u>	
		35,400
Less cost of equipment sold		<u>(23,000)</u>
		<u>\$147,150</u>

1. Straight-line: \$147,150 ÷ 10 = \$14,715

EXERCISE 11-14 (Continued)

2. Sum-of-the-years'-digits: $10 + 9 + 8 + 7 + 6 + 5 + 4 + 3 + 2 + 1 = 55$

$$\text{OR } \frac{n(n + 1)}{2} = \frac{10(11)}{2} = 55$$

For equipment purchased in 2003: \$111,750 (\$134,750 – \$23,000) of the cost of equipment purchased in 2003, is still on hand.

8/55 X \$111,750 =	\$16,255
For equipment purchased in 2005: 10/55 X \$35,400 =	<u>6,436</u>
Total	<u>\$22,691</u>

EXERCISE 11-15 (25-35 minutes)

(a)	1999	2000-2005 Incl.	2006	Total
1. \$192,000 – \$16,800 = \$175,200 \$175,200 ÷ 12 = \$14,600 per yr. (\$40 per day) 133/365 of \$14,600 = \$ 5,320 2000-2005 Incl. (6 X \$14,600) \$87,600 68/365 of \$14,600 = \$ 2,720				\$ 95,640
2.	0	87,600	14,600	102,200
3.	14,600	87,600	0	102,200
4.	7,300	87,600	7,300	102,200
5. 4/12 of \$14,600 2000-2005 Inc. 3/12 of \$14,600	4,867	87,600	3,650	96,117
6.	0	87,600	0	87,600

(b) The most accurate distribution of cost is given by methods 1 and 5 if it is assumed that straight-line is satisfactory. Reasonable accuracy is normally given by 2, 3, or 4. The simplest of the applications are 6, 2, 3, 4, 5, and 1, in about that order. Methods 2, 3, and 4 combine reasonable accuracy with simplicity of application.

EXERCISE 11-16 (10-15 minutes)

(a)	December 31, 2004	
	Loss on Impairment.....	3,200,000
	Accumulated Depreciation—Equipment...	3,200,000

Cost	\$9,000,000
Accumulated depreciation	<u>1,000,000</u>
Carrying amount	8,000,000
Fair value	<u>4,800,000</u>
Loss in impairment	<u><u>\$3,200,000</u></u>

(b)	December 31, 2005	
	Depreciation Expense	1,200,000
	Accumulated Depreciation—Equipment...	1,200,000

New carrying amount	\$4,800,000
Useful life	<u>4 years</u>
Depreciation per year	<u><u>\$1,200,000</u></u>

(c) No entry necessary. Restoration of any impairment loss is not permitted.

EXERCISE 11-17 (15-20 minutes)

(a)	Loss on Impairment.....	3,220,000
	Accumulated Depreciation—Equipment...	3,220,000

Cost	\$9,000,000
Accumulated depreciation	<u>1,000,000</u>
Carrying amount	8,000,000
Less: Fair value	4,800,000
Plus: Cost of disposal	<u>20,000</u>
Loss on impairment	<u><u>\$3,220,000</u></u>

EXERCISE 11-17 (Continued)

(b) No entry necessary. Depreciation not taken on assets intended to be sold.

(c)	Accumulated Depreciation—Equipment	500,000	
	Recovery of Loss on Impairment.....		500,000
	Fair value	\$5,300,000	
	Less: Cost of disposal	<u>20,000</u>	5,280,000
	Carrying amount		<u>4,780,000</u>
	Recovery of impairment loss		<u>\$ 500,000</u>

EXERCISE 11-18 (15-20 minutes)

(a)	December 31, 2004		
	Loss on Impairment	270,000	
	Accumulated Depreciation—Equipment...		270,000
	Cost	\$900,000	
	Accumulated depreciation	<u>400,000</u>	
	Carrying amount	500,000	
	Fair value	<u>230,000</u>	
	Loss in impairment		<u>\$270,000</u>

(b) It may be reported in the other expenses and losses section or it may be highlighted as an unusual item in a separate section. It is not reported as an extraordinary item.

(c) No entry necessary. Restoration of any impairment loss is not permitted.

(d) Management first had to determine whether there was an impairment. To evaluate this step, management does a recoverability test. The recoverability test estimates the future cash flows expected from use of that asset and its eventual disposition. If the sum of the expected future net cash flows (undiscounted) is less than the carrying amount of the asset, an impairment results. If the recoverability test indicates that an impairment has occurred, a loss is computed. The impairment loss is the amount by which the carrying amount of the asset exceeds its fair value.

EXERCISE 11-19 (15-20 minutes)

(a) Depreciation Expense: $\frac{\$84,000}{30 \text{ years}} = \$2,800 \text{ per year}$

Cost of Timber Sold: $\$1,400 - \$400 = \$1,000$

$\$1,000 \times 9,000 \text{ acres} = \$9,000,000 \text{ of value of timber}$

$(\$9,000,000 \div 3,500,000 \text{ bd. ft.}) \times 700,000 \text{ bd. ft.} = \$1,800,000$

(b) Cost of Timber Sold: $\$9,000,000 - \$1,800,000 = \$7,200,000$

$\$7,200,000 + \$100,000 = \$7,300,000$

$(\$7,300,000 \div 5,000,000 \text{ bd. ft.}) \times 900,000 \text{ bd. ft.} = \$1,314,000$

Note: The spraying costs as well as the costs to maintain the fire lanes and roads are expensed each period and are not part of the depletion base.

EXERCISE 11-20 (10-15 minutes)

Cost per barrel of oil:

Initial payment = $\frac{\$500,000}{250,000} = \2.00

Rental = $\frac{\$31,500}{18,000} = 1.75$

Premium, 5% of \$15 = .75

Reconditioning of land = $\frac{\$30,000}{250,000} = \underline{\underline{.12}}$

Total cost per barrel \$4.62

EXERCISE 11-21 (15-20 minutes)

(a) $\$1,300 - \$300 = \$1,000$ per acre for timber

$$\frac{\$1,000 \times 7,000 \text{ acres}}{8,000 \text{ bd. ft.} \times 7,000 \text{ acres}} \times 850,000 \text{ bd. ft.} =$$

$$\frac{\$7,000,000}{56,000,000 \text{ bd. ft.}} \times 850,000 \text{ bd. ft.} = \$106,250.$$

(b) $\frac{\$78,400}{56,000,000 \text{ bd. ft.}} \times 850,000 \text{ bd. ft.} = \$1,190.$

(c) Capitalize the cost of \$70,000 ($\$20 \times 3,500$ trees) and adjust depletion the next time timber is harvested.

EXERCISE 11-22 (15-20 minutes)

Depletion base: $\$1,190,000 + \$90,000 - \$100,000 + \$200,000 = \$1,380,000$

Depletion rate: $\$1,380,000 \div 60,000 = \$23/\text{ton}$

(a) Per unit material cost: $\$23/\text{ton}$

(b) 12/31/04 inventory: $\$23 \times 8,000 \text{ tons} = \$184,000$

(c) Cost of goods sold 2004: $\$23 \times 22,000 \text{ tons} = \$506,000$

EXERCISE 11-23 (15-20 minutes)

(a) $\frac{\$970,000 + \$170,000 + \$40,000^* - \$100,000}{12,000,000} = .09$ depletion per unit

*(Note to instructor: The \$40,000 should be depleted because it is a cost of the mine. This cost is incurred to get the land back to its original value of \$100,000.)

2,500,000 units extracted $\times \$0.09 = \underline{\$225,000}$ depletion for 2004

(b) 2,100,000 units sold $\times \$0.09 = \underline{\$189,000}$ charged to cost of goods sold for 2004

EXERCISE 11-24 (15-25 minutes)

(a) Asset turnover ratio:

$$\frac{\$13,234}{\frac{\$14,212 + \$13,362}{2}} = .96 \text{ times}$$

(b) Rate of return on assets:

$$\frac{\$76}{\frac{\$14,212 + \$13,362}{2}} = .55\%$$

(c) Profit margin on sales:

$$\frac{\$76}{\$13,234} = .57\%$$

(d) The asset turnover ratio times the profit margin on sales provides the rate of return on assets computed for Eastman Kodak as follows:

Profit margin on sales	X	Asset Turnover	=	Return on Assets
.57%	X	.96	=	.55%

Note the answer .55% is the same as the rate of return on assets computed in (b) above.

***EXERCISE 11-25 (20-25 minutes)**

	<u>2004</u>	<u>2005</u>
(a) Revenues	\$200,000	\$200,000
Operating expenses (excluding depreciation)	130,000	130,000
Depreciation [(\$27,000 – \$6,000) ÷ 7]	<u>3,000</u>	<u>3,000</u>
Income before income taxes	<u>\$ 67,000</u>	<u>\$ 67,000</u>

	<u>2004</u>	<u>2005</u>
(b) Revenues	\$200,000	\$200,000
Operating expenses (excluding depreciation)	130,000	130,000
Depreciation*	<u>5,400</u>	<u>8,640</u>
Taxable income	<u>\$ 64,600</u>	<u>\$ 61,360</u>

*2004 $\$27,000 \times .20 = \$5,400$

2005 $\$27,000 \times .32 = \$8,640$

(c) Book purposes (\$27,000 – \$6,000)	\$21,000
Tax purposes (entire cost of asset)	\$27,000

(d) Differences will occur for the following reasons:

1. different depreciation methods.
2. half-year convention used for tax purposes.
3. estimated useful life and tax life different.
4. tax system ignores salvage value.

***EXERCISE 11-26 (15-20 minutes)**

(a) (1) $(\$31,000 - \$1,000) \times 1/10 \times 10/12 = \$2,500$ depreciation expense for book purposes.

(2) $\$31,000 \times 1/5 \times 1/2 = \$3,100$ depreciation for tax purposes.

***EXERCISE 11-26 (Continued)**

(b) (1) $\$31,000 \times 20\% \times 10/12 = \$5,167$ depreciation expense for book purposes.

(2) $\$31,000 \times 40\% \times 1/2 = \$6,200$ depreciation expense for tax purposes.

(c) Differences will occur for the following reasons:

- 1. half-year convention used for tax purposes.**
- 2. estimated useful life and tax life different.**
- 3. tax system ignores salvage value.**

TIME AND PURPOSE OF PROBLEMS

Problem 11-1 (Time 25-30 minutes)

Purpose—to provide the student with an opportunity to compute depreciation expense using a number of different depreciation methods. The problem is complicated because the proper cost of the machine to be depreciated must be determined. For example, purchase discounts and freight charges must be considered. In addition, the student is asked to select a depreciation method that will allocate less depreciation in the early years of the machine's life than in the later years.

Problem 11-2 (Time 25-35 minutes)

Purpose—to provide the student with an opportunity to compute depreciation expense using the following methods: straight-line, units-of-output, working hours, sum-of-the-years'-digits, and declining balance. The problem is straightforward and provides an excellent review of the basic computational issues involving depreciation methods.

Problem 11-3 (Time 40-50 minutes)

Purpose—to provide the student with an opportunity to compute depreciation expense using a number of different depreciation methods. Before the proper depreciation expense can be computed, the accounts must be corrected for a number of errors made by the company in its accounting for the assets. An excellent problem for reviewing the proper accounting for plant assets and related depreciation expense.

Problem 11-4 (Time 45-60 minutes)

Purpose—to provide the student with an opportunity to correct the improper accounting for Semitrucks and determine the proper depreciation expense. The student is required to compute separately the errors arising in determining or entering depreciation or in recording transactions affecting Semitrucks.

Problem 11-5 (Time 25-30 minutes)

Purpose—to provide the student with a problem involving the computation of estimated depletion and depreciation costs associated with a tract of mineral land. The student must compute depletion and depreciation on a units-of-production basis (tons mined). A portion of the cost of machinery associated with the product must be allocated over different periods. The student may experience some difficulty with this problem.

Problem 11-6 (Time 25-30 minutes)

Purpose—to provide the student with a problem involving the proper accounting for depletion cost. This problem involves timberland for which a depletion charge must be computed. In addition, a computation of a loss that occurs because of volcanic activity must be determined.

Problem 11-7 (Time 25-35 minutes)

Purpose—to provide the student with a problem involving depletion and depreciation computations.

Problem 11-8 (Time 25-35 minutes)

Purpose—to provide the student with a comprehensive problem related to property, plant, and equipment. The student must determine depreciable bases for assets, including capitalized interest, and prepare depreciation entries using various methods of depreciation.

Problem 11-9 (Time 15-25 minutes)

Purpose—to provide the student with an opportunity to analyze impairments for assets to be used and assets to be disposed of.

Problem 11-10 (Time 45-60 minutes)

Purpose—to provide the student with an opportunity to solve a complex problem involving a number of plant assets. A number of depreciation computations must be made, specifically straight-line, 150% declining balance, and sum-of-the-years'-digits. In addition, the cost of assets acquired is difficult to determine.

Time and Purpose of Problems (Continued)

Problem 11-11 (Time 30-35 minutes)

Purpose—to provide the student with the opportunity to solve a moderate problem involving a machinery purchase and the depreciation computations using straight-line, activity, sum-of-the-years'-digits, and the double-declining balance methods, first for full periods and then for partial periods.

***Problem 11-12 (Time 25-35 minutes)**

Purpose—to provide the student with an opportunity to compute depreciation expense using a number of different depreciation methods. The purpose of computing the depreciation expense is to determine which method will result in the maximization of net income and which will result in the minimization of net income over a three-year period. An excellent problem for reviewing the fundamentals of depreciation accounting.

SOLUTIONS TO PROBLEMS

PROBLEM 11-1

(a) 1. **Depreciable Base Computation:**

Purchase price	\$73,500
Less: Purchase discount (2%)	(1,470)
Freight-in	970
Installation	<u>3,800</u>
	76,800
Less: Salvage value	<u>1,200</u>
Depreciation base	<u>\$75,600</u>

2004—Straight line: $(\$75,600 \div 8 \text{ years}) \times 2/3 \text{ year} = \$6,300$

2. **Sum-of-the-years'-digits for 2005**

	Machine Year	Total Depreciation	2004	2005
1	$8/36 \times \$75,600 =$	\$16,800	\$11,200*	\$ 5,600**
2	$7/36 \times \$75,600 =$	\$14,700		<u>9,800***</u>
				\$15,400

* $\$16,800 \times 2/3 = \$11,200$

** $\$16,800 \times 1/3 = \$5,600$

*** $\$14,700 \times 2/3 = \$9,800$

3. **Double-declining balance for 2004**

$(\$76,800 \times 25\% \times 2/3) = \$12,800$

(b) **An activity method.**

PROBLEM 11-2

		<u>Depreciation</u>	
		<u>Expense</u>	
		<u>2004</u>	<u>2005</u>
(a)	Straight-line: $(\$67,000 - \$4,000) \div 7 = \$9,000/\text{yr.}$ 2004: $\$9,000 \times 7/12$ 2005: $\$9,000$	\$ 5,250	\$9,000
(b)	Units-of-output: $(\$67,000 - \$4,000) \div 525,000 \text{ units} = \$.12/\text{unit}$ 2004: $\$.12 \times 55,000$ 2005: $\$.12 \times 48,000$	6,600	5,760
(c)	Working hours: $(\$67,000 - \$4,000) \div 42,000 \text{ hrs.} = \$1.50/\text{hr.}$ 2004: $\$1.50 \times 6,000$ 2005: $\$1.50 \times 5,500$	9,000	8,250
(d)	Sum-of-the-years'-digits: $1 + 2 + 3 + 4 + 5 + 6 + 7 = 28$ or $\frac{n(n+1)}{2} = \frac{7(8)}{2} = 28$ 2004: $7/28 \times \$63,000 \times 7/12$ 2005: $7/28 \times \$63,000 \times 5/12 =$ $6/28 \times \$63,000 \times 7/12 =$	9,188	14,438
(e)	Declining balance: Rate = $2/7$ 2004: $2/7 \times (\$67,000 - \$11,167) = \$15,952$ OR 2004: $7/12 \times 2/7 \times \$67,000$ 2005: $5/12 \times 2/7 \times \$67,000 =$ $2/7 \times (\$67,000 - \$19,143)$ $\times 7/12$	\$ 7,976	15,952

PROBLEM 11-3

(a)	Depreciation Expense—Asset A	2,900	
	Accumulated Depreciation—Asset A (5/55 X [\$35,000 – \$3,100])		2,900
	Accumulated Depreciation—Asset A	26,100	
	Asset A (\$35,000 – \$13,000)		22,000
	Gain on Disposal of Plant Assets		4,100
(b)	Depreciation Expense—Asset B	6,720	
	Accumulated Depreciation—Asset B ([\$51,000 – \$3,000] ÷ 15,000 X 2,100)		6,720
(c)	Depreciation Expense—Asset C	6,000	
	Accumulated Depreciation—Asset C ([\$80,000 – \$15,000 – \$5,000] ÷ 10)		6,000
(d)	Asset E	22,000	
	Retained Earnings		22,000
	Depreciation Expense—Asset E	4,400*	
	Accumulated Depreciation—Asset E		4,400
	*(\$22,000 X .20)		

(a)	Per Company Books			As Adjusted			Net Income Overstated (Understated)
	Semitrucks dr. (cr.)	Acc. Dep. Semitrucks dr. (cr.)	Retained Earnings dr. (cr.)	Semitrucks dr. (cr.)	Acc. Dep., Semitrucks dr. (cr.)	Retained Earnings dr. (cr.)	
1/1/02	\$ 94,000	\$ (30,200)		\$94,000	\$ (30,200)		
7/1/02	15,000			34,000		\$ 2,000 ¹	\$ 2,000
				(30,000)	9,000		
12/31/02		(20,300)	\$20,300		(19,200)	19,200 ²	(1,100)
12/31/02	109,000	(50,500)	\$20,300	98,000	(40,400)	\$21,200	\$ 900
1/1/03	(3,500)			(18,000)	14,400	\$ 100 ³	\$ 100
12/31/03		(21,100)	\$21,100		(16,000)	16,000 ⁴	(5,100)
12/31/03	105,500	(71,600)	\$21,100	80,000	(42,000)	\$16,100	\$ (5,000)
7/1/04	36,000			36,000			
7/1/04	(2,500)		\$ (700)	(24,000)	14,400	\$ 6,400 ⁵	\$ 7,100
12/31/04		(24,450)	24,450		(15,000)	15,000 ⁶	(9,450)
12/31/04	139,000	(96,050)	\$23,750	92,000	(42,600)	\$21,400	\$ (2,350)
12/31/05		(27,800)	\$27,800		(14,000)	\$14,000 ⁷	\$ (13,800)
12/31/05	\$139,000	\$ (123,850)	\$27,800	\$92,000	\$ (56,600)	\$14,000	\$ (13,800)
Total understatement of income			\$92,950			\$72,700	\$ (20,250)

PROBLEM 11-4

¹Implied fair market value of Truck #3 (\$34,000 – \$15,000)
 Book value of Truck #3 [\$30,000 – (\$30,000/5 X 1 1/2 yrs.)] = \$30,000 – \$9,000 =
 Loss on Trade

²Truck #1: \$18,000/5 = \$ 3,600
 Truck #2: \$22,000/5 = 4,400
 Truck #3: \$30,000/5 X 1/2 = 3,000
 Truck #4: \$24,000/5 = 4,800
 Truck #5: \$34,000/5 X 1/2 = 3,400
 Total \$19,200

PROBLEM 11-4 (Continued)

³ Book value of Truck #1 [$\$18,000 - (\$18,000/5 \times 4 \text{ yrs.})$] =	
\$18,000 – \$14,400	= \$3,600
Cash received on sale	= <u>3,500</u>
Loss on sale	<u>\$ 100</u>

⁴ Truck #2:	\$22,000/5	=	\$4,400
Truck #4:	\$24,000/5	=	4,800
Truck #5:	\$34,000/5	=	<u>6,800</u>
Total			<u>\$16,000</u>

⁵ Book value of Truck #4 $\$24,000 - [(\$24,000/5 \times 3 \text{ yrs.})]$	= \$9,600
Cash received (\$700 + \$2,500)	= <u>3,200</u>
Loss on disposal	<u>\$6,400</u>

⁶ Truck #2:	\$22,000/5 X 1/2	=	\$ 2,200
Truck #4:	\$24,000/5 X 1/2	=	2,400
Truck #5:	\$34,000/5		6,800
Truck #6:	\$36,000/5 X 1/2	=	<u>3,600</u>
Total			<u>\$15,000</u>

⁷ Truck #2:	(fully dep.)	=	\$ 0
Truck #5:	\$34,000/5	=	6,800
Truck #6:	\$36,000/5	=	<u>7,200</u>
Total			<u>\$14,000</u>

(b) Compound journal entry December 31, 2005:

Accumulated Depreciation, Semitrucks	67,250	
Semitrucks.....		47,000
Retained Earnings		6,450
Depreciation Expense 2005		13,800

PROBLEM 11-4 (Continued)**Summary of Adjustments:**

	<u>Per</u> <u>Books</u>	<u>As</u> <u>Adjusted</u>	<u>Adjustment</u> <u>Dr. or (Cr.)</u>
Semitrucks	<u>\$139,000</u>	<u>\$92,000</u>	<u>\$(47,000)</u>
Accumulated Depreciation	<u>\$123,850</u>	<u>\$56,600</u>	<u>\$ 67,250</u>
Prior Years' Income			
Retained Earnings, 2002	\$ 20,300	\$21,200	\$ 900
Retained Earnings, 2003	21,100	16,100	(5,000)
Retained Earnings, 2004	<u>23,750</u>	<u>21,400</u>	<u>\$ (2,350)</u>
Totals	<u>\$ 65,150</u>	<u>\$58,700</u>	<u>\$ (6,450)</u>
Depreciation Expense, 2005	<u>\$ 27,800</u>	<u>\$14,000</u>	<u>\$(13,800)</u>

PROBLEM 11-5

(a) Estimated depletion:

Depletion Base	Estimated Yield	Estimated Depletion		
		Per Ton	1 ST & 11 th Yrs.	Each of Yrs. 2-10 Incl.
\$570,000*	120,000 tons	\$4.75	\$28,500**	\$57,000***

* (\$600,000 – \$30,000)

** (\$4.75 X 6,000)

*** (\$4.75 X 12,000)

Estimated depreciation:

Asset	Cost	Per ton Mined	1 st Yr.	Yrs. 2-5	6 th Yr.	Yrs. 7-10	11 th Yr.
Building	\$36,000	\$.30*	\$1,800	\$3,600	\$3,600	\$3,600	\$1,800
Machinery (1/2)	24,000	.20**	1,200	2,400	2,400	2,400	1,200
Machinery (1/2)	24,000	.40***	2,400	4,800	2,400	0	0

* $\$36,000 \div 120,000 = \$.30$

** $\$24,000 \div 120,000 = \$.20$

*** $\$24,000 \div (120,000 \times 1/2) = \$.40$

(b) Depletion: $\$4.75 \times 7,000 \text{ tons} = \underline{\underline{\$33,250}}$

Depreciation:	Building	\$.30 X 7,000 =	\$2,100
	Machinery	\$.20 X 7,000 =	1,400
	Machinery	\$.40 X 7,000 =	<u>2,800</u>
	Total depreciation		<u><u>\$6,300</u></u>

PROBLEM 11-6

(a)	Original cost	$\$550 \times 3,000 =$	\$1,650,000
	Deduct residual value of land	$\$200 \times 3,000 =$	<u>600,000</u>
			1,050,000

Cost of logging road		<u>150,000</u>
Depletion base		<u>\$1,200,000</u>

$$\frac{\$1,200,000}{500,000 \text{ ft.}} = \$2.40 \text{ depletion per board foot}$$

(b)	Inventory	240,000
	Accumulated Depreciation—Timber	240,000

Depletion, 1980: $20\% \times 500,000 \text{ bd. ft.} = 100,000 \text{ bd. ft.};$
 $100,000 \text{ bd. ft.} \times \$2.40 = \$240,000$

(c)	Loss of timber (\$1,050,000 – \$210,000)	\$840,000
	Loss of land value	600,000
	Loss of logging roads [(\$150,000 – (20% X \$150,000)]	120,000
	Logging equipment	300,000
	Cost of salvaging timber	700,000
	Less recovery (\$3 X 400,000 bd. ft.)	<u>(1,200,000)</u>
	Extraordinary loss due to the eruption of Mt. St. Helens	<u>\$1,360,000</u>

PROBLEM 11-7

Instructors should note the changing depletion base in this problem.

2005

Computation of Depletion Base for 2005

Timber

Cost per acre	\$1,700				
Land Cost	<u>800</u>				
Timber Cost	\$ 900	X	10,000 acres		\$9,000,000
Road Cost					<u>195,000</u>
Total Depletion Base					\$9,195,000

Estimated Depletion for 2005	\$9,195,000	
	X <u>0.07</u>	(472,500/6,750,000)
Depletion Expense for 2005	\$ 643,650	

Depreciation of Removable Equipment

Cost	\$ 189,000	
Salvage Value	<u>(9,000)</u>	
Depreciable base (\$180,000/15)	180,000	
Annual Depreciation using SL	\$ 12,000	

Depreciation Expense for 2005	\$ 5000	(5/12 X \$12,000)
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PROBLEM 11-7 (Continued)

2006

Depletion Base for 2006

Base for 2005 \$9,195,000

Less Depletion for 2005 (643,650)

Plus Seedling Planting Costs 120,000

Depletion Base for 2006 \$8,671,350

Depletion Base for 2006 \$8,671,350

Times X 0.12 (774,000/6,450,000)

Depletion for 2006 \$1,040,562

Depreciation Expense for 2006 \$ 12,000

2007

Depletion Base for 2007

Base for 2006 \$ 8,671,350

Less Depletion for 2006 (1,040,562)

Plus Seedling Planting Costs 150,000

Depletion Base for 2007 \$ 7,780,788

Depletion Base for 2007 \$ 7,780,788

Times X 10.00% (650,000/6,500,000)

Depletion for 2007 \$ 778,079

Depreciation Expense for 2007 \$ 12,000

PROBLEM 11-8

- (a) The amounts to be recorded on the books of Selig Sporting Goods Inc. as of December 31, 2004, for each of the properties acquired from Starks Athletic Equipment Company are calculated as follows:

Cost Allocations to Acquired Properties

	Appraisal Value	Remaining Purchase Price Allocations	Renovations	Capitalized Interest	Total
(1) Land	\$280,000				\$280,000
(2) Building		\$ 84,000 ¹	\$100,000	\$21,600 ²	205,600
(3) Machinery		<u>36,000¹</u>			<u>36,000</u>
Totals	<u>\$280,000</u>	<u>\$120,000</u>	<u>\$100,000</u>	<u>\$21,600</u>	<u>\$521,600</u>

Supporting Calculations

¹Balance of purchase price to be allocated.

Total purchase price	\$400,000
Less land appraisal	<u>280,000</u>
Balance to be allocated	<u>\$120,000</u>

	Appraisal Values	Ratios		Allocated Values
Building	\$105,000	105/150 = .70	X \$120,000	\$ 84,000
Machinery	<u>45,000</u>	45/150 = .30	X \$120,000	<u>36,000</u>
Totals	<u>\$150,000</u>	<u>1.00</u>		<u>\$120,000</u>

PROBLEM 11-8 (Continued)

²Capitalizable interest.

<u>Dates of loans in 2004</u>	<u>Amounts</u>		<u>Periods Outstanding</u>		<u>Interest At 12%</u>
1/1	\$ 50,000	X	12/12	X .12	\$ 6,000
4/1	130,000	X	9/12	X .12	11,700
10/1	130,000	X	3/12	X .12	3,900
12/31	<u>190,000</u>	X		X .12	
Totals	<u>\$500,000</u>				<u>\$21,600</u>

Note to instructor: If the interest is allocated between the building and the machinery, \$15,120 ($\$21,600 \times 105/150$) would be allocated to the building and \$6,480 ($\$21,600 \times 45/150$) would be allocated to the machinery.

(b) Selig Sporting Goods Inc.'s 2004 depreciation expense, for book purposes, for each of the properties acquired from Starks Athletic Equipment Company is as follows:

1. Land: No depreciation.

**2. Building: Depreciation rate = $1.50 \times 1/15 = .10$
 2004 depreciation expense = Cost X Rate X 1/2 year
 = $\$205,600 \times .10 \times 1/2$
 = \$10,280**

**3. Machinery: Depreciation rate = $2.00 \times 1/5 = .40$
 2004 depreciation expense = Cost X Rate X 1/2
 = $\$36,000 \times .40 \times 1/2$
 = \$7,200**

(c) Arguments for the capitalization of interest costs include the following.

(1) Diversity of practices among companies and industries called for standardization in practices.

PROBLEM 11-8 (Continued)

- (2) Total interest costs should be allocated to enterprise assets and operations, just as material, labor, and overhead costs are allocated. That is, under the concept of historical costs, all costs incurred to bring an asset to the condition and location necessary for its intended use should be reflected as a cost of that asset.**

Arguments against the capitalization of interest include the following:

- (1) Interest capitalized in a period would tend to be offset by amortization of interest capitalized in prior periods.**
- (2) Interest cost is a cost of financing, not of construction.**

PROBLEM 11-9

(a) Carrying value of asset: $\$8,000,000 - \$2,000,000 = \$6,000,000$.

Future cash flows ($\$5,300,000$) < Carrying value ($\$6,000,000$)

Impairment entry:

Loss on Impairment	1,600,000*	
Accumulated Depreciation		1,600,000

* $\$6,000,000 - \$4,400,000$

(b) Depreciation Expense.....	1,100,000**	
Accumulated Depreciation		1,100,000

** $(4,400,000 \div 4)$

(c) No depreciation is recorded on impaired assets to be disposed of.
Recovery of impairment losses are recorded.

Accumulated Depreciation.....	200,000	
Recovery of Impairment Loss ...		200,000

PROBLEM 11-10

- (1) **\$82,000** **Allocated in proportion to appraised values
(1/10 X \$820,000).**
- (2) **\$738,000** **Allocated in proportion to appraised values
(9/10 X \$820,000).**
- (3) **Forty years** **Cost less salvage (\$738,000 – \$40,000) divided by
annual depreciation (\$17,450).**
- (4) **\$17,450** **Same as prior year since it is straight-line depreciation.**
- (5) **\$91,000** **[Number of shares (2,500) times fair value (\$30)]
plus demolition cost of existing building (\$16,000).**
- (6) **None** **No depreciation before use.**
- (7) **\$30,000** **Fair market value.**
- (8) **\$4,500** **Cost (\$30,000) times percentage (1/10 X 150%).**
- (9) **\$3,825** **Cost (\$30,000) less prior year's depreciation (\$4,500)
equals \$25,500. Multiply \$25,500 times 15%.**
- (10) **\$150,000** **Total cost (\$164,900) less repairs and maintenance
(\$14,900).**
- (11) **\$32,000** **Cost less salvage (\$150,000 – \$6,000) times 8/36.**
- (12) **\$9,333** **Cost less salvage (\$150,000 – \$6,000) times 7/36 times
one-third of a year.**

PROBLEM 11-10 (Continued)

- (13) \$52,000** **Annual payment (\$6,000) times present value of annuity due at 8% for 11 years (7.710) plus down payment (\$5,740). This can be found in an annuity due table since the payments are at the beginning of each year. Alternatively, to convert from an ordinary annuity to an annuity due factor, proceed as follows: For eleven payments use the present value of an ordinary annuity for 11 years (7.139) times 1.08. Multiply this factor (7.710) times \$6,000 annual payment to obtain \$46,260, and then add the \$5,740 down payment.**
- (14) \$2,600** **Cost (\$52,000) divided by estimated life (20 years).**

PROBLEM 11-11

(a) (1) **Straight-line Method:** $\frac{\$77,000 - \$5,000}{5 \text{ years}} = \$14,400 \text{ a year}$

(2) **Activity Method:** $\frac{\$77,000 - \$5,000}{100,000 \text{ hours}} = \0.72 per hour

Year	1	20,000 hrs. X \$0.72 =	\$14,400
	2	25,000 hrs. X \$0.72 =	18,000
	3	15,000 hrs. X \$0.72 =	10,800
	4	30,000 hrs. X \$0.72 =	21,600
	5	10,000 hrs. X \$0.72 =	7,200

(3) **Sum-of-the-Years'-Digits:** $5 + 4 + 3 + 2 + 1 = 15$

Year	1	5/15 X (\$77,000 - \$5,000) =	\$24,000
	2	4/15 X \$72,000 =	19,200
	3	3/15 X \$72,000 =	14,400
	4	2/15 X \$72,000 =	9,600
	5	1/15 X \$72,000 =	4,800

(4) **Double-Declining Balance Method:** Each year is 20% of its total life. Double the rate to 40%.

Year	1	40% X \$77,000 =	\$30,800
	2	40% X (\$77,000 - \$30,800) =	18,480
	3	40% X (\$77,000 - \$49,280) =	11,088
	4	40% X (\$77,000 - \$60,368) =	6,653
	5	Enough to reduce to salvage =	4,979

PROBLEM 11-11 (Continued)

(b) (1) Straight-line Method:

Year	1	$\frac{\$77,000 - \$5,000}{5 \text{ years}}$	X 9/12 =	\$10,800
	2	Full year		14,400
	3	Full year		14,400
	4	Full year		14,400
	5	Full year		14,400
	6	Full year X 3/12 year =		3,600

(2) Sum-of-the-Years'-Digits:

Year 1	$(5/15 \times \$72,000) 9/12 =$		\$18,000
Year 2	$(5/15 \times \$72,000) 3/12 =$	\$ 6,000	
	$(4/15 \times \$72,000) 9/12 =$	<u>14,400</u>	20,400
Year 3	$(4/15 \times \$72,000) 3/12 =$	4,800	
	$(3/15 \times \$72,000) 9/12 =$	<u>10,800</u>	15,600
Year 4	$(3/15 \times \$72,000) 3/12 =$	3,600	
	$(2/15 \times \$72,000) 9/12 =$	<u>7,200</u>	10,800
Year 5	$(2/15 \times \$72,000) 3/12 =$	2,400	
	$(1/15 \times \$72,000) 9/12 =$	<u>3,600</u>	6,000
Year 6	$(1/15 \times \$72,000) 3/12 =$		1,200

PROBLEM 11-11 (Continued)

(3) Double-Declining Balance Method:

Year	Cost	Accum. Depr. at beg. of year	Book Value at beg. of year	Depr. Expense
1	\$77,000	—	\$77,000	\$23,100
2	77,000	\$23,100	53,900	21,560
3	77,000	44,660	32,340	12,936
4	77,000	57,596	19,404	7,762
5	77,000	65,358	11,642	4,657
6	77,000	70,015	6,985	1,985*

*to reduce to \$5,000 salvage value.

***PROBLEM 11-12**

- (a) The straight-line method would provide the highest total net income for financial reporting over the three years, as it reports the lowest total depreciation expense. These computations are provided below.

Computations of depreciation expense and accumulated depreciation under various assumptions:

- (1) Straight-line:

$$\frac{\$1,100,000 - \$50,000}{5 \text{ years}} = \$210,000$$

Year	Depreciation Expense	Accumulated Depreciation
2002	\$210,000	<u>\$ 210,000</u>
2003	210,000	<u>\$ 420,000</u>
2004	<u>210,000</u>	<u>\$ 630,000</u>
	<u>\$630,000</u>	

- (2) Double-declining balance:

Year	Depreciation Expense	Accumulated Depreciation
2002	\$440,000 (40% X \$1,100,000)	<u>\$ 440,000</u>
2003	264,000 (40% X \$660,000)	<u>\$ 704,000</u>
2004	<u>158,400 (40% X \$396,000)</u>	<u>\$ 862,400</u>
	<u>\$862,400</u>	

- (3) Sum-of-the-years'-digits:

Year	Depreciation Expense	Accumulated Depreciation
2002	\$350,000 (5/15 X \$1,050,000)	<u>\$ 350,000</u>
2003	280,000 (4/15 X \$1,050,000)	<u>\$ 630,000</u>
2004	<u>210,000 (3/15 X \$1,050,000)</u>	<u>\$ 840,000</u>
	<u>\$840,000</u>	

***PROBLEM 11-12 (Continued)**

(4) Units-of-output:

Year	Depreciation Expense		Accumulated Depreciation
2002	\$252,000	(\$21* X 12,000)	<u>\$ 252,000</u>
2003	231,000	(\$21 X 11,000)	<u>\$ 483,000</u>
2004	<u>210,000</u>	(\$21 X 10,000)	<u>\$ 693,000</u>
	<u>\$693,000</u>		

***\$1,050,000 ÷ 50,000 = \$21 per unit**

(b) General MACRS method:

	Total Cost		MACRS Rates (%)*		Annual Depreciation	Accumulated Depreciation
2002	\$1,100,000	X	14.29	=	\$157,190	<u>\$157,190</u>
2003	1,100,000	X	24.49	=	269,390	<u>\$426,580</u>
2004	1,100,000	X	17.49	=	<u>192,390</u>	<u>\$618,970</u>
					<u>\$618,970</u>	

***Taken from the MACRS rates schedule.**

Optional straight-line method:

	Total Cost		Depreciation Rate		Annual Depreciation	Accumulated Depreciation
2002	\$1,100,000	X	(1/7 X 1/2)	=	\$ 78,571	<u>\$ 78,571</u>
2003	1,100,000	X	1/7	=	157,143	<u>\$235,714</u>
2004	1,100,000	X	1/7	=	<u>157,143</u>	<u>\$392,857</u>
					<u>\$392,857</u>	

The general MACRS method would have higher depreciation expense (\$618,970) than that of the optional straight-line method (\$392,857) for the three-year period ending December 31, 2004. Therefore, the general MACRS method would minimize net income for income tax purposes for this period.

TIME AND PURPOSE OF CASES

Case 11-1 (Time 25-35 minutes)

Purpose—to provide the student with an understanding of the basic objective of depreciation accounting. In addition, the case involves a reverse sum-of-the-years'-digits situation and the student is to comment on the propriety of such an approach. Finally, the classic issue of whether depreciation provides funds must be considered. The tax effects of depreciation must be considered when this part of the case is examined. An excellent case for covering the traditional issues involving depreciation accounting.

Case 11-2 (Time 20-25 minutes)

Purpose—to provide the student with a basic understanding of the difference between the unit and group or composite depreciation methods. The student is required to indicate the arguments for and against these methods and to indicate how retirements are handled.

Case 11-3 (Time 25-35 minutes)

Purpose—to provide the student with an understanding of a number of unstructured situations involving depreciation accounting. The first situation considers whether depreciation should be recorded during a strike. The second situation involves the propriety of employing the units of production method in certain situations. The third situation involves the step-up of depreciation charges because properties are to be replaced due to obsolescence. The case is somewhat ambiguous, so cut-and-dried approaches should be discouraged.

Case 11-4 (Time 30-40 minutes)

Purpose—to provide the student with an understanding of the objectives of depreciation and the theoretical basis for accelerated depreciation methods.

Case 11-5 (Time 20-25 minutes)

Purpose—to provide the student with the opportunity to examine the ethical dimensions of the depreciation method choice.

SOLUTIONS TO CASES

CASE 11-1

(a) The purpose of depreciation is to distribute the cost (or other book value) of tangible capital assets, less salvage, over their useful lives in a systematic and rational manner. Under generally accepted accounting principles as presently understood, depreciation accounting is a process of allocation, not of valuation, through which the productive effort (cost) is to be matched with productive accomplishment (revenue) for the period. Depreciation accounting, therefore, is concerned with the timing of the expiration of the cost of tangible plant assets.

(b) The proposed depreciation method is, of course, systematic. Whether it is rational in terms of cost allocation depends on the facts of the case. It produces an increasing depreciation charge, which is usually not justifiable in terms of the benefit from the use of the asset because manufacturers typically prefer to use their new equipment as much as possible and their old equipment only as needed to meet production quotas during periods of peak demand. As a general rule, then, the benefit declines with age. Assuming that the actual operations (including equipment usage) of each year are identical, maintenance and repair costs are likely to be higher in the later years of usage than in the earlier years. Hence the proposed method would couple light depreciation and repair charges in the early years. Reported net income in the early years would be much higher than reported net income in the later years of asset life, an unreasonable and undesirable variation during periods of identical operation.

On the other hand, if the expected level of operations (including equipment usage) in the early years of asset life is expected to be low as compared to that of later years because of slack demand or production policies, the pattern of the depreciation charges of the proposed method approximately parallels expected benefits (and revenues) and hence is reasonable. Although the units-of-production depreciation method is the usual selection to fit this case, the proposed method also conforms to generally accepted accounting principles in this case provided that proper justification is given.

(c) (1) Depreciation charges neither recover nor create funds. Revenue-producing activities are the sources of funds from operations: if revenues exceed out-of-pocket costs during a fiscal period, funds are available to cover other than out-of-pocket costs; if revenues do not exceed out-of-pocket costs, no funds are made available no matter how much, or little, depreciation is charged.

(2) Depreciation may affect funds in two ways. First, depreciation charges affect reported income and hence may affect managerial decisions such as those regarding pricing, product selection, and dividends. For example, the proposed method would result initially in higher reported income than would the straight-line method, consequently stockholders might demand higher dividends in the earlier years than they would otherwise expect.

The straight-line method, by causing a lower reported income during the early years of asset life and thereby reducing the amount of possible dividends in early years as compared with the proposed method, could encourage earlier reinvestments in other profit-earning assets in order to meet increasing demand.

Second, depreciation charges affect reported taxable income and hence affect directly the amount of income taxes payable in the year of deduction.

Using the proposed method for tax purposes would reduce the total tax bill over the life of the assets (1) if the tax rates were increased in future years or (2) if the business were doing poorly now but were to do significantly better in the future. The first condition is political and speculative but the second condition may be applicable to Prophet Manufacturing Company in view of its recent origin and its rapid expansion program. Consequently, more funds might be available for reinvestment in plant assets in years of large deductions if one of the above assumptions were true.

CASE 11-1 (Continued)

If Prophet is not profitable now, it would not benefit from higher deductions now and should consider an increasing charge method for tax purposes, such as the one proposed. If Prophet is quite profitable now, the president should reconsider his proposal because it will delay the availability of the tax shield provided by depreciation. However, this decision should not affect the decision to use a depreciation method for stockholders' reporting that is systematic and rational in terms of cost allocation under generally accepted accounting principles as presently understood.

CASE 11-2

(a) (1) The unit method of recording depreciation involves the treatment of plant assets or substantial additions thereto as individual items. The method entails maintaining detailed records of the costs of specific assets and related accumulated depreciation. Computation of depreciation is based on the estimated useful life of the individual asset. The method is distinguished from group and composite-life methods under which the cost and estimated life of the assets are commingled. Depreciation may be recorded by straight-line, accelerated, or other accepted computation methods.

(2) Under the group or composite-life methods, assets are aggregated into accounting units. Such grouping might be horizontal, vertical, or geographical. Horizontal grouping assembles together all assets of similar physical characteristics, such as trucks, presses, returnable containers, etc. A vertical or functional grouping comprises all assets contributing to a common economic function, such as a sugar refinery, a service station, etc. The geographical grouping includes all assets in a district or region, such as telephone poles.

Depreciation under these methods requires development of a weighted-average rate from the assets' depreciable costs and estimated lives. Separate accounts are established for the total cost of each asset grouping and its related accumulated depreciation. The asset grouping should be composed of a large number of units to obtain a reliable average life.

- (b) 1. Arguments **for** the use of the unit method are:
- i. The method is simple in that it does not require involved mathematical computations.
 - ii. The gain or loss on the retirement of a particular asset can be computed.
 - iii. For cost purposes, depreciation on idle equipment can be isolated.
 - iv. The method results in a more accurately computed depreciation provision in any given year, as the total depreciation charge represents the best estimate of the depreciation of each asset and is not the result of averaging the cost over a longer period of time.

Arguments **against** the unit method are:

- i. Considerable additional bookkeeping is necessary to account for each asset and its related depreciation. (The advent of computers reduces the work burden, however.)
 - ii. There is a point of diminishing returns in the accumulation of accounting data under this method, that is, additional accuracy may not justify the additional cost of record-keeping.
 - iii. Under a decentralized financial control system where a measure of the division's efficiency is the rate of return on the gross book value of the investment a division manager might scrap fully or nearly fully depreciated equipment to improve the division's rate of return even though the equipment is still serviceable.
 - iv. There may be reluctance on the part of a division manager to replace equipment not fully depreciated with more efficient equipment because of the effect of the loss on the division's profits in the year of replacement.
2. Arguments **for** the use of the group and composite-life methods are:
- i. The methods require less detailed bookkeeping.
 - ii. The application of depreciation to the whole group tends to average out or offset errors, economic or operating, caused by underdepreciation or overdepreciation.
 - iii. Periodic income is not distorted by gains or losses on disposal of assets.

CASE 11-2 (Continued)

- iv. A more useful charge to expense is derived from these methods because of their recognition that depreciation estimates are based on averages and that gains and losses on individual assets are of little significance.

Arguments **against** the use of the group and composite-life methods would include:

- i. The methods would conceal faulty estimates for a long period of time.
- ii. When there is an early heavy retirement of assets a debit balance might appear in the accumulated depreciation account and present an accounting problem.
- iii. Information is not available regarding a particular machine for cost-calculation purposes.
- iv. Under a decentralized financial control system where a measure of the division's efficiency is the rate of return on the gross book value of the investment, to improve the division's financial reports a division manager might scrap idle but serviceable equipment or equipment that is not earning a satisfactory return on book value. The company would sustain an actual loss in the amount of the value of the equipment scrapped.
- v. Under the same situation as "iv" above, except that net book value is used, where the assets, although serviceable, are fully or almost fully depreciated, the division manager might hesitate to replace them because of the high rate of return on investment.

(c) Under the unit method, retirements are recorded by removing from the accounts the cost of the asset and its related accumulated depreciation. The difference between the two accounts, adjusted for salvage and disposal costs, if any, is recognized as gain or loss.

Under the group and composite-life methods the cost of the retired asset is removed from the asset account, and the accumulated depreciation account is reduced by the amount of the cost of the retired asset, adjusted for salvage, salvage costs, and removal costs. Accordingly, there is no periodic recognition of gain or loss; the accumulated depreciation account serves as a suspense account for the recognition of gain or loss until the final asset retirement.

CASE 11-3

Situation I. This position relates to the omission of a provision for straight-line depreciation during a strike. The same question could be raised with respect to plant shut-downs for many reasons, such as for a lack of sales or for seasonal business.

The method of depreciation used should be systematic and rational. The annual provision for depreciation should represent a fair estimate of the loss in value arising from wear and usage and also from obsolescence. Each company should analyze its own facts and establish the best method under the circumstances. If the company was employing a straight-line depreciation method, for example, it is inappropriate to stop depreciating the plant asset during the strike.

If the company employs a units-of-production method, however, it would be appropriate not to depreciate the asset during this period. Even in this latter case, however, if the strike were prolonged, it might be desirable to record some depreciation because of the obsolescence factors related to the passage of time.

Situation II. (a) Steady demand for the new blenders suggests use of the straight-line method or the units-of-production method, either of which will allocate cost evenly over the life of the machine. Decreasing demand indicates use of an accelerated method (declining-balance or sum-of-the-years'-digits) or the units-of-production method in order to allocate more of the cost to the earlier years of the machine's life. Increasing demand indicates the use of the units-of-production method to charge more of the cost to the later years of the machine's life; an increasing-charge method (annuity or sinking-fund) could be employed, though these methods are seldom used except by utilities.

CASE 11-3 (Continued)

(b) In determining the depreciation method to be used for the machine, the objective should be to allocate the cost of the machine over its useful life in a systematic and rational manner, so that costs will be matched with the benefits expected to be obtained. In addition to demand, consideration should be given to the items discussed below, their interrelationships, the relative importance of each, and the degree of certainty with which each can be predicted:

The expected pattern of costs of repairs and maintenance should be considered. Costs which vary with use of the machine may suggest the use of the units-of-production method. Costs which are expected to be equal from period to period suggest the use of the straight-line method. If costs are expected to increase with the age of the machine, an accelerated method may be considered reasonable because it will tend to equalize total expenses from period to period.

The operating efficiency of the machine may change with its age. A decrease in operating efficiency may cause increases in such costs as labor and power; if so, an accelerated method is indicated. If operating efficiency is not expected to decline, the straight-line method is indicated.

Another consideration is the expiration of the physical life of the machine. If the machine wears out in relation to the passage of time, the straight-line method is indicated. Within this maximum life, if the usage per period varies, the units-of-production method may be appropriate.

The machine may become obsolete because of technological innovation; it may someday be more efficient to replace the machine even though it is far from worn out. If the probability is high that such obsolescence will occur in the near future, the shortened economic life should be recognized. Within this shortened life, the depreciation method used would be determined by evaluating such consideration as the anticipated periodic usage.

An example of the interrelationship of the items discussed above is the effect of the repairs and maintenance policy on operating efficiency and physical life of the machine. For instance, if only minimal repairs and maintenance are undertaken, efficiency may decrease rapidly and life may be short.

It is possible that different considerations may indicate different depreciation methods for the machine. If so, a choice must be made based on the relative importance of the considerations. For instance, physical life may be less important than the strong chance of technological obsolescence which would result in a shorter economic life.

Situation III. Depreciation rates should be adjusted in order that the operating sawmills which are to be replaced will be depreciated to their residual value by the time the new facility becomes available. The step-up in the depreciation rates should be considered as a change in estimate and prior years' financial statements should not be adjusted.

The idle mill should be written off immediately as it appears to have no future service potential.

CASE 11-4

To: Merton Miller, Supervisor of Canning Room

From: Your name, Accountant

Date: January 22, 2004

Subject: Annual depreciation charge to the canning department

This memo addresses the questions you asked about the depreciation charge against your department. Admittedly this charge of \$469,000 is very high; however, it is not intended to reflect the wear and tear which the machinery has undergone over the last year. Rather, it is a portion of the machines' cost which has been allocated to this period.

Depreciation is frequently thought to reflect an asset's loss in value over time. For financial statement purposes, however, depreciation allocates part of an asset's cost in a systematic way to each period during its useful life. Although there will always be a decline in an asset's value over time, the depreciation charge is not supposed to measure that decline; instead, it is a periodic "charge" for using purchased equipment during any given period. When you consider the effect which the alternative would have on your departmental costs—expensing the total cost for all six machines this year—I'm sure you'll agree that depreciation is more equitable.

You also mentioned that using straight-line depreciation would result in a smaller charge than would the current double-declining balance. This is true during the first years of the equipment's life. Straight-line depreciation expenses even amounts of depreciation for each canning machine's twelve-year life. Thus the straight-line charge for this and all subsequent years would be \$35,750 per machine for total annual depreciation of \$214,500.

During the earlier years of an asset's life, double-declining balance results in higher depreciation charges because it doubles the charge which would have been made under the straight-line method. However, the same percentage depreciation in the first year is applied annually to the asset's declining book value. Therefore, the double-declining balance charge becomes lower than the straight-line charge during the last several years of the asset's life. For this year, as mentioned above, the charge is \$469,000, but in subsequent years this expense will become lower. By the end of the twelfth year, the same amount of depreciation will have been taken regardless of the method used.

The straight-line method would result in fewer charges against your department this year. However, consider this: when the asset is new, additional costs for service and repairs are minimal. Thus a greater part of the asset's cost should be allocated to this optimal portion of the asset's life. After a few years, your department will have to absorb the additional burden of repair and maintenance costs. During that time, wouldn't you rather have a lower depreciation charge?

I hope that this explanation helps clarify any questions which you may have had about depreciation charges to your department.

CASE 11-5

- (a) The stakeholders are Sheffield's employees, including Williams, current and potential investors and creditors, and upper-level management.
- (b) The ethical issues are honesty and integrity in financial reporting, job security, and the external users' right to know the financial picture.

CASE 11-5 (Continued)

- (c) Williams should review the estimated useful lives and salvage values of the depreciable assets. Since they are estimates, it is possible that some *should be* changed. Any changes should be based on sound, objective information without concern for the effect on the financial statements (or anyone's job).

(Note: This case can be used with Chapter 22, Accounting Changes and Error Analysis.)

FINANCIAL REPORTING PROBLEM

- (a) 3M classifies its property, plant, and equipment under four descriptions in its supplemental balance sheet information: Land, Buildings and leasehold improvements, Machinery and equipment, and Construction in progress.**
- (b) 3M’s “depreciation is generally computed using the straight-line method based on estimated useful lives of the assets.”**
- (c) 3M depreciates its assets based on estimated useful lives ranging from 10 to 40 years for buildings and improvements and 3 to 15 years for machinery and equipment.**
- (d) Note 8, supplemental cash flow information reports depreciation of \$916 million in 2001, \$915 million in 2000, and \$822 million was charged to expense in 1999.**
- (e) The statement of cash flows reports the following additions to property, plant, and equipment: 2001, \$980 million; 2000, \$1,115 million; and 1999, \$1,050 million.**

FINANCIAL STATEMENT ANALYSIS CASE

- (a) McDonald's used the straight-line method for depreciating its property and equipment.**

- (b) Depreciation and amortization charges do not increase cash flow from operations. In a cash flow statement, these two items are often added back to net income to arrive at cash flow from operations and therefore some incorrectly conclude these expenses increase cash flow. What affects cash flow from operations are cash revenues and cash expenses. Noncash charges have no effect, except for positive tax savings generated by these charges.**

- (c) The schedule of cash flow measures indicates that cash provided by operations is expected to cover capital expenditures over the next few years, even as expansion continues to accelerate. It is obvious that McDonald's believes that cash flow measures are meaningful indicators of growth and financial strength, when evaluated in the context of absolute dollars or percentages.**

COMPARATIVE ANALYSIS CASE

(a) **Property, plant, and equipment, net of accumulated depreciation:**

Coca-Cola at 12/31/01	\$4,453 million
PepsiCo at 12/29/01	\$6,876 million

Percent of total assets:

Coca-Cola (\$4,453 ÷ \$22,417)	19.9%
PepsiCo (\$6,876 ÷ \$21,695)	31.7%

(b) **Coca-Cola and PepsiCo depreciate property, plant, and equipment principally by the straight-line method over the estimated useful lives of the assets. Depreciation expense was reported by Coca-Cola and PepsiCo as follows:**

	Coca-Cola	PepsiCo
2001	\$502 million	\$843 million
2000	465 million	840 million
1999	438 million	873 million

(c) (1) **Asset turnover:**

Coca-Cola		PepsiCo
\$20,092		\$26,935
\$22,417 + \$20,834	= .93	\$21,695 + \$20,757
2		2

COMPARATIVE ANALYSIS CASE (Continued)

(2) Profit margin:

Coca-Cola	PepsiCo
$\frac{\$3,969}{\$20,092} = 19.75\%$	$\frac{\$2,662}{\$26,935} = 9.88\%$

(3) Rate of return on assets:

Coca-Cola	PepsiCo
$\frac{\$3,969}{\frac{\$22,417 + \$20,834}{2}} = 18.35\%$	$\frac{\$2,662}{\frac{\$21,695 + \$20,757}{2}} = 12.54\%$

With the exception of the asset turnover rate, each of Coca-Cola's ratios is superior to PepsiCo's, especially the profit margin and the return on assets. This is primarily due to PepsiCo's large food business (61% of total sales) which experiences larger investments in property, plant, and equipment and lower margins in the beverage segment. Coca-Cola sales are derived almost entirely from beverages.

- (d) Coca-Cola's capital expenditures were \$769 million in 2001 while PepsiCo's capital expenditures were \$1,324 million in 2001.

Neither Coca-Cola nor PepsiCo reported capitalizing any interest as part of construction costs.

RESEARCH CASE

- (a) Ebitda is an income subtotal that adds back certain expenses. Specifically, Ebitda stands for “Earnings before interest, taxes, depreciation, and amortization.” Companies report Ebitda because it more closely approximates cash flow from operations. Some companies feel that their financial results are unfairly tainted by accounting rules calling for depreciation when in fact the infrastructure that they were depreciating was holding its value. Other companies, who had been doing acquisitions liked to focus on Ebitda because they could add back goodwill amortization, which before FAS No. 142 was amortized to expense.
- (b) The Worldcom case highlighted the importance of depreciation expense as an operating expense. Worldcom wrongly treated \$3.8 billion in certain operating expenses as capital expenditures. As a result the costs were not immediately expensed, but were subject to depreciation. While the move enhanced current earnings, it has an even more dramatic effect on Ebitda, which also excludes depreciation from the earnings measure. As a result, holders of other Ebitda-oriented stocks ditched them based on the worry that the same Ebitda-enhancing games were going on at these companies.
- (c) The biggest problem appears to be the bias in choosing which non-earnings measure to report. Investors have a growing disdain for alternative measures that exclude a wide range of costs while including all manner of gains. Many believe that net income provides a more reliable picture of a company’s financial performance. In particular, Ebitda is a poor metric for companies with high depreciation and amortization because it results in misleading comparisons to companies with lower depreciation and amortization. Some have criticized Ebitda and other pro-forma metrics because they give companies too much flexibility in deciding how to account for expenses.

INTERNATIONAL REPORTING CASE

	Nestlé	Tootsie Roll						
(a) (1) ROA	$\frac{\$4,005}{\$52,857} = 7.58\%$	$\frac{\$60,682}{\$413,924} = 14.66\%$						
<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;"></th> <th style="width: 40%; text-align: center; border-bottom: 1px solid black;">Nestlé</th> <th style="width: 45%; text-align: center; border-bottom: 1px solid black;">Tootsie Roll</th> </tr> </thead> <tbody> <tr> <td style="vertical-align: top;">(2) Profit Margin</td> <td style="text-align: center; vertical-align: middle;"> $\frac{\\$4,005}{\\$69,998} = 5.72\%$ </td> <td style="text-align: center; vertical-align: middle;"> $\frac{\\$60,682}{\\$375,594} = 16.16\%$ </td> </tr> </tbody> </table>				Nestlé	Tootsie Roll	(2) Profit Margin	$\frac{\$4,005}{\$69,998} = 5.72\%$	$\frac{\$60,682}{\$375,594} = 16.16\%$
	Nestlé	Tootsie Roll						
(2) Profit Margin	$\frac{\$4,005}{\$69,998} = 5.72\%$	$\frac{\$60,682}{\$375,594} = 16.16\%$						
(3) Asset Turnover	$\frac{\$69,998}{\$52,857} = 1.32$	$\frac{\$375,594}{\$413,924} = .91$						

Based on ROA, Tootsie Roll is performing better than Nestlé. The main driver for this difference is strong profit margin, which is over two times that of Nestlé. Even though Nestlé has a higher asset turnover (1.32 vs. .91), this results in only a 7.58% ROA when multiplied by the lower profit margin.

Summary Entry

(b)	Land and Buildings.....	1,550	
	Revaluation Reserve		1,550

(c) Relative to U.S. GAAP, an argument can be made that assets and equity are overstated. Note that in the entry in (b) above, the revaluation adjustment increases Nestlé's asset values and equity. To make Nestlé's reported numbers comparable to a U.S. company like Tootsie Roll, you would need to adjust Nestlé's assets and equity numbers downward by the amount of the revaluation reserve.

INTERNATIONAL REPORTING CASE (Continued)

For example, after adjusting Nestlé's assets downward by the amount of the revaluation reserve, Nestlé's ROA increases to:

$$\frac{\$4,005}{(\$52,857 - \$3,983)} = 8.2\%.$$

This is still lower than Tootsie Roll's ROA but the gap is narrower after adjusting for differences in revaluation.

Note to instructors: An alternative way to make Nestlé and Tootsie Roll comparable is to adjust Tootsie Roll's assets to fair values. This approach could be used to discuss the trade-off between relevance and reliability.

PROFESSIONAL SIMULATION

Explanation

- (a) The purpose of depreciation is to allocate the cost (or other book value) of tangible capital assets, less salvage, over their useful lives in a systematic and rational manner. Under generally accepted accounting principles as presently understood, depreciation accounting is a process of allocation, not of valuation, through which the productive effort (cost) is to be matched with productive accomplishment (revenue) for the period. Depreciation accounting, therefore, is concerned with the timing of the expiration of the cost of tangible plant assets.
- (b) The factors relevant in determining the annual depreciation for a depreciable asset are the initial recorded amount (cost), estimated salvage value, estimated useful life, and depreciation method.

Assets are typically recorded at their acquisition cost, which is in most cases objectively determinable, But cost assignments in other cases—“basket purchases” and the selection of an implicit interest rate in asset acquisition under deferred-payment plans—may be quite subjective, involving considerable judgment.

The salvage value is an estimate of an amount potentially realizable when the asset is retired from service. The estimate is based on judgment and is affected by the length of the useful life of the asset.

The useful life is also based on judgment. It involves selecting the “unit” of measure of service life and estimating the number of such units embodied in the asset. Such units may be measured in terms of time periods or in terms of activity (for example, years or machine hours). When selecting the life, one should select the lower (shorter) of the physical life or the economic life. Physical life involves wear and tear and casualties; economic life involves such things as technological obsolescence and inadequacy.

PROFESSIONAL SIMULATION (Continued)

Measurement

- (a) Compared to the use of an accelerated method, straight-line depreciation would result in the lowest depreciation expense and the highest income. For example, under straight-line depreciation, expense in each year would be:

$$(\$100,000 - \$10,000) / 4 = \$22,500$$

Using the double-declining balance method, depreciation expense in 2003 would be:

$$\$100,000 \times (1/4 \times 2) = \$50,000$$

Depending on the level of use in the first year, use of the units-of-production method could yield an even lower expense in the first year compared to straight-line.

- (b) Over the entire four-year period, all methods will produce the same total depreciation expense. Use of alternative methods only results in differences in timing of the depreciation charges.
- (c) All methods used for financial reporting purposes results in the same cash flow in 2003. That is, a cash outflow of \$100,000 for acquisition of the machine. However, use of an accelerated method for tax purposes, such as MACRS, results in the higher cash flow in 2003. This is because a larger tax deduction can be taken for depreciation expense, which reduces taxable income, resulting in less cash paid for taxes. Note that over the life of the asset, cash flows for taxes are the same regardless of the tax depreciation method used. Use of MACRS simply allows companies to defer tax payments.

Journal Entry

Cash	84,000	
Accumulated Depreciation.....	45,000*	
Gain on Sale of Equipment		29,000
Equipment.....		100,000

* $(\$100,000 - \$10,000) / 4 = \$22,500$ per year X 2 years (2003, 2004)

CHAPTER 12

Intangible Assets

ASSIGNMENT CLASSIFICATION TABLE

Topics	Questions	Brief Exercises	Exercises	Problems	Cases
1. Intangible assets; concepts, definitions; items comprising intangible assets.	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14		1, 2, 3, 5, 6	1, 2, 3, 4	1, 2, 3
2. Patents; franchise; organization costs; trade name.	9, 10, 13, 14, 25	1, 2, 3, 4, 5, 7, 11, 12	4, 5, 6, 7, 8, 9, 10, 11, 13	1, 2, 3, 4	1, 2
3. Goodwill.	12, 13, 14, 18	6, 8	6, 12, 13, 15	5	
4. Impairment of intangibles.	15, 16, 17, 18	7, 8	14, 15		
5. Research and development costs and similar costs.	19, 20, 21, 22, 23, 24	9, 10, 11	16, 17	1, 2, 3	4, 5
*6. Computer software costs.	26, 27, 28	13	18, 19		

*This material is covered in an Appendix to the chapter.

ASSIGNMENT CHARACTERISTICS TABLE

Item	Description	Level of Difficulty	Time (minutes)
E12-1	Classification issues—intangibles.	Moderate	15-20
E12-2	Classification issues—intangibles.	Simple	10-15
E12-3	Classification issues—intangible asset.	Moderate	10-15
E12-4	Intangible amortization.	Moderate	15-20
E12-5	Correct intangible asset account.	Moderate	15-20
E12-6	Recording and amortization of intangibles.	Simple	15-20
E12-7	Accounting for trade name.	Simple	10-15
E12-8	Accounting for organization costs.	Simple	10-15
E12-9	Accounting for patents, franchises, and R&D.	Moderate	15-20
E12-10	Accounting for patents.	Moderate	20-25
E12-11	Accounting for patents.	Moderate	15-20
E12-12	Accounting for goodwill.	Moderate	20-25
E12-13	Accounting for goodwill.	Simple	10-15
E12-14	Intangible impairment.	Simple	15-20
E12-15	Goodwill impairment.	Simple	15-20
E12-16	Accounting for R&D costs.	Moderate	15-20
E12-17	Accounting for R&D costs.	Moderate	10-15
*E12-18	Accounting for computer software costs.	Moderate	10-15
*E12-19	Accounting for computer software costs.	Moderate	15-20
P12-1	Correct intangible asset account.	Moderate	15-20
P12-2	Accounting for patents.	Moderate	20-30
P12-3	Accounting for franchise, patents, and trade name.	Moderate	20-30
P12-4	Accounting for R&D costs.	Moderate	20-25
P12-5	Goodwill, Impairment	Complex	25-30
C12-1	Accounting for pollution expenditure.	Moderate	25-30
C12-2	Accounting for pre-opening costs.	Moderate	20-25
C12-3	Accounting for patents.	Moderate	25-30
C12-4	Accounting for research and development costs.	Moderate	25-30
C12-5	Accounting for research and development costs, ethics.	Moderate	20-25

ANSWERS TO QUESTIONS

1. The two main characteristics of intangible assets are:
 - (a) they lack physical substance.
 - (b) they are not a financial instrument.
2. If intangibles are acquired for stock, the cost of the intangible is the fair value of the consideration given or the fair value of the consideration received, whichever is more clearly evident.
3. Limited-life intangibles should be amortized by systematic changes to expense over their useful life. An intangible asset with an indefinite life is not amortized.
4. When intangibles are created internally, it is often difficult to determine the validity of any future service potential. To permit deferral of these types of costs would lead to a great deal of subjectivity because management could argue that almost any expense could be capitalized on the basis that it will increase future benefits. The cost of purchased intangibles, however, is capitalized because its cost can be objectively verified and reflects its fair value at the date of acquisition.
5. Companies cannot capitalize self-developed, self-maintained, or self-created goodwill. These expenditures would most likely be reported as selling expenses.
6. Factors to be considered in determining useful life are:
 1. The expected use of the asset by the entity.
 2. The expected useful life of another asset or a group of assets to which the useful life of the intangible asset may relate.
 3. Any legal, regulatory, or contractual provisions that may limit useful life.
 4. Any legal, regulatory or contractual provisions that enable renewal or extension of the asset's legal or contractual life without substantial cost.
 5. The effect of obsolescence, demand, competition, and other economic factors.
 6. The level of maintenance expenditure required to obtain the expected future cash flows from the asset.
7. The amount of amortization expensed for a limited-life intangible asset should reflect the pattern in which the asset is consumed or used up, if that pattern can be reliably determined. If the pattern of production or consumption cannot be determined, the straight-line method of amortization should be used.
8. This trademark is an indefinite life intangible and, therefore, should not be amortized.
9. The \$190,000 should be expensed as research and development expense in 2003. The \$91,000 is expensed as selling and promotion expense in 2003. The \$45,000 of costs to legally obtain the patent should be capitalized and amortized over the useful or legal life of the patent, whichever is shorter.
10.

Patent Amortization Expense	45,000	
Patents (or Accumulated Amortization-Patents)		45,000
11. Artistic-related intangible assets involve ownership rights to plays, pictures, photographs, and video and audiovisual material. These ownership rights are protected by copyrights. Contract related intangible assets represent the value of rights that arise from contractual arrangements. Examples are franchise and licensing agreements, construction permits, broadcast rights, and service or supply contracts.

Questions Chapter 12 (Continued)

12. Varying approaches are used to define goodwill. They are
- (a) Goodwill should be measured initially as the excess of the fair value of the acquisition cost over the fair value of the net assets acquired. This definition is a measurement definition but does not conceptually define goodwill.
 - (b) Goodwill is sometimes defined as one or more unidentified intangible assets and identifiable intangible assets that are not reliably measurable. Examples of elements of goodwill include new channels of distribution, synergies of combining sales forces, and a superior management team.
 - (c) Goodwill may also be defined as the intrinsic value that a business has acquired beyond the mere value of its net assets whether due to the personality of those conducting it, the nature of its location, its reputation for skill, or any other circumstance incidental to the business and tending to make it permanent. Another definition is the capitalized value of the excess of estimated future profits of a business over the rate of return on capital considered normal in the industry.

Negative goodwill develops when the fair value of the assets purchased is higher than the cost. This situation may develop when a company fails to produce sufficient earnings to sustain a value on the business as a whole equal to the value of its separable resources and property rights or when investors are pessimistic about a company's prospects for earning revenues in the future.

13. Goodwill is recorded only when it is acquired by purchase. Goodwill acquired in a business combination is considered to have an indefinite life and therefore should not be amortized, but should be tested for impairment on at least an annual basis.
14. Many analysts believe that the value of goodwill is so subjective that it should not be given the same status as other types of assets such as cash, receivables, inventory, etc. The analysts are simply stating that they believe that presentation of goodwill on the balance sheet does not provide any useful information to the users of financial statements. Whether this is true or not is a difficult point to prove, but it should be noted that it appears contradictory to pay for the goodwill and then immediately write it off, denying that it has any value.
15. The accounting standards require that if events or changes in circumstances indicate that the carrying amount of such assets may not be recoverable, then the carrying amount of the asset should be assessed. The assessment or review takes the form of a recoverability test that compares the sum of the expected future cash flows from the asset (undiscounted) to the carrying amount. If the cash flows are less than the carrying amount, the asset has been impaired. The impairment loss is measured as the amount by which the carrying amount exceeds the fair value of the asset. The fair value of assets is measured by their market value if an active market for them exists. If no market price is available, the present value of the expected future net cash flows from the asset may be used.
16. Under U.S. GAAP, impairment losses on assets held for use may not be restored.
17. Impairment losses are reported as part of income from continuing operations, generally in the "Other expenses and losses" section. Impairment losses (and recovery of losses for assets to be disposed of) are similar to other costs that would flow through operations. Thus, gains (recoveries of losses) on assets to be disposed of should be reported as part of income from continuing operations.
18. The amount of goodwill impaired is \$20,000, computed as follows:
- | | |
|-------------------|----------------|
| Recorded goodwill | \$400,000 |
| Implied goodwill | <u>380,000</u> |
| Impaired goodwill | \$ 20,000 |

Questions Chapter 12 (Continued)

19. Research and development costs are incurred to develop new products or processes, to improve present products, or to discover new knowledge. R & D expenditures present problems of (1) identifying the costs associated with particular activities, projects, or achievements, and (2) determining the magnitude of the future benefits and the length of time over which such benefits may be realized. R & D activities may incur costs classified as follows: (a) materials, equipment, and facilities, (b) personnel, (c) purchased intangibles, (d) contract services, and (e) indirect costs.
20. (a) Personnel (labor) type costs incurred in R & D activities should be expensed as incurred.
(b) Materials and equipment costs should be expensed immediately unless the items have alternative future uses. If the items have alternative future uses, the materials should be recorded as inventories and allocated as consumed and the equipment should be capitalized and depreciated as used.
(c) Indirect costs of R & D activities should be reasonably allocated to R & D (except for general and administrative costs, which must be clearly related to be included) and expensed.
21. (a)
22. Each of these items should be charged to current operations. Advertising costs have some minor exceptions to this general rule, the specific accounting however is beyond the scope of this textbook.
23. \$605,000. (\$420,000 + \$60,000 + \$125,000)
24. These costs are referred to as start-up costs, or more specifically organizational costs in this case. The accounting for start up costs is straightforward—expense these costs as incurred. The profession recognizes that these costs are incurred with the expectation that future revenues will occur or increased efficiencies will result. However, to determine the amount and timing of future benefits is so difficult that a conservative approach—expensing these costs as incurred—is required.
25. The total life, per revised facts, is 40 years (10 + 30). There are 30 (40 – 10) remaining years for amortization purposes. Original amortization: $\frac{\$450,000}{30} = \$15,000$ per year; \$15,000 X 10 years expired = \$150,000 accumulated amortization.
- | | |
|------------------|----------------------------|
| \$450,000 | original cost |
| <u>-150,000</u> | accumulated amortization |
| <u>\$300,000</u> | remaining cost to amortize |
- \$300,000 ÷ 30 years = \$10,000 amortization for 2003 and years thereafter
- *26. The profession's position is that costs incurred internally in creating a computer software product to be sold should be charged to expense when incurred as research and development until technological feasibility has been established for the product. Technological feasibility is established upon completion of a detailed program design or, in its absence, completion of a working model. Thereafter, all software costs should be capitalized and subsequently reported at the lower of unamortized cost or net realizable value. Capitalized costs are amortized based on current and future revenue for each product with an annual minimum equal to straight-line amortization over the remaining estimated economic life of the product.

Questions Chapter 12 (Continued)

*27. Under the percent of revenue approach, \$800,000 $\left(\$4,000,000 \times \frac{\$2,000,000}{\$2,000,000 + \$8,000,000} \right)$

would be reported; under the straight-line approach, \$1,000,000 would be reported. Because the straight-line approach is higher, \$1,000,000 should be reported as R & D expense for this product.

*28. Expensing the development cost in the current year is appropriate when the costs are classified as research and development costs and the computer software is to be sold, leased, or marketed to third parties.

Capitalizing the development cost of the software package over its estimated useful life is appropriate if the costs are subsequent to achieving technological feasibility and future benefits are reasonably certain.

Damage to stakeholders occurs whenever expenses and revenues are mismatched. Inappropriate recognition of development costs can harm all parties involved due to any understatement and overstatement of income.

SOLUTIONS TO BRIEF EXERCISES

BRIEF EXERCISE 12-1

Patents	64,000	
Cash		64,000
Patent Amortization Expense	6,400	
Patents ($\$64,000 \times 1/10 = \$6,400$)		6,400

BRIEF EXERCISE 12-2

Patents	24,000	
Cash		24,000
Patent Amortization Expense	9,400	
Patents [$(\$51,200 + \$24,000) \times 1/8 = \$9,400$]....		9,400

BRIEF EXERCISE 12-3

Trade Names	60,000	
Cash		60,000
Trade Name Amortization Expense	7,500	
Trade Names ($\$60,000 \times 1/8 = \$7,500$).....		7,500

BRIEF EXERCISE 12-4

Organization Cost Expense	70,000	
Cash		70,000

BRIEF EXERCISE 12-5

Franchise.....	100,000	
Cash.....		100,000
Franchise Amortization Expense.....	9,375	
Franchise ($\$100,000 \times 1/8 \times 9/12 = \$9,375$).....		9,375

BRIEF EXERCISE 12-6

Purchase price		\$750,000
Fair value of assets	\$800,000	
Fair value of liabilities	<u>200,000</u>	
Fair value of net assets		<u>600,000</u>
Value assigned to goodwill		<u>\$150,000</u>

BRIEF EXERCISE 12-7

Loss on Impairment	220,000	
Patents ($\$330,000 - \$110,000 = \$220,000$)		220,000

Note: An impairment has occurred because expected net future cash flows (\$190,000) are less than the carrying amount (\$330,000). The loss is measured as the difference between the carrying amount and fair value (\$110,000).

BRIEF EXERCISE 12-8

Because the fair value of the division exceeds the carrying amount of the assets, goodwill is not considered to be impaired.

BRIEF EXERCISE 12-9

Research and Development Expense.....	450,000	
Cash.....		450,000

BRIEF EXERCISE 12-10

- (a) Capitalize
- (b) Expense
- (c) Expense
- (d) Expense

BRIEF EXERCISE 12-11

	<u>Carrying Amount</u>	<u>Life in Months</u>	<u>Amortization Per Month</u>	<u>Months Amortization</u>
Patent (1/1/04)	\$240,000	96	\$2,500	12
Legal costs (12/1/04)	<u>85,000</u>	85	\$1,000	1
	<u>\$325,000</u>			

Carrying amount	\$325,000
Less: Amortization Patent (12 X \$2,500)	(30,000)
Legal costs Amortization (1 X \$1,000)	<u>(1,000)</u>
Carrying amount 12/31/04	<u>\$294,000</u>

BRIEF EXERCISE 12-12

Copyright No. 1 for \$9,900 should be expensed and therefore not reported on the balance sheet.

Copyright No. 2 for \$19,200 should be capitalized. Because the useful life is indefinite, copyright No. 2 should be tested at least annually for impairment using a fair value test. It would be reflected on the December 31, 2004 balance sheet at its cost of \$19,200.

***BRIEF EXERCISE 12-13**

Percent of revenue approach

$$\$700,000 \times \frac{\$420,000}{\$1,400,000^*} = \underline{\underline{\$210,000}}$$

***(\$420,000 + \$980,000)**

Straight-line approach

$$\$700,000 \times 1/4 = \underline{\underline{\$175,000}}$$

Amortization is \$210,000

SOLUTIONS TO EXERCISES

EXERCISE 12-1 (15-20 minutes)

(a) 10, 13, 15, 16, 17, 19, 23

- (b)
1. Long-term investments in the balance sheet.
 2. Property, plant, and equipment in the balance sheet.
 3. Research and development expense in the income statement.
 4. Current asset (prepaid rent) in the balance sheet.
 5. Property, plant, and equipment in the balance sheet.
 6. Research and development expense in the income statement.
 7. Charge as expense in the income statement.
 8. Operating losses in the income statement.
 9. Charge as expense in the income statement.
 11. Not recorded; any costs related to creating goodwill incurred internally must be expensed.
 12. Research and development expense in the income statement.
 14. Research and development expense in the income statement.
 18. Research and development expense in the income statement.
 20. Research and development expense in the income statement.
 21. Long-term investments, or other assets, in the balance sheet.
 22. Expensed in the income statement.

EXERCISE 12-2 (10-15 minutes)

The following items would be classified as an intangible asset:

Cable television franchises

Film contract rights

Music copyrights

Customer lists

Goodwill

Covenants not to compete

Internet domain name

Brand names

Cash, accounts receivable, notes receivable, and prepaid expenses would be classified as current assets.

Property, plant, and equipment, and land would be classified as non-current assets in the property, plant, and equipment section.

EXERCISE 12-2 (Continued)

Investments in affiliated companies would be classified as part of the investments section of the balance sheet.

Research and development costs would be classified as an operating expense.

Discount on notes payable is shown as a deduction from the related notes payable on the balance sheet.

Organization costs are start-up costs and should be expensed as incurred.

EXERCISE 12-3 (10-15 minutes)

(a)	Trademarks	\$15,000
	Excess of cost over fair value of net assets of acquired subsidiary (goodwill)	<u>75,000</u>
	Total intangible assets	<u>\$90,000</u>

- (b) Organization costs, \$24,000, should be expensed. Discount on bonds payable, \$35,000, should be reported as a contra account to bonds payable in the long-term liabilities section.

Deposits with advertising agency for ads to promote goodwill of company, \$10,000, should be reported either as an expense or as prepaid advertising in the current assets section. Advertising costs in general are expensed when incurred or when first used.

Cost of equipment acquired for research and development projects, \$90,000, should be reported with property, plant, and equipment, because the equipment has an alternative use.

Costs of developing a secret formula for a product that is expected to be marketed for at least 20 years, \$80,000, should be classified as research and development expense on the income statement.

EXERCISE 12-4 (15-20 minutes)

- Alatorre should report the patent at \$600,000 (net of \$400,000 accumulated amortization) on the balance sheet. The computation of accumulated amortization is as follows.

Amortization for 2002 and 2003 ($\$1,000,000/10$) X 2	\$200,000
2004 amortization: $(\$1,000,000 - \$200,000) \div (6-2)$	<u>200,000</u>
Accumulated amortization, 12/31/04	<u>\$400,000</u>

- Alatorre should amortize the franchise over its estimated useful life. Because it is uncertain that Alatorre will be able to retain the franchise at the end of 2012, it should be amortized over 10 years. The amount of amortization on the franchise for the year ended December 31, 2004, is \$40,000: $(\$400,000/10)$.
- These costs should be expensed as incurred (all in 2000). Therefore there should be no organization expense reported in income for 2004.
- Because the license can be easily renewed (at nominal cost), it has an indefinite life. Thus, no amortization will be recorded. The license will be tested for impairment in future periods.

EXERCISE 12-5 (15-20 minutes)

Research and Development Expense.....	940,000	
Patents	75,000	
Rent Expense $[(5 \div 7) \times \$91,000]$	65,000	
Prepaid Rent $[(2 \div 7) \times \$91,000]$	26,000	
Advertising Expense	207,000	
Income Summary	241,000	
Discount on Bonds Payable	82,950*	
Interest Expense	1,050	
Paid in Capital in Excess of Par on Common Stock.....		250,000
Intangible Assets.....		<u>1,388,000</u>

* $84,000 \div 240 \text{ months} = \350 ; $\$350 \times 3 = \$1,050$; $\$84,000 - \$1,050 = \$82,950$

Patent Amortization Expense $[(\$75,000 \div 10) \times 1/2]$...	3,750	
Patents (or Accumulated Amortization)		<u>3,750</u>

EXERCISE 12-6 (15-20 minutes)

Patents.....	350,000	
Goodwill.....	360,000	
Franchise.....	450,000	
Copyright.....	156,000	
Research and Development Expense	215,000	
Intangible Assets		1,531,000
Amortization Expense.....	79,250	
Patents (\$350,000/8).....		43,750
Franchise (\$450,000/10 X 6/12)		22,500
Copyright (\$156,000/5 X 5/12)		13,000

Balance of Intangible Assets as of December 31, 2004

Patents =	$\$350,000 - \$43,750 = \$306,250$
Goodwill =	$\$360,000$ (no amortization)
Franchise =	$\$450,000 - \$22,500 = \$427,500$
Copyright =	$\$156,000 - \$13,000 = \$143,000$

EXERCISE 12-7 (10-15 minutes)

- (a) 2003 amortization: $\$16,000 \div 10 = \underline{\$1,600}$.
 12/31/03 book value: $\$16,000 - \$1,600 = \underline{\$14,400}$.
- 2004 amortization: $(\$14,400 + \$7,800) \div 9 = \underline{\$2,467}$.
 12/31/04 book value: $(\$14,400 + \$7,800 - \$2,467) = \underline{\$19,733}$.
- (b) 2004 amortization: $(\$14,400 + \$7,800) \div 4 = \underline{\$5,550}$.
 12/31/04 book value: $\$14,400 + \$7,800 - \$5,550 = \underline{\$16,650}$.
- (c) Carrying amount (\$19,733) > Future Cash Flows (\$16,000); thus the tradename fails the recoverability test. The new carrying value is \$15,000.
- 2005 amortization (after recording impairment loss):
 $\$15,000 \div 8 = \underline{\$1,875}$.
 12/31/05 book value: $\$15,000 - \$1,875 = \underline{\$13,125}$

EXERCISE 12-8 (10-15 minutes)

(a) Attorney's fees in connection with organization of the corporation	\$15,000
Costs of meetings of incorporators to discuss organizational activities	7,000
State filing fees to incorporate	<u>1,000</u>
Total organization costs	<u>\$23,000</u>

Drafting and design equipment, \$10,000, should be classified as part of fixed assets, rather than as organization costs.

(b) Organization Expense	23,000	
Cash (Payables)		23,000

EXERCISE 12-9 (15-20 minutes)

(a) **Jimmy Carter Company**
INTANGIBLES SECTION OF BALANCE SHEET
December 31, 2004

Patent from Ford Company, net of accumulated amortization of \$560,000 (Schedule 1)	\$1,440,000
Franchise from Reagan Company, net of accumulated amortization of \$48,000 (Schedule 2)	<u>432,000</u>
Total intangibles	<u>\$1,872,000</u>

Schedule 1 Computation of Patent from Ford Company

Cost of patent at date of purchase	\$2,000,000
Amortization of patent for 2003 ($\$2,000,000 \div 10$ years)	<u>(200,000)</u>
	1,800,000
Amortization of patent for 2004 ($\$1,800,000 \div 5$ years)	<u>(360,000)</u>
Patent balance	<u>\$1,440,000</u>

Schedule 2 Computation of Franchise from Reagan Company

Cost of franchise at date of purchase	\$ 480,000
Amortization of franchise for 2004 ($\$480,000 \div 10$)	<u>(48,000)</u>
Franchise balance	<u>\$ 432,000</u>

EXERCISE 12-9 (Continued)

**(b) Jimmy Carter Company
Income Statement Effect
For the year ended December 31, 2004**

Patent from Ford Company:		
Amortization of patent for 2004		
(\$1,800,000 ÷ 5 years)		\$360,000
Franchise from Reagan Company:		
Amortization of franchise for 2004		
(\$480,000 ÷ 10)	\$ 48,000	
Payment to Reagan Company		
(\$2,500,000 X 5%)	<u>125,000</u>	173,000
Research and development costs		<u>433,000</u>
Total charged against income		<u>\$966,000</u>

EXERCISE 12-10 (15-20 minutes)

(a)	2000	Research and Development Expense	170,000	
		Cash		170,000
		Patents	18,000	
		Cash		18,000
		Patent Amortization Expense	450	
		Patents [(\$18,000 ÷ 10) X 3/12].....		450
	2001	Patent Amortization Expense	1,800	
		Patents (\$18,000 ÷ 10)		1,800

EXERCISE 12-11 (Continued)

Patent B

Life in years	10
Life in months (12 X 10)	120
Amortization per month	\$125
Number of months amortized to date	

<u>Year</u>	<u>Month</u>
2003	6
2004	12
2005	<u>12</u>
	<u>30</u>

Book value 12/31/05 \$11,250: ($\$15,000 - [\$125 \times 30]$)

Patent C

Life in years	4
Life in months (12 X 4)	48
Amortization per month	\$300
Number of months amortized to date	

<u>Year</u>	<u>Month</u>
2004	4
2005	<u>12</u>
	<u>16</u>

Book value 12/31/05 \$9,600: ($\$14,400 - [\$300 \times 16]$)

At December 31, 2005

Patent A	\$23,700
Patent B	11,250
Patent C	<u>9,600</u>
Total	<u>\$44,550</u>

EXERCISE 12-11 (Continued)

(b) Analysis of 2006 transactions

1. The \$245,700 incurred for research and development should be expensed.
2. The book value of Patent B is \$11,250 and its estimated future cash flows are \$6,000: (3 X \$2,000) therefore Patent B is impaired. The impairment loss is imputed as follows:

Book value	\$11,250
Less: Present value of future cash flows 2,000 X 2.57710	<u>5,154</u>
Loss recognized	<u>\$ 6,096</u>

Patent B carrying amount (12/31/06) \$5,154

At December 31, 2006

Patent A	\$21,900	(\$23,700 – [12 X \$150])
Patent B	5,154	(Present value of future cash flows)
Patent C	6,000	(\$9,600 – [12 X \$300])
Patent D	<u>34,560</u>	(\$36,480 – \$1,920*)
Total	<u>\$67,614</u>	

Patent D amortization

Life in years	9 1/2
Life in months	114
Amortization per month	\$320
\$320 X 6 = \$1,920	

EXERCISE 12-12

Net assets of Zweifel as reported		\$225,000
Adjustments to fair value		
Increase in land value	30,000	
Decrease in equipment value	<u>(5,000)</u>	<u>25,000</u>
Net assets of Zweifel at fair value		250,000
Selling price		<u>350,000</u>
Amount of goodwill to be recorded		<u>\$100,000</u>

The journal entry to record this transaction is as follows:

Cash	100,000	
Land	100,000	
Building	200,000	
Equipment	170,000	
Copyright.....	30,000	
Goodwill.....	100,000	
Accounts Payable		50,000
Long-term Notes Payable.....		300,000
Cash.....		350,000

EXERCISE 12-13 (10-15 minutes)

(a) Cash	50,000	
Receivables	90,000	
Inventory	125,000	
Land	60,000	
Buildings.....	75,000	
Equipment	70,000	
Trademarks.....	15,000	
Goodwill.....	65,000	
Accounts Payable.....		200,000
Notes Payable		100,000
Cash.....		250,000

Note that the building and equipment would be recorded at the 7/1/03 cost to Brigham; accumulated depreciation accounts would not be recorded.

EXERCISE 12-13 (Continued)

(b)	Amortization Expense (Trademarks)	1,500	
	Trademarks ($[\$15,000 - \$3,000] \times \frac{1}{4} \times \frac{6}{12}$)		1,500

EXERCISE 12-14 (15-20 minutes)

(a)	December 31, 2004		
	Loss on Impairment	1,100,000*	
	Copyrights		1,100,000
	*Carrying amount	\$4,300,000	
	Fair value	<u>3,200,000</u>	
	Loss on impairment	<u>\$1,100,000</u>	
(b)	Copyright Amortization Expense	320,000*	
	Copyrights		320,000
	*New carrying amount	\$3,200,000	
	Useful life	<u>÷ 10 years</u>	
	Amortization per year	<u>\$ 320,000</u>	

(c) No entry is necessary. Restoration of any impairment loss is not permitted for assets held for use.

EXERCISE 12-15 (15-20 minutes)

(a)	December 31, 2004		
	Loss on Impairment	15,000,000	
	Goodwill		15,000,000

The fair value of the reporting unit is below its carrying value. Therefore, an impairment has occurred. To determine the impairment amount, we first find the implied goodwill. We then compare this implied fair value to the carrying value of the goodwill to determine the amount of the impairment to record.

EXERCISE 12-15 (Continued)

Fair value of division	\$335,000,000
Carrying amount of division, net of Goodwill	<u>150,000,000</u>
Implied value of Goodwill	185,000,000
Carrying value of Goodwill	<u>(200,000,000)</u>
Loss on Impairment	<u>\$ 15,000,000</u>

- (b) No entry necessary. After a goodwill impairment loss is recognized, the adjusted carrying amount of the goodwill is its new accounting basis. Subsequent reversal of previously recognized impairment losses is not permitted under SFAS No. 142.

EXERCISE 12-16 (15-20 minutes)

- (a) In accordance with FASB Statement No. 2, the \$325,000 is a research and development cost that should be charged to R & D Expense and, if not separately disclosed in the income statement, the total cost of R & D should be separately disclosed in the notes to the financial statements.

(b) Research and Development Expense.....	110,000	
Cash, Accts. Payable, etc.....		110,000
(To record research and development costs)		
 Patents	 16,000	
Cash, Accts. Payable, etc.....		16,000
(To record legal and administrative costs incurred to obtain patent #472-1001-84)		
 Patent Amortization Expense	 3,200	
Patents.....		3,200
[To record one year's amortization expense (\$16,000 ÷ 5 = \$3,200)]		

EXERCISE 12-16 (Continued)

(c) Patents	47,200	
Cash, Accts. Payable, etc.		47,200
(To record legal cost of successfully defending patent)		

The cost of defending the patent is capitalized because the defense was successful and because it extended the useful life of the patent.

Patent Amortization Expense	7,500	
Patents		7,500
(To record one year's amortization Expense: \$16,000 – \$3,200 = \$12,800; \$12,800 ÷ 8 = \$1,600 \$47,200 ÷ 8 = <u>5,900</u> Amortization expense for 2005 <u>\$7,500</u>)		

- (d) Additional engineering and consulting costs required to advance the design of a product to the manufacturing stage are R & D costs. As indicated in the chapter it is R & D because it translates knowledge into a plan or design for a new product.

EXERCISE 12-17 (10-12 minutes)

Depreciation of equipment acquired that will have alternate uses in future research and development projects over the next 5 years ($\$280,000 \div 5$)	\$ 56,000
Materials consumed in research and development projects	59,000
Consulting fees paid to outsiders for research and development projects	100,000
Personnel costs of persons involved in research and development projects	128,000
Indirect costs reasonably allocable to research and development projects	<u>50,000</u>
Total to be expensed in 2003 for research and development	<u>\$393,000</u>

***EXERCISE 12-18 (10-15 minutes)**

(a) Companies are required to use the greater of (1) the ratio of current revenues to current plus anticipated revenues (percent of revenue approach) or (b) the straight-line method over the remaining useful life of the asset to amortize capitalized computer software costs.

(b) Percent of revenue approach: $\frac{\$2,000,000}{\$12,000,000} \times \$3,600,000 = \underline{\$600,000}$

Straight-line method: $1/5 \times \$3,600,000 = \underline{\$720,000}$

Amortization for 2003 would be \$720,000 by the straight-line method because it results in the greater amount.

***EXERCISE 12-19 (15-20 minutes)**

(a)	Research and Development Expense.....	2,200,000	
	Cash.....		2,200,000

	Computer Software Costs.....	2,800,000	
	(\$5,000,000 – \$2,200,000)		
	Cash.....		2,800,000

(b)	Amortization Expense (20% X \$2,800,000).....	560,000	
	Computer Software Costs		560,000

(Percent of revenue, \$3,200,000/
\$16,000,000 = 20%; 20% X \$2,800,000 =
\$560,000; straight-line, 1/8 X \$2,800,000 =
\$350,000; use percent of revenue
approach because it's greater than
straight-line, 1/8 = 12.5%)

(c) The computer software costs should be reported in the 12/31/04 balance sheet at unamortized cost (\$2,800,000 – \$560,000 = \$2,240,000) unless net realizable value is lower.

EXERCISE 12-19 (Continued)

- (d) Delaware Enterprises should disclose in its December 31, 2004, financial statements the unamortized computer software costs included in the balance sheet presented, and the total amount charged to expense in the income statement presented for amortization of capitalized computer software costs and for amounts written down to net realizable value.**

- (e) FASB Standard No. 86 applies only to the development of computer software that is to be sold, leased, or otherwise marketed to third parties. No FASB statement specifically addresses the issue of computer software developed for internal use. In practice, such costs are generally expensed as incurred. Therefore, the total of \$5,000,000 would be expensed in (a), there would be no amortization in (b), and computer software costs would not be reported on the balance sheet in (c).**

TIME AND PURPOSE OF PROBLEMS

Problem 12-1 (Time 15-20 minutes)

Purpose—to provide the student with an opportunity to appropriately reclassify amounts charged to a single intangible asset account. Capitalized in the account are amounts representing franchise costs, prepaid rent, organization fees, prior net loss, patents, goodwill, and R & D costs. The student must also be alert to the fact that several transactions require that an adjustment of Retained Earnings be made. The problem provides a good summary of accounting for intangibles.

Problem 12-2 (Time 20-30 minutes)

Purpose—to provide the student with an opportunity to compute the carrying value of a patent at three balance sheet dates. The student must distinguish between expenditures that are properly included in the patent account and R & D costs which must be expensed as incurred. Computation of amortization is slightly complicated by additions to the account and a change in the estimated useful life of the patents. A good summary of accounting for patents and R & D costs.

Problem 12-3 (Time 20-30 minutes)

Purpose—the student determines the cost and amortization of a franchise, patent, and trademark and shows how they are disclosed on the balance sheet. The student prepares a schedule of expenses resulting from the intangibles transactions.

Problem 12-4 (Time 15-20 minutes)

Purpose—to provide the student with an opportunity to determine income statement and balance sheet presentation for costs related to research and development of patents. The problem calls on the student to determine whether costs incurred are properly capitalized or expensed. The problem addresses the basic issues involved in accounting for R & D costs and patents.

Problem 12-5 (Time 25-30 minutes)

Purpose—to provide the student with an opportunity to determine the amount of goodwill in a business combination and to determine the goodwill impairment.

SOLUTIONS TO PROBLEMS

PROBLEM 12-1

Franchises	42,000	
Prepaid Rent.....	28,000	
Retained Earnings (Organization Costs of \$6,000 in 2002)	6,000	
Retained Earnings (\$16,000 – \$6,000).....	10,000	
Patents (\$74,000 + \$12,650)	86,650	
Research and Development Expense.....		
(\$75,000 + \$160,000)	235,000	
Goodwill.....	278,400	
Intangible Assets.....		686,050
Franchise Amortization Expense (\$42,000 ÷ 8)	5,250	
Retained Earnings (\$42,000 ÷ 8 X 6/12)	2,625	
Franchises.....		7,875
Rent Expense (\$28,000 ÷ 2).....	14,000	
Retained Earnings (\$28,000 ÷ 2 X 3/12)	3,500	
Prepaid Rent		17,500
Patent Amortization Expense	8,170	
Patents.....		8,170
(\$74,000 ÷ 10) + (\$12,650 X 7/115)		

Note—No amortization of goodwill; goodwill should be tested for impairment on at least an annual basis in future periods.

PROBLEM 12-2

(a)	Costs to obtain patent Jan. 1996	\$62,050
	1996 amortization ($\\$62,050 \div 17$)	<u>(3,650)</u>
	Carrying value, 12/31/96	<u>\$58,400</u>

All costs incurred prior to January 1996 are related to research and development activities and were expensed as incurred in accordance with FASB Statement No. 2.

(b)	1/1/97 carrying value of patent		\$58,400
	1997 amortization ($\\$62,050 \div 17$)	\$3,650	
	1998 amortization	<u>3,650</u>	<u>(7,300)</u>
			51,100
	Legal fees to defend patent 12/98		<u>35,700</u>
	Carrying value, 12/31/98		86,800
	1999 amortization ($\\$86,800 \div 14$)	6,200	
	2000 amortization	<u>6,200</u>	<u>(12,400)</u>
	Carrying value, 12/31/00		<u>\$74,400</u>

The costs incurred in 1997 and 1999 are related to research and development activities as defined in FASB Statement No. 2 and are expensed as incurred.

(c)	1/1/01 carrying value		\$74,400
	2001 amortization ($\\$74,400 \div 5$)	\$14,880	
	2002 amortization	14,880	
	2003 amortization	<u>14,880</u>	<u>(44,640)</u>
	Carrying value, 12/31/03		<u>\$29,760</u>

The legal costs in 2003 were expensed because the suit was unsuccessful.

PROBLEM 12-3

(a) **Haerhpin Corporation**
Intangible Assets
December 31, 2004

Franchise, net of accumulated amortization of \$5,870 (Schedule 1)	\$52,830
Patent, net of accumulated amortization of \$1,700 (Schedule 2)	11,900
Trademark, net of accumulated amortization of \$5,840 (Schedule 3)	<u>34,320</u>
Total intangible assets	<u>\$99,050</u>
<u>Schedule 1</u>	<u>Franchise</u>
Cost of franchise on 1/1/04 (\$15,000 + \$43,700)	\$58,700
2004 amortization (\$58,700 X 1/10)	<u>(5,870)</u>
Cost of franchise, net of amortization	<u>\$52,830</u>
<u>Schedule 2</u>	<u>Patent</u>
Cost of securing patent on 1/2/04	\$13,600
2004 amortization (\$13,600 X 1/8)	<u>(1,700)</u>
Cost of patent, net of amortization	<u>\$11,900</u>
<u>Schedule 3</u>	<u>Trademark</u>
Cost of trademark on 7/1/01	\$32,000
Amortization, 7/1/01 to 7/1/04 (\$32,000 X 3/20)	<u>(4,800)</u>
Book value on 7/1/04	27,200
Cost of successful legal defense on 7/1/04	<u>8,160</u>
Book value after legal defense	35,360
Amortization, 7/1/04 to 12/31/04 (\$35,360 X 1/17 X 6/12)	<u>(1,040)</u>
Cost of trademark, net of amortization	<u>\$34,320</u>

PROBLEM 12-3 (Continued)

(b) Haerhpin Corporation
Expenses Resulting from Selected Intangible Assets Transactions
For the Year Ended December 31, 2004

Interest expense ($\$43,700 \times 14\%$)	\$ 6,118
Franchise amortization (Schedule 1)	5,870
Franchise fee ($\$950,000 \times 5\%$)	47,500
Patent amortization (Schedule 2)	1,700
Trademark amortization (Schedule 4)	<u>1,840</u>
Total intangible assets	<u>\$63,028</u>

Note: The \$65,000 of research and development costs incurred in developing the patent would have been expensed per FASB No. 2 prior to 2004.

<u>Schedule 4</u>	<u>Trademark Amortization</u>	
Amortization, 1/1/04 to 6/30/04 ($\$32,000 \times 1/20 \times 6/12$)		\$ 800
Amortization, 7/1/04 to 12/31/04 ($\$35,360 \times 1/17 \times 6/12$)		<u>1,040</u>
Total trademark amortization		<u>\$1,840</u>

PROBLEM 12-4

- (a) **Income statement items and amounts for the year ended December 31, 2003:**

Research and development expenses*	\$286,000
Amortization of patent (\$80,000 ÷ 10 years)	8,000

*The research and development could be listed by the components rather than in one total. The detail of the research and development expenses are as follows:

Depreciation—building	\$ 14,000
(\$280,000 ÷ 20 years)	
Salaries and employee benefits	195,000
Other expenses	77,000

- (b) **Balance sheet items and amounts as of December 31, 2003:**

Land	\$ 60,000
Building (net of accumulated depreciation of \$14,000)	266,000
Patent (net of amortization of \$14,000)*	66,000

* $([\$80,000 \div 10] \times 3/4) + (\$80,000 \div 10)$

All research and development costs should be charged to expense when incurred (see Statement of Financial Accounting Standard No. 2, “Accounting for Research and Development Costs”). Therefore, all of Florence Nightingale Tool Company’s costs related to its research and development activities for 2003 would be expensed regardless of the long-term benefits.

The patent was acquired for manufacturing rights rather than for use in research and development activities. Consequently, the cost of the patent can be capitalized as an intangible asset and amortized over its useful life.

PROBLEM 12-5

(a) Goodwill = Fair value of the division less the fair value of the identifiable assets:

$$\$3,000,000 - \$2,650,000 = \$350,000$$

(b) No impairment loss is recorded, because the fair value of Mendota (\$1,850,000) is greater than carrying value of the net assets (\$1,650,000).

(c) Computation of impairment:

Implied Fair value of goodwill = Fair value of division less the carrying value of the division (adjusted for fair value changes), net of goodwill:

Fair value of Mendota division		\$1,500,000
Carrying value of division	\$1,650,000	
Increase in fair value of PP&E	150,000	
Less Goodwill	(350,000)	
Patents (\$74,000 + \$12,650)		<u>(1,450,000)</u>
Implied fair value of Goodwill		50,000
Carrying value of Goodwill		<u>(350,000)</u>
Impairment loss		<u>(\$300,000)</u>

(d) Loss on Impairment.....	\$300,000	
Goodwill.....		300,000

This loss will be reported in income as a separate line item before the subtotal "income from continuing operations."

TIME AND PURPOSE OF CASES

Case 12-1 (Time 25-30 minutes)

Purpose—to provide the student with an opportunity to discuss the conceptual merits and reporting requirements of three methods of accounting for a penalty assessment. The student is required to evaluate the merits of expensing the item currently, treating it as a prior period adjustment, or capitalizing the amount of the penalty and amortizing it over future periods. This case presents a good illustration of a realistic situation in which the accountant faces the question of capitalizing or expensing an expenditure. It should be emphasized that a thorough justification for each method should be presented.

Case 12-2 (Time 20-25 minutes)

Purpose—to provide the student with an opportunity to determine the proper classification of certain expenditures related to organizing a business. The student is required to deal with such issues as costs incurred for interest expense during construction, the cost of promotional advertising, and expenditures related to obtaining tenants for a shopping center. Classification of these items is complicated due to a postponement in the starting of business operations. A challenging and interesting case which should provide good background for a discussion of the theoretical support for capitalizing organization costs.

Case 12-3 (Time 25-30 minutes)

Purpose—to present an opportunity for the student to discuss accounting for patents from a theoretical and a practical viewpoint. The student is required to explain the “discounted value of expected net receipts” method of accounting for patents and to provide support for using cost as the generally accepted valuation method. The student is also required to comment on the theoretical basis of patent amortization. Finally the student must determine proper disclosure in the financial statements for a patent infringement suit which is in progress at the balance sheet date. This case challenges the student to present theoretical support and practical application beyond that presented in the text.

Case 12-4 (Time 25-30 minutes)

Purpose—to provide the student with an opportunity to discuss the theoretical support for and practical applications of the FASB’s position on research and development costs. The student is required to define the terms “research” and “development” as used by the FASB in **Statement No. 2**, to provide theoretical support for the FASB’s position, and to apply the provisions of **Statement No. 2** to a situation presented in the case. A good case to thoroughly cover research and development costs.

Case 12-5 (Time 25-30 minutes)

Purpose—to provide the student with an opportunity to examine the ethical issues related to expensing research and development costs.

SOLUTIONS TO CASES

CASE 12-1

(a) Accounting for the penalty as a charge to the current period is justified if the penalty is considered the result of an unusual event (the assessment) occurring within the period. The penalty is an extraordinary item rather than a part of income before extraordinary items, since it is material and is unusual and infrequent in occurrence. Installation of the air pollution control equipment should prevent the assessment of further penalties. This is probably the most preferable treatment of the three under consideration.

(b) Accounting for the penalty as a correction of prior periods is justified if the penalty is considered a result of the business activities of prior periods, rather than a result of an event of the current period. The penalty is assessed to correct damage which occurred as a result of production of prior periods and thus represents a cost of production which was omitted from the reported results of those prior periods. Further justification is provided by the fact that determination of the amount of the penalty was presumably made by someone other than management (the Pollution Control Agency) and could not be reasonably estimated before determination.

A prior period adjustment should be reported as an adjustment of the current year's beginning balance of retained earnings, as previously reported. If statements of prior periods are presented, they should be restated to include in income before extraordinary items the portion of the penalty allocable to each period, with appropriate adjustments to other items affected, such as retained earnings, liabilities, and earnings per share.

(c) Accounting for the penalty as a capitalizable item to be amortized over future periods is justified if the penalty is viewed as a payment made to benefit future periods. If the penalty is not paid, Mickelson Company will not be allowed to operate in future periods; thus, the penalty is similar to a license to do business. Since the amortized expense will recur from period to period, it should be included in income before extraordinary items. Amortization should be computed in a rational and systematic manner.

CASE 12-2

Interest on mortgage bonds. An amount equal to the interest cost incurred in 2002 (\$720,000) is a cost which can be associated with the normal construction period and can be regarded as a normal element of the cost of the physical assets of the shopping center because the construction period would have ended at the end of the year if the tornado had not occurred. The decision to use debt capital to finance the shopping center was made with full knowledge that interest would accrue during the construction period and add to the total cost of building the center, bringing it to the point at which it would produce revenue. The future income to be generated by the shopping center must have been estimated to be more than sufficient to recover all of the expected costs of building the center and preparing it for occupancy, including interest during the construction period.

In lieu of treating interest during construction as an element of the cost of the physical assets, it can be argued that it represents an element of the general cost of bringing the business to the point of revenue production and should therefore be treated as an organization expense. This view regards interest during construction as just another of the many expenditures that are necessary to acquire and organize the physical assets of a new business but do not attach to any specific assets.

Note that **FASB Statement No. 34** requires that interest be capitalized in this situation because the building requires a period of time to get it ready for its intended use.

CASE 12-2 (Continued)

The amount of interest cost for the first nine months of 2003 is the measure of the 2003 loss resulting from the tornado. The extension of the construction period to October 2003 because of the tornado does not warrant its capitalization as construction period interest. It is in effect an uninsured loss resulting from the tornado. Had it not been for the tornado, the entire amount would have been a normal operating expense chargeable against the rental revenue that would have been earned during the first nine months of 2003.

Cost of obtaining tenants. Both the 2002 and 2003 costs of obtaining tenants should be expensed as incurred. The cost of obtaining tenants is a start-up cost. The accounting for start-up costs is straightforward—expense these costs as incurred. The profession recognizes that these costs are incurred with the expectation that future revenues will occur or increased efficiencies will result. However, to determine the amount and timing of future benefits is so difficult that a conservative approach—expense these costs as incurred—is required.

Promotional advertising. The profession has concluded that, except in limited situations, future benefits from advertising are not sufficiently defined or measurable with a degree of reliability that is required to recognize these costs as an asset. As a result, the costs should be expensed as incurred or the first time the advertising takes place. The advertising costs incurred in 2003 might be reported as a loss to indicate that an unusual event caused this additional expense.

CASE 12-3

(a) A dollar to be received in the future is worth less than a dollar received today because of an interest or discount factor—often referred to as the time value of money. The discounted value of the expected royalty receipts can be thought of either in terms of the present value of an annuity of 1 or in terms of the sum of several present values of 1.

(b) If the royalty receipts are expected to occur at regular intervals and the amounts are to be fairly constant, their discounted value can be calculated by multiplying the value of one such receipt by the present value of an annuity of 1 for the number of periods the receipts are expected. On the other hand, if receipts are expected to be irregular in amount or if they are to occur at irregular intervals, each expected future receipt would have to be multiplied by the present value of 1 for the number of periods of delay expected. In each case some interest rate (discount factor) per period must be assumed and used. As an example, if receipts of \$10,000 are expected each six months over the next ten years and an 8% annual interest rate is selected, the present value of the twenty \$10,000 payments is equal to \$10,000 times the present value of an annuity of 1 for 20 periods at 4%. Twice as many periods as years and half the annual interest rate of 8% are used because the payments are expected at semiannual intervals. Thus the discounted (present) value of these receipts is \$135,903 (\$10,000 X 13.5903). Because of the interest rate, this discounted value is considerably less than the total expected collection of \$200,000. Continuing the example, if instead it is expected that \$10,000 will be received six months hence, \$20,000 one year from now, and a terminal payment of \$15,000 is expected 18 months hence, the calculation is as follows:

$$\begin{aligned} \$10,000 \times \text{present value of 1 at 4\% for 1 period} &= \$10,000 \times .96154 = \$9,615. \\ \$20,000 \times \text{present value of 1 at 4\% for 2 periods} &= \$20,000 \times .92456 = \$18,491. \\ \$15,000 \times \text{present value of 1 at 4\% for 3 periods} &= \$15,000 \times .88900 = \$13,335. \end{aligned}$$

Adding the results of these three calculations yields a total of \$41,441 (rounded), considerably less than the \$45,000 total collections, again due to the discount factor.

CASE 12-3 (Continued)

(c) The basis of valuation for patents that is generally accepted in accounting is cost. Evidently the cartons were developed and the patents obtained directly by the client corporation. Those costs related to the research and development of the cartons must be expensed in accordance with **FASB Statement No. 2**. The costs of securing the patent should be capitalized. If the infringement suit is unsuccessful, an evaluation of the value of the patent should be made to ascertain the reasonableness of carrying forward the patent cost. If the suit is successful, the attorney's fees and other costs of protecting the patent should be capitalized and amortized over its remaining useful or legal life, whichever is shorter.

(d) Intangible assets represent rights to future benefits. The ideal measure of the value of intangible assets is the discounted present value of their future benefits. For Bearcat Company, this would include the discounted value of expected net receipts from royalties, as suggested by the financial vice-president, as well as the discounted value of the expected net receipts to be derived from Bearcat Company's production. Other valuation bases that have been suggested are current cash equivalent or fair market value.

(e) The amortization policy is implied in the definition of intangible assets as rights to future benefits. As the benefits are received by the firm, the cost or other value should be charged to expense or to inventory to provide a proper matching of revenues and expenses. Under the discounted value approach, the periodic amortization would be the decline during the year in the present value of expected net receipts.

(f) The litigation can and should be mentioned in notes to the financial statements. Some indication of the expectations of legal counsel in respect to the outcome can properly accompany the statements. It would be inappropriate to record a contingent asset reflecting the expected damages to be recovered. Costs incurred to September 30, 2003, in connection with the litigation should be carried forward and charged to expense (or to loss if the cases are lost) as royalties (or damages) are collected from the parties against whom the litigation has been instituted; however, the conventional treatment would be to charge these costs as ordinary legal expenses. If the final outcome of the litigation is successful, the costs of prosecuting it should be capitalized. Similarly, if the client were the successful defendant in an infringement suit on these patents, the generally accepted accounting practice would be to add the costs of the legal defense to the Patents account.

Developments between the balance sheet date and the date that the financial statements are released would properly be reflected in notes to the statements as post-balance sheet (or subsequent events) disclosure.

CASE 12-4

(a) **Research**, as defined in **Statement of Financial Accounting Standards No. 2**, is "planned search or critical investigation aimed at discovery of new knowledge with the hope that such knowledge will be useful in developing a new product or service...or a new process or technique...or in bringing about a significant improvement to an existing product or process."

Development, as defined in **Statement of Financial Accounting Standards No. 2**, is "the translation of research findings or other knowledge into a plan or design for a new product or process or for a significant improvement to an existing product or process whether intended for sale or use."

(b) The current accounting and reporting practices for research and development costs were promulgated by the Financial Accounting Standards Board (FASB) in order to reduce the number of alternatives that previously existed and to provide useful financial information about research and development costs. The FASB considered four alternative methods of accounting: (1) charge all costs

CASE 12-4 (Continued)

to expense when incurred, (2) capitalize all costs when incurred, (3) selective capitalization, and (4) accumulate all costs in a special category until the existence of future benefits can be determined. The FASB concluded that all research and development costs should be charged to expense as incurred. (**Statement of Financial Accounting Standards No. 2** does not apply to activities that are unique to enterprises in the extractive industries. Accounting for the costs of research and development activities conducted for others under a contractual arrangement is a part of accounting for contracts in general and is beyond the scope of that statement.)

In reaching this decision, the FASB considered the three pervasive principles of expense recognition: (1) associating cause and effect, (2) systematic and rational allocation, and (3) immediate recognition. The FASB found little or no evidence of a direct causal relationship between current research and development expenditures and subsequent future benefits. The high degree of uncertainty surrounding future benefits, if any, of individual research and development projects make it doubtful that there is any useful purpose to be served by capitalizing the costs and allocating them over future periods. In view of the above, the FASB concluded that the first two principles of expense recognition do not apply, but rather that the “immediate recognition” principle of expense recognition should apply.

The high degree of uncertainty about whether research and development expenditures will provide any future benefits, the lack of objectivity in setting criteria, and the lack of usefulness of the resulting information led the FASB to reject the alternatives of capitalization, selective capitalization, and accumulation of costs in a special category.

(c) In accordance with **Statement No. 2** of the Financial Accounting Standards Board, the following costs attributable only to research and development should be expensed as incurred:

Design and engineering studies.

Prototype manufacturing costs.

Administrative costs related solely to research and development.

The cost of equipment produced solely for development of the product (\$315,000).

The remaining \$585,000 of equipment should be capitalized and shown on the statement of financial position at cost, less accumulated depreciation. The depreciation expense resulting from the current year is a part of research and development expense for the year. The market research direct costs and related administrative expenses are not research and development costs. These costs are treated as period costs and are shown as expense items in the current income statement.

CASE 12-5

(a) Investors and creditors are concerned with corporate profits, dividends, and cash flow. Employees in Waveland Corporation’s R&D department are concerned about job security if the company begins to hire outside firms rather than have work done internally. Santo must be concerned with his performance and reputation within the company as well.

(b) Ethical issues include long-term versus short-term profits, concern for job security, loyalty to fellow employees, and an efficient operation.

(c) Santo should do what is best for Waveland Corporation in the long run. He should choose to have the project done where the work will be done well and at the lowest cost. Whether expenses will appear in the income statement immediately or will be capitalized and allocated over a period of years should NOT be the driving factor in making the decision. He should be able to explain his decision to higher-ups and illustrate the different required accounting treatments. He also should give some thought to the impact on employee morale if he does not use the company’s own R&D department.

FINANCIAL REPORTING PROBLEM

- (a) 3M reports Goodwill of \$984 million of 2001. 3M reports Patents of \$141 million, Tradenames of \$52 million, and Other Intangible assets of \$36 million in 2001.
- (b) 3M spent \$1,084 million on research and development in 2001 and \$1,101 million in 2000.

In 2001, 3M spent 6.74% ($\$1,084/\$16,079$) of its sales on research and development costs. As a percent of net income, it spent an amazing 75.8% ($\$1,084/\$1,430$) of its net income on research and development. For 2000, the figures were 6.58% ($\$1,101/\$16,724$) of sales and 61.8% ($\$1,101/\$1,782$) of net income.

FINANCIAL STATEMENT ANALYSIS CASE

MERCK AND JOHNSON & JOHNSON

- (a) The primary intangible assets of a healthcare products company would probably be patents, goodwill and trademarks. The nature of each of these is quite different; thus, an investor would normally want to know what the composition of intangible assets is if it is material.
- (b) Many corporate executives complain that investors are too concerned about the short-term and don't reward good long-term planning. As a consequence, they feel that the requirement that research and development expenditures be expensed immediately penalizes those executives who do invest in the future. As a consequence, when net income does not look good, it is always tempting to cut research and development expenditures, since this will cause a direct increase in current year reported profits. Of course, it will also diminish the company's long-term prospects.
- (c) If a company reports goodwill on its balance sheet, it can only have resulted from one thing—the company must have purchased another company. This is because companies are not allowed to record internally created goodwill. They can only report purchased goodwill. Ironically, if you want to report a large amount of goodwill, all you have to do is overpay when you purchase another company—the more you overpay, the more goodwill you will report. Obviously, reporting a lot of goodwill is not such a good thing.

COMPARATIVE ANALYSIS CASE

- (a) (1) **Coca-Cola reports: Trademarks and Other Intangible Assets . . . \$2,579M.**
PepsiCo reports: Intangible Assets, net . . . \$4,841M.
- (2) **Coca-Cola: Intangible assets are 11.5% of total assets.**
PepsiCo: Intangible assets are 22.3% of total assets.
- (3) **At Coca-Cola, intangible assets increased \$662M from \$1,917M to \$2,579M.**
At PepsiCo, intangibles increased \$127M from \$4,714M to \$4,841M.
- (b) (1) **Coca-Cola amortizes its intangibles “on a straight-line basis over the estimated future periods to be benefited (not exceeding 40 years).” PepsiCo amortizes trademarks and brands on a straight-line basis over 20–40 years. PepsiCo amortizes other identifiable intangibles “on a straight-line basis over their estimated useful lives, generally ranging from 5 to 20 years.**
- (2) **Coca-Cola had accumulated amortization of \$285M and \$192M on December 31, 2001 and 2000, respectively. PepsiCo had accumulated amortization of \$1 billion and \$0.9 billion at year-end 2001 and 2000, respectively.**
- (3) **Coca-Cola did not indicate the composition of its intangible assets other than in its balance sheet description “Trademark and Other Intangible Assets.” PepsiCo identified its intangible assets as follows (\$ millions):**

Goodwill	\$3,374
Trademarks and brands	1,320
Other identifiable intangibles	<u>147</u>
	<u>\$4,841</u>

- (c) **The \$662 million increase in Coca-Cola’s intangible assets was caused primarily by acquisitions of trademarks and bottling companies totaling \$651 million.**

RESEARCH CASE

- (a) It would appear, that under French GAAP, goodwill is accounted for similar to the way it was under U.S. GAAP before *FASB No. 142*. That is, goodwill was recorded at acquisition of another company and amortized to expense gradually. Unlike the new rules, prior U.S. and current French GAAP (did) do not have periodic impairment tests. The other adjustment mentioned in the story concerns the accounting for Vivendi debt. While not explained in the article, a review of Vivendi's 20-F filing with the SEC indicates that this adjustment relates to adoption of *FASB No. 133 (Accounting for Derivatives)*. Apparently, Vivendi is involved in a number of derivative transactions, which are off-balance sheet transactions under French GAAP.
- (b) According to some analysts, the goodwill write-off represents a non-cash charge that the market had already mostly priced into Vivendi's share price. The write-off represents 30% of Vivendi's overall goodwill but Vivendi's shares have declined over 50% since the end of 2000. In contrast, others believe that goodwill write-offs are very informative because they amount to an acknowledgement by management that the assets acquired in a business combination will not generate as much cash in the future as previously predicted.
- (c) Media companies use a profitability measure, Ebitda, which stands for earnings before interest, taxes, depreciation, and *amortization*. This is one of the pro-forma measures discussed elsewhere in the text (see, e.g. Chapter 4). Because Ebitda adds back amortization expense to bottom line net income, and because under U.S. GAAP goodwill is no longer amortized, the change to U.S. GAAP will reduce the difference between bottom line income and Ebitda. However, it is likely that companies will treat goodwill write-offs within pro-forma measures, such as Ebitda, similar to the way they treat other one-time items—they will add them back to make pro-forma income measures higher.

Note to Instructors: Instructors may want to remind students that pro-forma measures such as Ebitda, are not GAAP. Such measures represent a form of voluntary disclosure. Except for SEC rules requiring companies to reconcile GAAP and pro-forma measures, when reported, there are no accounting standards for pro-forma measures.

INTERNATIONAL REPORTING CASE

(a) $\text{ROE} = \text{Net Income} \div \text{Equity}$

Bayer— $3,157 \div 24,991 = 12.63\%$

Smithkline— $606 \div 1,747 = 34.69\%$

Merck— $5,248 \div 31,853 = 16.48\%$

Based on ROE, Smithkline Beecham exhibits the strongest profitability of these three companies at 35%. Bayer reports the lowest ROE at 13%. Examining the trend for each company and comparing it to other companies in the same country would also be useful in comparing these companies' profitabilities.

(b) The non-U.S. companies indicate that goodwill may be amortized over a range of periods—up to 20 years in Germany and the U.K. Goodwill amortization is not allowed under U.S. GAAP. Thus, even if all companies use the maximum amortization period, it would be difficult to compare their amortization expenses and income measures.

Even if international accounting standard-setters agree on using the same maximum amortization periods for goodwill, depending on the nature of the goodwill elements, some companies may choose shorter periods than the maximum, thereby resulting in lack of comparability.

INTERNATIONAL REPORTING CASE (Continued)

(c) Goodwill adjustments:

Related information	Bayer (DM millions)	Smithkline Beecham (Pounds millions)	Merck (\$ millions)
(a) Amortization Expense	136	69	0
(b) Net Income	3,157	606	5,248
Adjusted Income (a+b)	3,293	675	5,248
(c) Accumulated Goodwill Amortization	306	313	0
(d) Stockholders' Equity	24,991	1,747	31,853
Adjusted SE (c+d)	25,297	2,060	31,853
ROE (from ref. a)	12.63%	34.69%	16.48%
Adjusted ROE (a+b) ÷ (c+d)	13.02%	32.77%	16.48%

Making these adjustments results in an improved ROE for Bayer, while Smithkline's ROE declines. This is due to the relatively large goodwill asset that has been written off by Smithkline. Merck's ROE remains the same since it does not amortize goodwill per FASB No. 141. Some analysts believe that goodwill should not be written off unless it is impaired. Per Statement of Financial Accounting Standards No. 141, a Business Combinations' Goodwill is no longer amortized and is written off only if it is impaired. If written off, this understates assets and equity, resulting in an overstatement of profitability measures such as ROE and return on assets. This denominator effect can be more pronounced than the effects of amortization expense on income in the numerator of these ratios.

PROFESSIONAL SIMULATION

Journal Entries

January 2, 2004

Patents	80,000	
Cash.....		80,000

July 1, 2004

Patents	11,400	
Cash.....		11,400

December 31, 2004

Amortization Expense	8,600	
Patents		8,600

Computation of patent expense:

\$80,000 X 12/120 =	\$8,000
\$11,400 X 6/114 =	<u>600</u>
Total	<u>\$8,600</u>

Measurement

Computation of impairment loss:

Cost	\$42,000
Less: Accumulated amortization	<u>7,875*</u>
Book value	<u>\$34,125</u>

*\$42,000 X 18/96 = \$7,875

PROFESSIONAL SIMULATION (Continued)

The book value of \$34,125 is greater than net cash flows of \$25,000. Therefore the franchise is impaired. The impairment loss is computed as follows:

Book value	\$34,125
Fair value	<u>13,000</u>
Loss on impairment	<u>\$21,125</u>

Financial Statements

Intangible assets as of December 31, 2003

Franchise	<u>\$39,375*</u>
*Cost	\$42,000
Less: Accumulated amortization	<u>2,625**</u>
Total	<u>\$39,375</u>

**\$42,000 X 6/96 = \$2,625

Note that the net loss and all organization costs are expensed in 2003.

Intangible assets as of December 31, 2004:

Franchise	\$ 13,000	
Patents	82,800	(\$80,000 + \$11,400 – \$8,600)
Goodwill	<u>180,000</u>	
Total Intangible Assets	<u>\$275,800</u>	

Note that all the costs to develop the secret formula and the research and development costs are expensed as incurred.

CHAPTER 13

Current Liabilities and Contingencies

ASSIGNMENT CLASSIFICATION TABLE

Topics	Questions	Brief			Cases
		Exercises	Exercises	Problems	
1. Concept of liabilities; definition and classification of current liabilities.	1, 2, 3, 4, 5, 6, 8		1, 16	1, 2	1
2. Accounts and notes payable; dividends payable.	7, 11, 29	1, 2, 3	2, 16	1, 2	1, 2
3. Short-term obligations expected to be refinanced.	9, 10	4	3, 4		3, 4
4. Deposits and advance payments.	12	5			2
5. Compensated absences.	13, 14, 15	8	5, 6, 16		
6. Collections for third parties.	16	6, 7, 8	7, 8, 9, 16	3, 4	
7. Contingent liabilities (General).	17, 18, 19, 20, 22	10, 11	13, 16	10, 11, 13	5, 6, 7
8. Guaranties and warranties.	21, 23	13, 14	10, 11, 16	5, 6, 7, 12	7, 8
9. Premiums and awards offered to customers.	24, 25	15	12, 15, 16	8, 19, 12	
10. Self-insurance, litigation, claims, and assessments, asset retirement obligations.	26, 27, 28	12	14	2, 10, 11, 13	6, 7
11. Presentation and analysis.	29, 30, 31		17, 18, 19	9	3
*12. Bonus payments.		9, 16	20, 21, 22	14, 15	

*This material is covered in an Appendix to the chapter.

ASSIGNMENT CHARACTERISTICS TABLE

Item	Description	Level of Difficulty	Time (minutes)
E13-1	Balance sheet classification of various liabilities.	Simple	10-15
E13-2	Accounts and notes payable.	Moderate	15-20
E13-3	Refinancing of short-term debt.	Simple	15-12
E13-4	Refinancing of short-term debt.	Simple	20-25
E13-5	Compensated absences.	Moderate	25-30
E13-6	Compensated absences.	Moderate	25-30
E13-7	Adjusting entry for sales tax.	Simple	5-7
E13-8	Payroll tax entries.	Simple	10-15
E13-9	Payroll tax entries.	Simple	15-20
E13-10	Warranties.	Simple	10-15
E13-11	Warranties.	Moderate	15-20
E13-12	Premium entries.	Simple	15-20
E13-13	Contingencies.	Moderate	20-30
E13-14	Asset retirement obligations	Moderate	25-30
E13-15	Premiums.	Moderate	20-30
E13-16	Financial statement impact of liability transactions.	Moderate	30-35
E13-17	Ratio computations and discussion.	Simple	10-15
E13-18	Ratio computations and analysis.	Simple	20-25
E13-19	Ratio computations and effect of transactions.	Moderate	15-25
*E13-20	Bonus computation.	Simple	10-15
*E13-21	Bonus computation and income statement preparation.	Simple	15-20
*E13-22	Bonus compensation.	Moderate	15-20
P13-1	Current liability entries and adjustments.	Simple	25-30
P13-2	Current liability entries and adjustments.	Simple	25-35
P13-3	Payroll tax entries.	Moderate	20-30
P13-4	Payroll tax entries.	Simple	20-25
P13-5	Warranties, accrual and cash basis.	Simple	15-20
P13-6	Extended warranties.	Simple	10-20
P13-7	Warranties, accrual and cash basis.	Moderate	25-35
P13-8	Premium entries.	Moderate	15-25
P13-9	Premium entries and financial statement presentation.	Moderate	30-45
P13-10	Loss contingencies: entries and essay.	Simple	25-30
P13-11	Loss contingencies: entries and essays.	Moderate	35-45
P13-12	Warranties and premiums.	Moderate	20-30
P13-13	Loss contingencies, warranties, litigation.	Moderate	25-35
*P13-14	Bonus computation.	Simple	25-30
*P13-15	Warranty, bonus, and coupon computation.	Moderate	20-25
C13-1	Nature of liabilities.	Moderate	20-25
C13-2	Current versus noncurrent classification.	Moderate	15-20
C13-3	Refinancing of short-term debt.	Moderate	30-40
C13-4	Refinancing of short-term debt.	Moderate	20-25
C13-5	Loss contingencies.	Simple	15-20
C13-6	Loss contingencies.	Simple	15-20
C13-7	Warranties and loss contingencies.	Simple	15-20
C13-8	Warranties, ethics	Moderate	20-25

ANSWERS TO QUESTIONS

1. Current liabilities are obligations whose liquidation is reasonably expected to require use of existing resources properly classified as current assets or the creation of other current liabilities. Long-term debt consists of all liabilities not properly classified as current liabilities.
2. You might explain to your friend that the accounting profession prepares financial statements somewhat in accordance with the broad or loose definition of a liability submitted by the AICPA in 1953: "Something represented by a credit balance that is or would be properly carried forward upon a closing of books of account according to the rules or principles of accounting, provided such credit balance is not in effect a negative balance applicable to an asset. Thus the word is used broadly to comprise not only items which constitute liabilities in the proper sense of debts or obligations (including provision for those that are unascertained), but also credit balances to be accounted for which do not involve the debtor and creditor relation."

Since your friend may not have completely understood the above definition (if it may be called that), you might indicate that more recent definitions of liabilities call for the disbursement of assets or services in the future and that the present value of all of a person's or company's future disbursements of assets constitutes the total liabilities of that person or company. But, accountants quantify or measure only those liabilities or future disbursements which are discernible or reasonably determinable at the present time. And, accountants have accepted the completed transaction as providing the objectivity or basis necessary for financial recognition. Therefore, a liability may be viewed as an obligation to convey assets or perform services at some time in the future and is based upon a past or present transaction or event. A formal definition of liabilities presented in **Concepts Statement No. 6** is as follows: Probable future sacrifices of economic benefits arising from present obligations of a particular entity to transfer assets or provide services to other entities in the future as a result of past transactions or events.

3. As a lender of money, the banker is interested in the priority his/her claim has on the company's assets relative to other claims. Close examination of the liability section and the related footnotes discloses amounts, maturity dates, collateral, subordinations, and restrictions of existing contractual obligations, all of which are important to potential creditors. The assets and earning power are likewise important to a banker considering a loan.
4. Current liabilities are obligations whose liquidation is reasonably expected to require the use of existing resources properly classified as current assets, or the creation of other current liabilities.

Because current liabilities are by definition tied to current assets and current assets by definition are tied to the operating cycle, liabilities are related to the operating cycle.

5. Unearned revenue is a liability that arises from current sales but for which some future services or products are owed to customers in the future. At the time of a sale, customers pay not only for the delivered product, but they also pay for future products or services (e.g., another plane trip, hotel room, or software upgrade). In this case, the company recognizes revenue from the current product and part of the sale proceeds is recorded as a liability (unearned revenue) for the value of future products or services that are "owed" to customers. Market analysts indicate that an increase in the unearned revenue liability, rather than raising a red flag, often provides a positive signal about sales and profitability. When the sales are growing, it will set aside more revenues in the unearned revenue account. Thus, an *increase* in a liability is good news about company performance. In contrast, when unearned revenues decline, the company owes less future amounts but this also means that sales of new products have slowed.
6. Payables and receivables generally involve an interest element. Recognition of the interest element (the cost of money as a factor of time and risk) results in valuing future payments at their current value. The present value of a liability represents the debt exclusive of the interest factor.

Questions Chapter 13 (Continued)

7. A discount on notes payable represents the difference between the present value and the face value of the note, the face value being greater in amount than the discounted amount. It should be treated as an offset (contra) to the face value of the note and amortized to interest expense over the life of the note. The discount represents interest expense chargeable to future periods.
8. Liabilities that are due on demand (callable by the creditor) should be classified as a current liability. Classification of the debt as current is required because it is a reasonable expectation that existing working capital will be used to satisfy the debt. Liabilities often become callable by the creditor when there is a violation of the debt agreement. Only if it can be shown that it is probable that the violation will be cured (satisfied) within the grace period usually given in these agreements can the debt be classified as noncurrent.
9. An enterprise should exclude a short-term obligation from current liabilities only if (1) it intends to refinance the obligation on a long-term basis, and (2) it demonstrates an ability to consummate the refinancing.
10. The ability to consummate the refinancing may be demonstrated (i) by actually refinancing the short-term obligation through issuance of long-term obligation or equity securities after the date of the balance sheet but before it is issued, or (ii) by entering into a financing agreement that clearly permits the enterprise to refinance the debt on a long-term basis on terms that are readily determinable.
11. A cash dividend formally authorized by the board of directors would be recorded by a debit to Retained Earnings and a credit to Dividends Payable. The Dividends Payable account should be classified as a current liability.

As accumulated but undeclared dividend on cumulative preferred stock is not recorded in the accounts as a liability until declared by the board, but such arrearages should be disclosed either by a footnote to the balance sheet or parenthetically in the capital stock section.

A stock dividend distributable, formally authorized and declared by the board, does not appear as a liability because a stock dividend does not require future outlays of assets or services and is revocable by the board prior to issuance. Even so, an undistributed stock dividend is generally reported in the stockholders' equity section since it represents retained earnings in the process of transfer to paid-in capital.

12. Deferred or unearned revenue arises when a company receives cash or other assets as payment from a customer before conveying (or even producing) the goods or performing the services which it has committed to the customer.

The deferred or unearned revenue is assumed to represent the obligation to the customer to refund the assets received in the case of nonperformance or to perform according to the agreement and thus earn the unrestricted right to the assets received. While there may be an element of unrealized profit included among the liabilities when deferred revenues are classified as such, it is ignored on the grounds that the amount of unrealized profit is uncertain and usually not material relative to the total obligation.

Unearned (or deferred) revenues arise from the following activities:

1. The issuance by a transportation company of tickets or tokens that may be exchanged or used to pay for future fares.
2. The issuance by a restaurant of meal tickets that may be exchanged or used to pay for future meals.
3. The issuance of gift certificates by a retail store.
4. The sale of season tickets to sports or entertainment events.
5. The sale of subscriptions to magazines.

Questions Chapter 13 (Continued)

13. Compensated absences are employee absences such as vacation, illness, and holidays for which it is expected that employees will be paid.
14. A liability should be accrued for the cost of compensated absences if all of the following conditions are met:
 - (a) The employer's obligation relating to employees' rights to receive compensation for future absences is attributable to employees' services already rendered.
 - (b) The obligation relates to employees' rights that vest or accumulate.
 - (c) Payment of the compensation is probable.
 - (d) The amount can be reasonably estimated.If an employer meets conditions (a), (b), and (c), but does not accrue a liability because of failure to meet condition (d), that fact should be disclosed.
15. An employer is required to accrue a liability for "sick pay" that employees are allowed to accumulate and use as compensated time off even if their absence is not due to illness. An employer is permitted but not required to accrue to liability for sick pay that employees are allowed to claim only as a result of actual illness.
16. Employers generally hold back from each employee's wages amounts to cover income taxes (withholding), the employee's share of FICA taxes, and other items such as union dues or health insurance. In addition, the employer must set aside amounts to cover the employer's share of FICA taxes and state and federal unemployment taxes. These latter amounts are recorded as payroll expenses and will lower Caitlin's income. In addition, the amount set aside (both the employee and the employer share) will be reported as current liabilities until they are remitted to the appropriate third party.
17.
 - (a) A contingency is defined in **FASB Statement No. 5** as an existing condition, situation, or set of circumstances involving uncertainty as to possible gain (gain contingency) or loss (loss contingency) to an enterprise that will ultimately be resolved when one or more future events occur or fail to occur.
 - (b) A contingent liability is a liability incurred as a result of a loss contingency.
18. A contingent liability should be recorded and a charge accrued to expense only if:
 - (a) information available prior to the issuance of the financial statements indicates that it is probable that a liability has been incurred at the date of the financial statements, and
 - (b) the amount of the loss can be reasonably estimated.
19. A determinable current liability is susceptible to precise measurement because the date of payment, the payee, and the amount of cash needed to discharge the obligation are reasonably certain. There is nothing uncertain about (1) the fact that the obligation has been incurred and (2) the amount of the obligation.

A contingent liability is an obligation that is dependent upon the occurrence or nonoccurrence of one or more future events to confirm the amount payable, the payee, the date payable, or its existence. It is a liability dependent upon a "loss contingency."

Determinable current liabilities—accounts payable, notes payable, current maturities of long-term debt, dividends payable, returnable deposits, sales and use taxes, payroll taxes, and accrued expenses.

Contingent liabilities—obligations related to product warranties and product defects, premiums offered to customers, certain pending or threatened litigation, certain actual and possible claims and assessments, and certain guarantees of indebtedness of others.

Questions Chapter 13 (Continued)

20. The terms *probable*, *reasonably possible*, and *remote* are used in **FASB Statement No. 5** to denote the chances of a future event occurring, the result of which is a gain or loss to the enterprise. If it is **probable** that a loss has been incurred at the date of the financial statements, then the liability (if reasonably estimable) should be recorded. If it is **reasonably possible** that a loss has been incurred at the date of the financial statements, then the liability should be disclosed via a footnote. The footnote should disclose (1) the nature of the contingency and (2) an estimate of the possible loss or range of loss or a statement that an estimate cannot be made. If the incurrence of a loss is **remote**, then no liability need be recorded or disclosed (except for guarantees of indebtedness of others, which are disclosed even when the loss is remote).
21. Under the **cash basis method**, warranty costs are charged to expense in the period in which the seller or manufacturer performs in compliance with the warranty, no liability is recorded for future costs arising from warranties, and the period of sale is not necessarily charged with the costs of making good on outstanding warranties. Under the **accrual method**, a provision for warranty costs is made at the time of sale or as the productive activity takes place; the accrual method may be applied two different ways—expense warranty versus sales warranty method—but under either method, the attempt is to match warranty expense to the related revenues.
22. Under U.S. GAAP, companies may not record provisions for future operating losses. Such provisions do not meet the definition of a liability, since the amount is not the result of a past transaction (the losses have not yet occurred). Therefore the liability has not been incurred. Furthermore, operating losses reflect general business risks for which a reasonable estimate of the loss could not be determined. Note that use of provisions in this way is one of the examples of earnings management discussed in Chapter 4. By setting aside profits from good years through the use of loss contingencies, companies can smooth out their earnings from year-to-year.
23. The expense warranty approach and the sales warranty approach are both variations of the accrual method of accounting for warranty costs. The expense warranty approach charges the estimated future warranty costs to operating expense in the year of sale or manufacture. The sales warranty approach defers a certain percentage of the original sales price until some future time when actual costs are incurred or the warranty expires.
24. Zuker-Abrahams Airlines Inc.'s award plan is in the nature of a discounted ticket sale. Therefore, the full-fare ticket should be recorded as unearned transportation revenue (liability) when sold and recognized as revenue when the transportation is provided. The half-fare ticket should be treated accordingly; that is, record the discounted price as unearned transportation revenue (liability) when it is sold and recognize it as revenue when the transportation is provided.
25. In the case of free ticket award, AcSEC proposes that a portion of the ticket fares contributing to the accumulation of the 50,000 miles (the free ticket award level) be deferred as unearned transportation revenue and recognized as revenue when the free transportation is provided. The total amount deferred for the free ticket should be based on the revenue value to the airline and the deferral should occur and accumulate as mileage is accumulated.
26. An asset retirement obligation must be recognized when a company has an existing legal obligation associated with the retirement of a long-lived asset and when the amount can be reasonably estimated.
27. The absence of insurance does not mean that a liability has been incurred at the date of the financial statements. Until the time that an event (loss contingency) occurs there can be no diminution in the value of property or incurrence of a liability. If an event has occurred which exposes an enterprise to risks of injury to others and/or damage to the property of others, then a contingency exists. Expected future injury, damage, or loss resulting from lack of insurance need not be recorded or disclosed if no contingency exists. And, a contingency exists only if an uninsurable event which causes probable loss has occurred. Lack of insurance is not in itself a basis for recording a liability of loss.

Questions Chapter 13 (Continued)

28. In determining whether or not to record a liability for pending litigation, the following factors must be considered:
- (a) The time period in which the underlying cause for action occurred.
 - (b) The probability of an unfavorable outcome.
 - (c) The ability to make a reasonable estimate of the amount of loss.

Before recording a liability for threatened litigation, the company must determine:

- (a) The degree of probability that a suit may be filed, and
- (b) The probability of an unfavorable outcome.

If both are probable, the loss reasonably estimable, and the cause for action dated on or before the date of the financial statements, the liability must be accrued.

29. The student may propose several defensible recommendations for listing current liabilities: (1) in order of maturity, (2) according to amount, (3) in order of liquidation preference. The authors' recent review of published financial statements disclosed that a significant majority of the published financial statements examined listed "notes payable" first, regardless of relative amount, followed most often by "accounts payable," and ending the current liability section with "current portion of long-term debt."
30. The acid-test ratio and the current ratio are both measures of the short-term debt-paying ability of the company. The acid-test ratio excludes inventories and prepaid expenses on the basis that these assets are difficult to liquidate in an emergency. The current ratio and the acid-test ratio are similar in that both numerators include cash, marketable securities, and receivables, and both denominators include current liabilities.
31. (a) A liability for goods purchased on credit should be recorded when title passes to the purchaser. If the terms of purchase are f.o.b. destination, title passes when the goods purchased arrive; if f.o.b. shipping point, title passes when shipment is made by the vendor.
- (b) Officers' salaries should be recorded when they become due at the end of a pay period. Accrual of unpaid amounts should be recorded in preparing financial statements dated other than at the end of a pay period.
- (c) A special bonus to employees should be recorded when approved by the board of directors or person having authority to approve, if the bonus is for a period of time and that period has ended at the date of approval. If the period for which the bonus is applicable has not ended but only a part of it has expired, it would be appropriate to accrue a pro rata portion of the bonus at the time of approval and make additional accruals of pro rata amounts at the end of each pay period.
- (d) Dividends should be recorded when they have been declared by the board of directors.
- (e) Usually it is neither necessary nor proper for the buyer to make any entries to reflect commitments for purchases of goods that have not been shipped by the seller. Ordinary orders, for which the prices are determined at the time of shipment and subject to cancellation by the buyer or seller, do not represent either an asset or a liability to the buyer and need not be reflected in the books or in the financial statements. However, an accrued loss on purchase commitments which results from formal purchase contracts for which a firm price is in excess of the market price at the date of the balance sheet would be shown in the liability section of the balance sheet. (See Chapter 9 on purchase commitments.)

SOLUTIONS TO BRIEF EXERCISES

BRIEF EXERCISE 13-1

July 1	Purchases	40,000	
	Accounts Payable.....		40,000
	Freight-in	1,200	
	Cash		1,200
July 3	Accounts Payable	6,000	
	Purchase Returns and Allowances.....		6,000
July 10	Accounts Payable	34,000	
	Cash		33,320
	Purchase Discounts		680

BRIEF EXERCISE 13-2

11/1/04	Cash	50,000	
	Notes Payable		50,000
12/31/04	Interest Expense.....	750	
	Interest Payable		750
	(\$50,000 X 9% X 2/12)		
2/1/05	Notes Payable.....	50,000	
	Interest Payable.....	750	
	Interest Expense.....	375	
	Cash		51,125

BRIEF EXERCISE 13-3

11/1/04	Cash	50,000	
	Discount on Notes Payable	1,125	
	Notes Payable.....		51,125
12/31/04	Interest Expense	750	
	Discount on Notes Payable.....		750
	(\$1,125 X 2/3)		

BRIEF EXERCISE 13-3 (Continued)

2/1/05	Interest Expense.....	375	
	Discount on Notes Payable		375
	Notes Payable.....	51,125	
	Cash		51,125

BRIEF EXERCISE 13-4

- (a) Since both criteria are met (intent and ability), none of the \$500,000 would be reported as a current liability. The entire amount would be reported as a long-term liability.
- (b) Because repayment of the note payable required the use of existing 12/31/04 current assets, the entire \$500,000 liability must be reported as current.

BRIEF EXERCISE 13-5

8/1/04	Cash	180,000	
	Unearned Subscription Revenue.....		180,000
	(10,000 X \$18)		
12/31/04	Unearned Subscription Revenue	75,000	
	Subscription Revenue.....		75,000
	(\$180,000 X 5/12 = \$75,000)		

BRIEF EXERCISE 13-6

(a)	Accounts Receivable	31,800	
	Sales.....		30,000
	Sales Taxes Payable.....		1,800
	(\$30,000 X 6% = \$1,800)		
(b)	Cash	19,610	
	Sales.....		18,500
	Sales Taxes Payable.....		1,110
	(\$19,610 ÷ 1.06 = \$18,500)		

BRIEF EXERCISE 13-7

Wage Expense	23,000	
FICA Taxes Payable		1,426
Federal Income Tax Withheld Payable.....		2,990
State Income Tax Withheld Payable.....		920
Insurance Premiums Payable		250
Cash.....		17,414

BRIEF EXERCISE 13-8

Wage Expense	36,000	
Vacation Wages Payable		36,000
(30 X 2 X \$600)		

BRIEF EXERCISE 13-9

12/31/04	Bonus Expense.....	450,000	
	Bonus Payable.....		450,000
2/15/05	Bonus Payable	450,000	
	Cash.....		450,000

BRIEF EXERCISE 13-10

(a)	Lawsuit Loss	700,000	
	Lawsuit Liability.....		700,000

(b) No entry is necessary. The loss is not accrued because it is not probable that a liability has been incurred at 12/31/04.

BRIEF EXERCISE 13-11

Kohlbeck should record a litigation accrual on the patent case, since the amount is both estimable and probable. This entry will reduce income by \$200,000 and Kohlbeck will report a litigation liability of \$200,000. The \$100,000 self insurance allowance has no impact on income or liabilities.

BRIEF EXERCISE 13-12

Oil Platform	500,000	
Asset Retirement Obligation		500,000

BRIEF EXERCISE 13-13

2004	Warranty Expense.....	70,000	
	Cash, Inventory, etc.		70,000
12/31/04	Warranty Expense.....	500,000	
	Estimated Liability Under Warranties....		500,000

BRIEF EXERCISE 13-14

(a)	Cash	1,485,000	
	Unearned Warranty Revenue.....		1,485,000
	(15,000 X \$99)		
(b)	Warranty Expense	180,000	
	Cash, Inventory, etc.....		180,000
(c)	Unearned Warranty Revenue	247,500	
	Warranty Revenue		247,500
	(\$1,485,000 X 180/1,080)		

BRIEF EXERCISE 13-15

Premium Expense	72,000	
Estimated Liability for Premiums		72,000
UPC codes expected to be sent in.....		300,000
(30% X 1,000,000)		
UPC codes already redeemed.....		<u>120,000</u>
Estimated future redemptions		<u>180,000</u>
Cost of estimated claims outstanding		<u>\$ 72,000</u>
(\$180,000 ÷ 3) X (\$1.10 + \$0.60 – \$0.50)		

*BRIEF EXERCISE 13-16

$$B = .10 (\$265,000 - B - T)$$

$$T = .40 (\$265,000 - B)$$

$$B = .10 [\$265,000 - B - .40(\$265,000 - B)]$$

$$B = .10 [\$265,000 - B - \$106,000 + .4B]$$

$$B = .10 [\$159,000 - .6B]$$

$$B = \$15,900 - .06B$$

$$1.06 B = \$15,900$$

$$B = \$15,900/1.06 = \$15,000$$

SOLUTIONS TO EXERCISES

EXERCISE 13-1 (10-15 minutes)

- (a) Current liability.
- (b) Current liability.
- (c) Current liability or long-term liability depending on term of warranty.
- (d) Current liability.
- (e) Current liability.
- (f) Current liability.
- (g) Current or noncurrent liability depending upon the time involved.
- (h) Current liability.
- (i) Current liability.
- (j) Current liability.
- (k) Current liabilities or long-term liabilities as a deduction from face value of note.
- (l) Footnote disclosure (assume not probable and/or not reasonably estimable).
- (m) Current liability.
- (n) Current liability.
- (o) Footnote disclosure.
- (p) Separate presentation in either current or long-term liability section.

EXERCISE 13-2 (15-20 minutes)

(a)	Sept. 1	Purchases.....	50,000	
		Accounts Payable.....		50,000
	Oct. 1	Accounts Payable.....	50,000	
		Notes Payable.....		50,000
	Oct. 1	Cash.....	50,000	
		Discount on Notes Payable.....	6,000	
		Notes Payable.....		56,000
(b)	Dec. 31	Interest Expense.....	1,500	
		Interest Payable.....		1,500
		(\$50,000 X 12% X 3/12)		
	Dec. 31	Interest Expense.....	1,500	
		Discount on Notes Payable.....		1,500
		(\$6,000 X 3/12)		

EXERCISE 13-2 (Continued)

(c) (1)	Note payable	\$50,000
	Interest payable	<u>1,500</u>
		<u>\$51,500</u>
(2)	Note payable	\$56,000
	Less discount (\$6,000 – \$1,500)	<u>4,500</u>
		<u>\$51,500</u>

EXERCISE 13-3 (10-12 minutes)

**Hattie McDaniel Company
Partial Balance Sheet
December 31, 2004**

Current liabilities:

Notes payable (Note 1) \$250,000

Long-term debt:

Notes payable refinanced in February 2005 (Note 1) 950,000

Note 1.

Short-term debt refinanced. As of December 31, 2004, the company had notes payable totaling \$1,200,000 due on February 2, 2005. These notes were refinanced on their due date to the extent of \$950,000 received from the issuance of common stock on January 21, 2005. The balance of \$250,000 was liquidated using current assets.

OR

Current liabilities:

Notes payable (Note 1) \$250,000

Long-term debt:

Short-term debt expected to be refinanced (Note 1) 950,000

(Same Footnote as above.)

EXERCISE 13-4 (20-25 minutes)

**Chris Atkins Company
Partial Balance Sheet
December 31, 2004**

Current liabilities:

Notes payable (Note 1)	\$3,400,000
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Long-term debt:

Notes payable expected to be refinanced in 2005 (Note 1)	3,600,000
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Note 1.

Under a financing agreement with Blue Lagoon State Bank the Company may borrow up to 60% of the gross amount of its accounts receivable at an interest cost of 1% above the prime rate. The Company intends to issue notes maturing in 2009 to replace \$3,600,000 of short-term, 15%, notes due periodically in 2005. Because the amount that can be borrowed may range from \$3,600,000 to \$4,800,000, only \$3,600,000 of the \$7,000,000 of currently maturing debt has been reclassified as long-term debt.

EXERCISE 13-5 (25-30 minutes)

(a) Year	To accrue the expense and liability for compensated absences:	To record payment for compensated time when used by employees:																		
2003	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding-left: 20px;">Wages Expense</td> <td style="text-align: right;">11,520</td> </tr> <tr> <td style="padding-left: 20px;">Vacation Wages Payable</td> <td style="text-align: right;">7,200(1)</td> </tr> <tr> <td style="padding-left: 20px;">Sick Pay Wages Payable</td> <td style="text-align: right;">4,320(2)</td> </tr> </table>	Wages Expense	11,520	Vacation Wages Payable	7,200(1)	Sick Pay Wages Payable	4,320(2)	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding-left: 20px;">Sick Pay Wages Payable</td> <td style="text-align: right;">2,880(3)</td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Cash</td> <td></td> <td style="text-align: right;">2,880</td> </tr> </table>	Sick Pay Wages Payable	2,880(3)		Cash		2,880						
Wages Expense	11,520																			
Vacation Wages Payable	7,200(1)																			
Sick Pay Wages Payable	4,320(2)																			
Sick Pay Wages Payable	2,880(3)																			
Cash		2,880																		
2004	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding-left: 20px;">Wages Expense</td> <td style="text-align: right;">12,672</td> </tr> <tr> <td style="padding-left: 20px;">Vacation Wages Payable</td> <td style="text-align: right;">7,920(4)</td> </tr> <tr> <td style="padding-left: 20px;">Sick Pay Wages Payable</td> <td style="text-align: right;">4,752(5)</td> </tr> </table>	Wages Expense	12,672	Vacation Wages Payable	7,920(4)	Sick Pay Wages Payable	4,752(5)	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding-left: 20px;">Wages Expense</td> <td style="text-align: right;">792</td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Vacation Wages Payable</td> <td style="text-align: right;">6,480(6)</td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Sick Pay Wages Payable</td> <td style="text-align: right;">3,816(7)</td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Cash</td> <td></td> <td style="text-align: right;">11,088(8)</td> </tr> </table>	Wages Expense	792		Vacation Wages Payable	6,480(6)		Sick Pay Wages Payable	3,816(7)		Cash		11,088(8)
Wages Expense	12,672																			
Vacation Wages Payable	7,920(4)																			
Sick Pay Wages Payable	4,752(5)																			
Wages Expense	792																			
Vacation Wages Payable	6,480(6)																			
Sick Pay Wages Payable	3,816(7)																			
Cash		11,088(8)																		

EXERCISE 13-5 (Continued)

(1)	9 employees X \$10.00/hr. X 8 hrs./day X 10 days =	\$7,200
(2)	9 employees X \$10.00/hr. X 8 hrs./day X 6 days =	\$4,320
(3)	9 employees X \$10.00/hr. X 8 hrs./day X 4 days =	\$2,880
(4)	9 employees X \$11.00/hr. X 8 hrs./day X 10 days =	\$7,920
(5)	9 employees X \$11.00/hr. X 8 hrs./day X 6 days =	\$4,752
(6)	9 employees X \$10.00/hr. X 8 hrs./day X 9 days =	\$6,480
(7)	9 employees X \$10.00/hr. X 8 hrs./day X (6–4) days =	\$1,440
	9 employees X \$11.00/hr. X 8 hrs./day X (5–2) days =	<u>+2,376</u> = \$3,816
(8)	9 employees X \$11.00/hr. X 8 hrs./day X 9 days =	\$7,128
	9 employees X \$11.00/hr. X 8 hrs./day X 5 days =	<u>+3,960</u> = \$11,088

NOTE: Vacation days and sick days are paid at the employee's current wage.

(b) Accrued liability at year-end:

	2003		2004	
	Vacation Wages Payable	Sick Pay Wages Payable	Vacation Wages Payable	Sick Pay Wages Payable
Jan. 1 balance	\$ 0	\$ 0	\$7,200	\$1,440
+ accrued	7,200	4,320	7,920	4,752
– paid	<u>(0)</u>	<u>(2,880)</u>	<u>(6,480)</u>	<u>(3,816)</u>
Dec. 31 balance	<u>\$7,200(1)</u>	<u>\$1,440(2)</u>	<u>\$8,640(3)</u>	<u>\$2,376(4)</u>

(1)	9 employees X \$10.00/hr. X 8 hrs./day X 10 days =	<u>\$7,200</u>
(2)	9 employees X \$10.00/hr. X 8 hrs./day X (6–4) days =	<u>\$1,440</u>
(3)	9 employees X \$10.00/hr. X 8 hrs./day X (10–9) days =	\$ 720
	9 employees X \$11.00/hr. X 8 hrs./day X 10 days =	<u>+7,920</u>
		<u>\$8,640</u>
(4)	9 employees X \$11.00/hr. X 8 hrs./day X (6 + 6 – 4 – 5) days	<u>\$2,376</u>

EXERCISE 13-6 (25-30 minutes)

(a)

2003	To accrue the expense and liability for vacations:	Wages Expense Vacation Wages Payable	7,740 (1)	7,740
	To record sick time paid:	Wages Expense Cash	2,880 (2)	2,880
	To record vacation time paid:	No entry.		
2004	To accrue the expense and liability for vacations:	Wages Expense Vacation Wages Payable	8,352 (3)	8,352
	To record sick time paid:	Wages Expense Cash	3,960 (4)	3,960
	To record vacation time paid:	Wage Expense Vacation Wages Payable Cash	162 6,966 (5)	7,128 (6)

(1) 9 employees X \$10.75/hr. X 8 hrs./day X 10 days = \$7,740

(2) 9 employees X \$10.00/hr. X 8 hrs./day X 4 days = \$2,880

(3) 9 employees X \$11.60/hr. X 8 hrs./day X 10 days = \$8,352

(4) 9 employees X \$11.00/hr. X 8 hrs./day X 5 days = \$3,960

(5) 9 employees X \$10.75/hr. X 8 hrs./day X 9 days = \$6,966

(6) 9 employees X \$11.00/hr. X 8 hrs./day X 9 days = \$7,128

EXERCISE 13-6 (Continued)

(b) Accrued liability at year-end:

	<u>2003</u>	<u>2004</u>
Jan. 1 balance	\$ 0	\$7,740
+ accrued	7,740	8,352
– paid	<u>(0)</u>	<u>(6,966)</u>
Dec. 31 balance	<u>\$7,740(1)</u>	<u>\$9,126(2)</u>

- (1) 9 employees X \$10.75/hr. X 8 hrs./day X 10 days = \$7,740
- (2) 9 employees X \$10.75/hr. X 8 hrs./day X 1 day = \$ 774
 9 employees X \$11.60/hr. X 8 hrs./day X 10 days = 8,352
\$9,126

EXERCISE 13-7 (5-7 minutes)

June 30

Revenue from Sales	21,900	
Sales Tax Payable		21,900
Computation:		
Sales plus sales tax (\$233,200 + \$153,700)	\$386,900	
Sales exclusive of tax (\$386,900 ÷ 1.06)	<u>365,000</u>	
Sales tax		<u>\$ 21,900</u>

EXERCISE 13-8 (10-15 minutes)

Wages and Salaries Expense	480,000	
Withholding Taxes Payable.....		90,000
FICA Taxes Payable*		29,900
Union Dues Payable.....		9,000
Cash.....		351,100

*[(\$480,000 – \$110,000) X 7.65% = \$28,305

\$110,000 X 1.45% = \$1,595; \$28,305 + \$1,595 = \$29,900

EXERCISE 13-8 (Continued)

Payroll Tax Expense	31,500	
FICA Taxes Payable		29,900
(See previous computation.)		
Federal Unemployment Tax Payable		640
[(\$480,000 – \$400,000) X .8%]		
State Unemployment Tax Payable		960
[\$80,000 X (3.5% – 2.3%)]		

EXERCISE 13-9 (15-20 minutes)

(a)	<u>Total</u>		<u>Factory</u>		<u>Sales</u>		<u>Administrative</u>
Wages	\$200,000		\$120,000		\$44,000		\$36,000
FICA	13,142 *		9,180		1,208 **		2,754
Federal U.C.	352 ***		320		32		–
State U.C.	1,100 ****		1,000		100		–
Total Cost	<u>\$214,594</u>		<u>\$130,500</u>		<u>\$45,340</u>		<u>\$38,754</u>

*\$9,180 + \$1,208 + \$2,754 = \$13,142

**\$12,000 X 7.65% = \$918; \$20,000 X 1.45% = \$290; \$918 + \$290 = \$1,208

***\$44,000 X .8%

****\$44,000 X 2.5%

(b)

Factory Payroll:

Wages and Salaries Expense	120,000	
Withholding Taxes Payable		16,000
FICA Taxes Payable		9,180
Cash		94,820
Payroll Tax Expense	10,500	
FICA Taxes Payable		9,180
Federal Unemployment Tax Payable		320
State Unemployment Tax Payable		1,000

EXERCISE 13-9 (Continued)

Sales Payroll:

Wages and Salaries Expense.....	32,000	
Withholding Taxes Payable		7,000
FICA Taxes Payable.....		1,208
Cash		23,792
Payroll Tax Expense	1,340	
FICA Taxes Payable.....		1,208
Federal Unemployment Tax Payable		32
State Unemployment Tax Payable		100

Administrative Payroll:

Wages and Salaries Expense.....	36,000	
Withholding Taxes Payable		6,000
FICA Taxes Payable.....		2,754
Cash		27,246
Payroll Tax Expense	2,754	
FICA Taxes Payable.....		2,754

EXERCISE 13-10 (10-15 minutes)

(a) Cash (200 X \$4,000).....	800,000	
Sales.....		800,000
Warranty Expense	17,000	
Cash		17,000
Warranty Expense (\$66,000 – \$17,000)	49,000	
Estimated Liability Under Warranties.....		49,000
(b) Cash	800,000	
Sales.....		800,000
Warranty Expense.....	17,000	
Cash		17,000

EXERCISE 13-11 (15-20 minutes)

(a) Cash	3,000,000	
Sales.....		3,000,000
(500 X \$6,000)		
Warranty Expense	20,000	
Cash		20,000
Warranty Expense	100,000	
Estimated Liability Under Warranties		100,000
(\$120,000 – \$20,000)		
(b) Cash	3,000,000	
Sales.....		2,850,000
Unearned Warranty Revenue.....		150,000
Warranty Expense	20,000	
Cash		20,000
Unearned Warranty Revenue	25,000	
Warranty Revenue		25,000
[\$150,000 X (\$20,000/\$120,000)]		

EXERCISE 13-12 (15-20 minutes)

Inventory of Premiums (8,800 X \$.80).....	7,040	
Cash.....		7,040
Cash (110,000 X \$3.30)	363,000	
Sales		363,000
Premium Expense.....	3,520	
Inventory of Premiums [(44,000 ÷ 10) X \$.80]		3,520
Premium Expense.....	1,760*	
Estimated Liability for Premiums		1,760

*[(110,000 X 60%) – 44,000] ÷ 10 X \$.80 = 1,760

EXERCISE 13-13 (20-30 minutes)

1. The FASB pronouncements require that, when some amount within the range appears at the time to be a better estimate than any other amount within the range, that amount is accrued. When no amount within the range is a better estimate than any other amount, the dollar amount at the low end of the range is accrued and the dollar amount of the high end of the range is disclosed. In this case, therefore, Salt-N-Pepa Inc. would report a liability of \$900,000 at December 31, 2004.

2. The loss should be accrued. Given that the loss is covered by insurance, except for the \$500,000 deductible, only the \$500,000 should be accrued.

3. This is a gain contingency because the amount to be received will be in excess of the book value of the plant. Gain contingencies are not recorded and are disclosed only when the probabilities are high that a gain contingency will become reality.

EXERCISE 13-14 (25-30 minutes)

(a) Depot	600,000	
Cash		600,000
 Depot	 41,879	
Asset Retirement Obligation		41,879
 (b) Depreciation Expense.....	 60,000	
Accumulated Depreciation		60,000
 Depreciation Expense.....	 4,187.90	
Accumulated Depreciation		4,187.90*
 Interest Expense	 2,512.74	
Asset Retirement Obligation		2,512.74**

*\$41,879/10.

**\$41,879 X .06.

EXERCISE 13-14 (Continued)

(c) Asset Retirement Obligation	75,000	
Loss on ARO Settlement	5,000	
Cash		80,000

EXERCISE 13-15 (25-35 minutes)

1. Liability for stamp redemptions, 12/31/03	\$13,000,000
Cost of redemptions redeemed in 2004	<u>(6,000,000)</u>
	7,000,000
Cost of redemptions to be redeemed in 2005 (5,200,000 X 80%)	<u>4,160,000</u>
Liability for stamp redemptions, 12/31/04	<u>\$11,160,000</u>
2. Total coupons issued	\$800,000
Redemption rate	<u>60%</u>
To be redeemed	480,000
Handling charges (\$480,000 X 10%)	<u>48,000</u>
Total cost	<u>\$528,000</u>
Total cost	\$528,000
Total payments to retailers	<u>330,000</u>
Liability for unredeemed coupons	<u>\$198,000</u>
3. Boxes	700,000
	<u>70%</u>
Total redeemable	<u>490,000</u>
Coupons to be redeemed (490,000 – 250,000)	240,000
Cost (\$6.50 – \$4.00)	<u>\$2.50</u>
Liability for unredeemed coupons	<u>\$600,000</u>

EXERCISE 13-16 (30-35 minutes)

#	Assets	Liabilities	Owners' Equity	Net Income
1	I	I	NE	NE
2	NE	NE	NE	NE
3	NE	I	D	D
4	I	I	NE	NE
5	NE	I	D	D
6	I	I	I	I
7	D	I	D	D
8	NE	I	D	D
9	NE	I	D	D
10	I	I	NE	NE
11	NE	I	D	D
12	NE	I	D	D
13	NE	I	D	D
14	D	D	NE	NE
15	I	I	I	I
16	D	NE	D	D
17	NE	D	I	I
18	NE	I	D	D

EXERCISE 13-17 (15-20 minutes)

$$(a) \quad \text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{\$210,000}{\$80,000} = 2.63$$

Current ratio measures the short-term ability of the company to meet its currently maturing obligations.

$$(b) \quad \text{Acid-test ratio} = \frac{\text{Cash} + \text{Marketable Securities} + \text{Receivables}}{\text{Current Liabilities}} = \frac{\$115,000}{\$80,000} = 1.44$$

Acid-test ratio also measures the short-term ability of the company to meet its current maturing obligations. However, it eliminates assets that might be slow moving, such as inventories and prepaid expenses.

$$(c) \quad \text{Debt to total assets} = \frac{\text{Total Liabilities}}{\text{Total Assets}} = \frac{\$220,000}{\$430,000} = 51.16\%$$

This ratio provides the creditors with some idea of the corporation's ability to withstand losses without impairing the interest of creditors.

$$(d) \quad \text{Rate of return on assets} = \frac{\text{Net Income}}{\text{Average Total Assets}} = \frac{\$25,000}{\$430,000} = 5.81\%$$

This ratio measures the return the company is earning on its average total assets and provides one indication related to the profitability of the enterprise.

EXERCISE 13-18 (20-25 minutes)

$$(a) \quad 1. \quad \text{Current ratio} = \frac{\$773,000}{\$240,000} = 3.22 \text{ times}$$

$$2. \quad \text{Acid-test ratio} = \frac{\$52,000 + \$198,000 + \$80,000}{\$240,000} = 1.38 \text{ times}$$

EXERCISE 13-18 (Continued)

3. **Accounts receivable turnover =**
$$\$1,640,000 \div \frac{\$80,000 + \$198,000}{2} = 11.8 \text{ times (or approximately every 31 days)}$$

4. **Inventory turnover =**
$$\$800,000 \div \frac{\$360,000 + \$440,000}{2} = 2 \text{ times (or approximately every 183 days)}$$

5. **Rate of return on assets =**
$$\$360,000 \div \frac{\$1,400,000 + \$1,630,000}{2} = 23.76\%$$

6. **Profit margin on sales =**
$$\$360,000 \div \$1,640,000 = 21.95\%$$

(b) Financial ratios should be evaluated in terms of industry peculiarities and prevailing business conditions. Although industry and general business conditions are unknown in this case, the company appears to have a relatively strong current position. The main concern from a short-term perspective is the apparently low inventory turnover. The rate of return on assets and profit margin on sales are extremely good and indicate that the company is employing its assets advantageously.

EXERCISE 13-19 (15-25 minutes)

(a) 1. $\$318,000 \div \$87,000 = 3.66 \text{ times}$

2. $\$820,000 \div \frac{\$200,000 + \$170,000}{2} = 4.43 \text{ times} = 82 \text{ days}$

3. $\$1,400,000 \div \$95,000 = 14.74 \text{ times} = 25 \text{ days}$

EXERCISE 13-19 (Continued)

4. $\$410,000 \div 52,000 = \7.88
 5. $\$410,000 \div \$1,400,000 = 29.3\%$
 6. $\$410,000 \div \$488,000 = 84.02\%$
- (b)
1. No effect on current ratio.
 2. Weaken current ratio by reducing current assets.
 3. Improve current ratio by reducing current assets and current liabilities by a like amount.
 4. No effect on current ratio.
 5. Weaken current ratio by increasing current liabilities.
 6. No effect on current ratio.

***EXERCISE 13-20 (10-15 minutes)**

(B = bonus; T = taxes)

(a)

$$B = .15 (\$299,750 - B - T)$$

$$T = .40 (\$299,750 - B)$$

$$B = .15 [\$299,750 - B - .4 (\$299,750 - B)]$$

$$B = .15 (\$299,750 - B - \$119,900 + .4B)$$

$$B = .15 (\$179,850 - .6B)$$

$$B = \$26,977.50 - .09B$$

$$1.09B = \$26,977.50$$

$$\text{Bonus} = \$24,750$$

(b)

$$T = .40 (\$299,750 - B)$$

$$T = .40 (\$299,750 - \$24,750)$$

$$T = .40 (\$275,000)$$

$$\text{Taxes} = \$110,000$$

(c)	Bonus Expense	24,750	
	Bonus Payable		24,750

***EXERCISE 13-21 (15-20 minutes)**

Scottie Pippen Company
Income Statement
For the Year Ended December 31, 2004

Revenue		\$10,000,000
Cost of goods sold		<u>7,000,000</u>
Gross profit		\$ 3,000,000
Administrative and selling expenses	\$1,000,000	
Profit-sharing bonus to employees	<u>198,198</u>	<u>1,198,198</u>
Income before income taxes		1,801,802
Income taxes (45%)		<u>810,811</u>
Net income		<u>\$ 990,991</u>

Computation of bonus and tax:

$$T = .45 (\$3,000,000 - \$1,000,000 - B)$$

$$B = .20 (\$2,000,000 - B - T)$$

$$B = .20 [\$2,000,000 - B - .45 (\$2,000,000 - B)]$$

$$B = .20 (\$2,000,000 - B - \$900,000 + .45B)$$

$$B = .20 (\$1,100,000 - .55B)$$

$$B = \$220,000 - .11B$$

$$1.11B = \$220,000$$

$$\text{Bonus} = \$198,198.19$$

$$T = .45 (\$2,000,000 - \$198,198.19)$$

$$T = .45 (\$1,801,801.81)$$

$$\text{Taxes} = \$810,810.81$$

***EXERCISE 13-22 (15-20 minutes)**

C = Contribution; T = Tax

$$T = .40 (\$300,000 - C)$$

$$C = .25 [\$300,000 - C - T - .10 (\$700,000 + \$300,000 - C - T)]$$

$$C = .25 [\$300,000 - C - .40 (\$300,000 - C) - .10 [\$700,000 + \$300,000 - C - .40 (\$300,000 - C)]]$$

$$C = .25 (\$300,000 - C - \$120,000 + .40C - \$70,000 - \$30,000 + .10C + \$12,000 - .04C)$$

$$C = \$75,000 - .25C - \$30,000 + .10C - \$17,500 - \$7,500 + .025C + \$3,000 - .01C$$

$$C = \$23,000 - .135C$$

$$1.135C = \$23,000$$

$$C = \$20,264.32$$

TIME AND PURPOSE OF PROBLEMS

Problem 13-1 (Time 25-30 minutes)

Purpose—to present the student with an opportunity to prepare journal entries for a variety of situations related to liabilities. The situations presented are basic ones including purchases and payments on account, and borrowing funds by giving a zero-interest-bearing note. The student is also required to prepare year-end adjusting entries.

Problem 13-2 (Time 25-35 minutes)

Purpose—to present the student with the opportunity to prepare journal entries for several different situations related to liabilities. The situations presented include accruals and payments related to sales, use, and asset retirement obligations. Year-end adjusting entries are also required.

Problem 13-3 (Time 20-30 minutes)

Purpose—to present the student with an opportunity to prepare journal entries for four weekly payrolls. The student must compute income tax to be withheld, FICA tax, and state and federal unemployment compensation taxes. The student must realize the fact that in the fourth week only a portion of one employee's payroll is subject to unemployment tax.

Problem 13-4 (Time 20-25 minutes)

Purpose—to provide the student with the opportunity to prepare journal entries for a monthly payroll. The student must compute income tax to be withheld, FICA tax, and state and federal unemployment compensation taxes. The student must be aware that the unemployment taxes do not apply to three employees as their earnings exceed the statutory maximum subject to the taxes.

Problem 13-5 (Time 15-20 minutes)

Purpose—to provide the student with an opportunity to prepare journal entries and balance sheet presentations for warranty costs under the cash-basis and the expense warranty accrual methods. Entries in the sales year and one subsequent year are required. The problem highlights the differences between the two methods in the accounts and on the balance sheet.

Problem 13-6 (Time 10-20 minutes)

Purpose—to provide the student with a basic problem covering the sales warranty method. The student is required to prepare journal entries in the year of sale and in subsequent years when warranty costs are incurred. Also required are balance sheet presentations for the year of sale and one subsequent year. While the problem is basic in nature it does test the student's ability to understand and apply the sales warranty method.

Problem 13-7 (Time 25-35 minutes)

Purpose—to provide the student with an opportunity to prepare journal entries for warranty costs under the expense warranty method and the cash basis method. The student is also required to indicate the proper balance sheet disclosures under each method for the year of sale. Finally, the student is required to comment on the effect on net income of applying each method. The problem highlights the differences between the two methods in the accounts and on the balance sheet.

Problem 13-8 (Time 15-25 minutes)

Purpose—to provide the student with a basic problem in accounting for premium offers. The student is required to prepare journal entries relating to sales, the purchase of the premium inventory, and the redemption of coupons. The student must also prepare the year-end adjusting entry reflecting the estimated liability for premium claims outstanding. A very basic problem.

Problem 13-9 (Time 30-45 minutes)

Purpose—to present the student with a slightly complicated problem related to accounting for premium offers. The problem is more complicated in that coupons redeemed are accompanied by cash payments, and in addition to the cost of the premium item postage costs are also incurred. The student

Time and Purpose of Problems (Continued)

is required to prepare journal entries for various transactions including sales, purchase of the premium inventory, and redemption of coupons for two years. The second year's entries are more complicated due to the existence of the liability for claims outstanding. Finally the student is required to indicate the amounts related to the premium offer that would be included in the financial statements for each of two years. This very realistic problem challenges the student's ability to account for all transactions related to premium offers.

Problem 13-10 (Time 25-30 minutes)

Purpose—to present the student with the problem of determining the proper amount of and disclosure for a contingent loss due to lawsuits. The student is required to prepare a journal entry and a footnote. The student is also required to discuss any liability incurred by a company due to the risk of loss from lack of insurance coverage. A straightforward problem dealing with contingent losses.

Problem 13-11 (Time 35-45 minutes)

Purpose—to provide the student with a comprehensive problem dealing with contingent losses. The student is required to prepare journal entries for each of three independent situations. For each situation the student must also discuss the appropriate disclosure in the financial statements. The situations presented include a lawsuit, an expropriation, and self-insurance situation. This problem challenges the student not only to apply the guidelines set forth in **FASB Statement No. 5**, but also to develop reasoning as to how the guidelines relate to each situation. A good problem to analyze the effects of **FASB Statement No. 5** on a variety of situations.

Problem 13-12 (Time 20-30 minutes)

Purpose—the student calculates warranty expense, estimated liability for warranties, premium expense, inventory of premiums, and estimated liability for premiums.

Problem 13-13 (Time 25-35 minutes)

Purpose—to present the student a comprehensive problem in determining various liabilities and present findings in writing. Issues addressed relate to contingencies, warranties, and litigation.

***Problem 13-14** (Time 25-30 minutes)

Purpose—to provide the student with experience in computing bonuses under a variety of compensation plans. The student must compute a bonus before deduction of bonus and income taxes, after deduction of bonus but before deduction of income taxes, before deduction of bonus but after deduction of income taxes, and after deduction of bonus and income taxes expenses. This problem presents all the basic bonus computations.

***Problem 13-15** (Time 20-25 minutes)

Purpose—to present the student with a comprehensive problem in determining the amounts of various liabilities. The student must calculate (for independent situations) the estimated liability for warranties, a bonus-type profit-sharing contribution, and an estimated liability for premium claims outstanding. Journal entries are not required. This problem should challenge the better students.

SOLUTIONS TO PROBLEMS

PROBLEM 13-1

(a)			
	February 2		
	Purchases	49,000	
	Accounts Payable		49,000
	February 26		
	Accounts Payable	49,000	
	Purchase Discounts Lost	1,000	
	Cash		50,000
	April 1		
	Trucks	40,000	
	Cash		4,000
	Notes Payable		36,000
	May 1		
	Cash	80,000	
	Discount on Notes Payable	12,000	
	Notes Payable		92,000
	August 1		
	Retained Earnings (Dividends Declared)	300,000	
	Dividends Payable		300,000
	September 10		
	Dividends Payable	300,000	
	Cash		300,000
(b)	December 31		
	1. No adjustment necessary		
	2. Interest Expense (\$36,000 X 12% X 9/12)	3,240	
	Interest Payable		3,240
	3. Interest Expense (\$12,000 X 8/12)	8,000	
	Discount on Notes Payable		8,000
	4. No adjustment necessary		

PROBLEM 13-2

1.	Dec. 5	Cash	500	
		Returnable Deposit (Liability)		500
2.	Dec. 1-31	Cash	834,750	
		Sales ($\$834,750 \div 1.05$)		795,000
		Sales Taxes Payable		39,750
		($\$795,000 \times .05$)		
3.	Dec. 10	Trucks	103,950	
		Cash		103,950
4.	Dec. 31	Parking Lot	84,000	
		Asset Retirement Obligation		84,000

PROBLEM 13-3

Entries for Payroll 1

Wages and Salaries Expense	980.00*	
Withholding Taxes Payable (10% X \$980)		98.00
FICA Taxes Payable (7.65% X \$980)		74.97
Union Dues Payable (2% X \$980)		19.60
Cash		787.43

*\$180 + \$150 + \$110 + \$250 + \$290 = \$980

Payroll Tax Expense	89.49	
FICA Taxes Payable (7.65% X \$980)		74.97
Federal Unemployment Tax Payable [.8% X (\$180 + \$150 + \$110)]		3.52
State Unemployment Tax Payable (2.5% X \$440)		11.00

Entries for Payroll 2 and 3

Vacation Wages Payable	550.00	
Wages and Salaries Expense	430.00	
Withholding Taxes Payable (10% X \$980)		98.00
FICA Taxes Payable (7.65% X \$980)		74.97
Union Dues Payable (2% X \$980)		19.60
Cash		787.43

Payroll Tax Expense	89.49	
FICA Taxes Payable (7.65% X \$980)		74.97
Federal Unemployment Tax Payable (.8% X \$440)		3.52
State Unemployment Tax Payable (2.5% X \$440)		11.00

PROBLEM 13-3 (Continued)

Entries for Payroll 4

Wages and Salaries Expense	980.00	
Withholding Taxes Payable (10% X \$980)		98.00
FICA Taxes Payable (7.65% X \$980)		74.97
Union Dues Payable (2% X \$980)		19.60
Cash		787.43
Payroll Tax Expense	89.49	
FICA Taxes Payable (7.65% X \$980)		74.97
Federal Unemployment Tax Payable (.8% X \$440)		3.52
State Unemployment Tax Payable (2.5% X \$440)		11.00

Monthly Payment of Payroll Liabilities

Withholding Taxes Payable (\$98.00 X 4)	392.00	
FICA Taxes Payable (\$74.97 X 8)	599.76	
Union Dues Payable (\$19.60 X 4)	78.40	
Federal Unemployment Tax Payable (\$3.52 X 4)	14.08	
State Unemployment Tax Payable (\$11.00 X 4)	44.00	
Cash		1,128.24

PROBLEM 13-4

(a)

Name	Earnings to Aug. 31	September Earnings	Income Tax Withholding	FICA	State U.C.	Federal U.C.
B. D. Williams	\$ 6,800	\$ 800	\$ 80	\$ 61.20	\$2.00*	\$1.60**
D. Prowse	6,300	700	70	53.55	7.00	5.60
K. Baker	7,600	1,100	110	84.15	—	—
F. Oz	13,600	1,900	190	145.35	—	—
A. Daniels	105,000	15,000	1,500	217.50 ^a	—	—
P. Mayhew	<u>112,000</u>	<u>16,000</u>	<u>1,600</u>	<u>232.00^b</u>	<u>—</u>	<u>—</u>
Total	<u>\$251,300</u>	<u>35,500</u>	<u>\$3,550</u>	<u>\$793.75</u>	<u>\$9.00</u>	<u>\$7.20</u>

*(\$7,000 – 6,800) X 1% = \$2.00

^a\$15,000 X 1.45% = \$217.50

**(\$7,000 – 6,800) X .8% = \$1.60

^b\$16,000 X 1.45% = \$232.00

Wages and Salaries Expense	35,500.00	
Withholding Taxes Payable		3,550.00
FICA Taxes Payable		793.75
Cash		31,156.25

(b) Payroll Tax Expense	809.95	
FICA Taxes Payable		793.75
Federal Unemployment Tax Payable		7.20
State Unemployment Tax Payable		9.00

(c) Withholding Taxes Payable	3,550.00	
FICA Taxes Payable	1,587.50	
Federal Unemployment Tax Payable	7.20	
State Unemployment Tax Payable	9.00	
Cash		5,153.70

PROBLEM 13-5

(a)	Cash (300 X \$3,500) Sales	1,050,000	1,050,000
(b)	Cash (300 X \$3,500) Sales	1,050,000	1,050,000
	Warranty Expense (300 X [\$155 + \$185]) Estimated Liability Under Warranties	102,000	102,000
(c)	No liability would be disclosed under the cash basis method relative to future costs due to warranties on past sales.		
(d)	Current Liabilities: Estimated Liability Under Warranties		\$51,000
	Long-term Liabilities: Estimated Liability Under Warranties		\$51,000
(e)	Warranty Expense Parts Inventory Accrued Payroll	46,300	21,400 24,900
(f)	Estimated Liability Under Warranties Parts Inventory Accrued Payroll	46,300	21,400 24,900

PROBLEM 13-6

(a)	Cash	245,250	
	Sales		225,000
	Unearned Warranty Revenue (270 X \$75)		20,250
(b)	Current Liabilities:		
	Unearned Warranty Revenue		\$ 6,750
	(Note: Warranty costs assumed to be incurred equally over the three-year period)		
	Long-term Liabilities:		
	Unearned Warranty Revenue		\$13,500
(c)	Unearned Warranty Revenue	6,750	
	Warranty Revenue		6,750
	Warranty Expense	5,000	
	Parts Inventory		2,000
	Accrued Payroll		3,000
(d)	Current Liabilities:		
	Unearned Warranty Revenue		\$ 6,750
	Long-term Liabilities:		
	Unearned Warranty Revenue		\$ 6,750

*PROBLEM 13-7

(a)	1.	Cash or Accounts Receivable	4,810,000	
		Sales (650 X \$7,400)		4,810,000
	2.	Warranty Expense	120,250	
		Parts Inventory (\$170 X 650 X 1/2)		55,250
	Accrued Payroll (\$200 X 650 X 1/2)		65,000	
	(\$120,250 = $\frac{650 \times \\$370}{2}$)			
	2			
	3.	Warranty Expense	120,250	
		Estimated Liability Under Warranties		120,250
		(650 machines X \$370) – \$120,250		
	4.	Estimated Liability Under Warranties	120,250	
		Parts Inventory		55,250
		Accrued Payroll		65,000
(b)	1.	Cash or Accounts Receivable	4,810,000	
		Sales		4,810,000
	2.	Warranty Expense	120,250	
		Parts Inventory		55,250
	Accrued Payroll		65,000	
	3.	Under the cash basis method, the total warranty expense is recorded through entries 2 and 4 which recognize warranty costs as incurred. Warranty expense for 2005 is \$120,250 under the cash basis.		
	4.	Warranty Expense	120,250	
		Parts Inventory		55,250
		Accrued Payroll		65,000
(c)	Cash basis method:			
	No liability for future costs to be incurred under outstanding warranties is recorded or normally disclosed under the cash basis method.			

PROBLEM 13-7 (Continued)

Expense warranty accrual method:

As of 12/31/05 the balance sheet would disclose a current liability in the amount of \$120,250 for Estimated Liability Under Warranties.

- (d) In the case of Albert Pujols Company, the expense warranty accrual method reflects properly the income resulting from operations in 2005 and 2006 because the warranty costs are matched with the revenues resulting from the sale, which required such costs to be incurred. Under the cash basis method, the warranty costs appearing on the 2006 income statement are charged against unrelated revenues; 2005 net income is overstated and 2006 net income is understated.**

PROBLEM 13-8

Inventory of Premium Puppets.....	60,000	
Cash.....		60,000
(To record purchase of 40,000 puppets at \$1.50 each)		
Cash	1,650,000	
Sales		1,650,000
(To record sales of 440,000 boxes at \$3.75 each)		
Premium Expense.....	31,500	
Inventory of Premium Puppets		31,500
[To record redemption of 105,000 coupons. Computation: (105,000 ÷ 5) X \$1.50 = \$31,500]		
Premium Expense.....	21,300	
Estimated Liability for Premiums		21,300
[To record estimated liability for premium claims outstanding at December 31, 2005.]		
Computation: Total coupons issued in 2005		<u>440,000</u>
Total estimated redemptions (40%)		176,000
Coupons redeemed in 2002		<u>105,000</u>
Estimated future redemptions		<u>71,000</u>
Cost of estimated claims outstanding (71,000 ÷ 5) X \$1.50 = \$21,300		

PROBLEM 13-9

(a) 2004

Inventory of Premium CDs	450,000	
Cash		450,000
(To record the purchase of 250,000 CDs at \$1.80 each)		

Cash	868,620	
Sales		868,620
(To record the sale of 2,895,400 candy bars at 30 cents each)		

Cash (\$480,000 – \$72,000)	408,000	
Premium Expense	24,000	
Inventory of Premium CDs		432,000
[To record the redemption of 1,200,000 wrappers, the receipt of \$480,000 (1,200,000 ÷ 5) X \$2.00, and the mailing of 240,000 CDs]		

Computation of premium expense:

240,000 CDs @ \$1.80 each =	\$432,000	
Postage—240,000 X \$.30 =	<u>72,000</u>	
	\$504,000	
Less: Cash received—		
240,000 X \$2.00	<u>480,000</u>	
Premium expense for CDs issued	<u>\$ 24,000</u>	

Premium Expense	5,800*	
Estimated Liability for Premiums		5,800
(To record the estimated liability for premium claims outstanding at 12/31/04)		
*(290,000 ÷ 5) X (\$1.80 + \$.30 – \$2.00) = \$5,800		

PROBLEM 13-9 (Continued)

2005

Inventory of Premium CDs	594,000	
Cash		594,000
(To record the purchase of 330,000 CDs at \$1.80 each)		
Cash	823,080	
Sales		823,080
(To record the sale of 2,743,600 candy bars at 30 cents each)		
Cash (\$600,000 – \$90,000)	510,000	
Estimated Liability for Premiums	5,800	
Premium Expense	24,200	
Inventory of Premium CDs		540,000
(To record the redemption of 1,500,000 wrappers, the receipt of \$600,000 [(1,500,000 ÷ 5) X \$2.00], and the mailing of 300,000 CDs.)		
Computation of premium expense:		
300,000 CDs @ \$1.80 =	\$540,000	
Postage—300,000 @ .30 =	<u>90,000</u>	
	630,000	
Less: Cash received—		
(1,500,000 ÷ 5) X \$2.00	<u>600,000</u>	
Premium expense for CDs issued	30,000	
Less: Outstanding claims at 12/31/04 charged to 2004 but redeemed in 2005	<u>5,800</u>	
Premium expense chargeable to 2005	<u>\$ 24,200</u>	
Premium Expense	\$ 7,000*	
Estimated Liability for Premiums		7,000
*(350,000 ÷ 5) X (\$1.80 + \$.30 – \$2.00) = \$7,000		

PROBLEM 13-9 (Continued)

(b)

Account	Amount		Classification
	2004	2005	
Inventory of Premium CDs	\$18,000*	\$72,000**	Current asset
Estimated Liability for Premiums	5,800	7,000	Current liability
Premium Expense	29,800***	31,200****	Selling expense

* $\$1.80 (250,000 - 240,000)$

** $\$1.80 (10,000 + 330,000 - 300,000)$

*** $\$24,000 + \$5,800$

**** $\$24,200 + \$7,000$

PROBLEM 13-10

- (a) Because the cause for litigation occurred before the date of the financial statements and because an unfavorable outcome is probable and reasonably estimable, Tom Paris Airlines should report a loss and a liability in the December 31, 2004, financial statements. The loss and liability might be recorded as follows:

Loss from Uninsured Accident		
(\$5,000,000 X 60%)	3,000,000	
Liability for Uninsured Accident		3,000,000

Note to the Financial Statements

Due to an accident which occurred during 2004, the Company is a defendant in personal injury suits totaling \$5,000,000. The Company is charging the year of the casualty with \$3,000,000 in estimated losses, which represents the amount that the company legal counsel estimates will finally be awarded.

- (b) Tom Paris Airlines need not establish a liability for risk of loss from lack of insurance coverage itself. FASB Statement No. 5 does not require or allow the establishment of a liability for expected future injury to others or damage to the property of others even if the amount of the losses is reasonably estimable. The cause for a loss must occur on or before the balance sheet for a loss contingency to be recorded. However, the fact that Tom Paris is self-insured should be disclosed in a note.

PROBLEM 13-11

(a)	1. Loss from Uninsured Accident	225,000	
	Liability for Uninsured Accident		225,000
	2. Loss Due to Expropriation	2,245,000	
	Allowance for Expropriation		2,245,000
	[\$5,725,000 – (40% X \$8,700,000)]		
	3. No entry required.		

(b) 1. A loss and a liability have been recorded in the first case because (i) information is available prior to the issuance of the financial statements that indicates it is probable that a liability had been incurred at the date of the financial statements and (ii) the amount is reasonably estimable. That is, the occurrence of the uninsured accidents during the year plus the outstanding injury suits and the attorney's estimate of probable loss required recognition of a loss contingency.

2. An entry to record a loss and establish an allowance due to threat of expropriation is necessary because the expropriation is imminent as evidenced by the foreign government's communicated intent to expropriate and the prior settlements for properties already expropriated. That is, enough evidence exists to reasonably estimate the amount of the probable loss resulting from impairment of assets at the balance sheet date. The amount of the loss is measured by the amount that the carrying value (book value) of the assets exceeds the expected compensation. At the time the expropriation occurs, the related assets are written off against the allowance account. In this problem, we established a valuation account because certain specific assets were impaired. A valuation account was established rather than a liability account because the net realizability of the assets affected has decreased. A more appropriate presentation would, therefore, be provided for balance sheet purposes on the realizability of the assets. It does not seem appropriate at this point to write off the assets involved because it may be difficult to determine all the specific assets involved, and because the assets still have not been expropriated.

PROBLEM 13-11 (Continued)

- 3. Even though Shoyo's chemical product division is uninsurable due to high risk and has sustained repeated losses in the past, as of the balance sheet date no assets have been impaired or liabilities incurred nor is an amount reasonably estimable. Therefore, this situation does not satisfy the criteria for recognition of a loss contingency. Also, unless a casualty has occurred or there is some other evidence to indicate impairment of an asset prior to the issuance of the financial statements, there is no disclosure required relative to a loss contingency. The absence of insurance does not of itself result in the impairment of assets or the incurrence of liabilities. Expected future injuries to others or damage to the property of others, even if the amount is reasonably estimable, does not require recording a loss or a liability. The cause for loss or litigation or claim must have occurred on or prior to the balance sheet date and the amount of the loss must be reasonably estimable in order for a loss contingency to be recorded. Disclosure is required when one or both of the criteria for a loss contingency are not satisfied and there is a reasonable possibility that a liability may have been incurred or an asset impaired, or, it is probable that a claim will be asserted and there is a reasonable possibility of an unfavorable outcome.**

PROBLEM 13-12

(1)	Sales of musical instruments and sound equipment	\$5,400,000
	Estimated warranty cost	<u>.02</u>
	Warranty expense for 2004	<u>\$ 108,000</u>
(2)	Estimated liability for warranties—1/1/04	\$ 136,000
	2004 warranty expense (Requirement 1)	<u>108,000</u>
	Subtotal	244,000
	Actual warranty costs during 2004	<u>164,000</u>
	Estimated liability from warranties—12/31/04	<u>\$ 80,000</u>
(3)	Coupons issued (1 coupon/\$1 sale)	1,800,000
	Estimated redemption rate	<u>.60</u>
	Estimated number of coupons to be redeemed	1,080,000
	Exchange rate (200 coupons for a cassette player)	<u>÷ 200</u>
	Estimated number of premium cassette players to be issued	5,400
	Net cost of cassette players (\$34 – \$20)	<u>14</u>
	Premium expense for 2004	<u>\$ 75,600</u>
(4)	Inventory of premium cassette players—1/1/04	\$ 39,950
	Premium cassette players purchased during 2004 (6,500 X \$34)	<u>221,000</u>
	Premium cassette players available	260,950
	Premium cassette players exchanged for coupons during 2004 (1,200,000/200 X \$34)	<u>\$ 204,000</u>
	Inventory of premium cassette players—12/31/04	<u>\$ 56,950</u>
(5)	Estimated liability for premiums—1/1/04	\$ 44,800
	2004 premium expense (Requirement 3)	<u>\$ 75,600</u>
	Subtotal	\$ 120,400
	Actual redemptions during 2004 [1,200,000/200 X (\$34 – \$20)]	<u>\$ 84,000</u>
	Estimated liability for premiums—12/31/04	<u>\$ 36,400</u>

PROBLEM 13-13

1.

Memo prepared by:

Date:

**Christine Agazzi Corporation
December 31, 2004**

Recognition of Warranty Expense

During June of this year, the client began manufacture and sales of a new line of dishwasher. Sales of 100,000 dishwashers during this period amounted to \$50,000,000. These dishwashers were sold under a one-year warranty, and the client estimates warranty costs to be \$25 per appliance.

As of the balance sheet date, the client paid out \$1,000,000 in warranty expenses which was also the amount expensed in its income statement. No recognition of any further liability associated with the warranty had been made.

Because Agazzi accounts for warranties on the accrual basis, it must recognize the entire \$2,500,000 as warranty expense in the year of sale. I advised the client to make the following journal entries:

(a)	Cash/Accounts Receivable	50,000,000	
	Sales		50,000,000
	(To record sale of 100,000 dishwashers)		
(b)	Warranty Expense	1,000,000	
	Cash, Inventory, Accrued Payroll		1,000,000
	(To record warranty costs incurred)		
(c)	Warranty Expense	1,500,000	
	Estimated Liability Under Warranties		1,500,000
	(To accrue estimated warranty costs)		

PROBLEM 13-13 (Continued)

2.

**Memo prepared by:
Date:**

**Christine Agazzi Corporation
December 31, 2004**

**Loss Contingency from Violation
Of EPA Regulations**

I contacted the client's counsel via a routine attorney letter, asking for information about possible litigation in which the company might be involved. Robert Sklodowski, Agazzi's attorney, informed me about court action taken against Agazzi for dumping toxic waste in the Kishwaukee River.

Although the litigation is pending, Sklodowski believes that the suit will probably be lost. A reasonable estimate of clean up costs and fines is \$3,330,000. The client neither disclosed nor accrued this loss in the financial statements

Because this loss is both probable and reasonably estimable, it must be accrued as a contingent liability. I advised the client to record the following entry to accrue this liability.

Expense from Loss Contingency	3,330,000	
Accrued Loss		3,330,000

PROBLEM 13-13 (Continued)

3.

**Memo prepared by:
Date:**

**Christine Agazzi Corporation
December 31, 2004**

**Loss Contingency on
Patent Infringement Litigation**

In answer to my attorney letter requesting information about any possible litigation associated with the client, Robert Sklodowski informed me that the client is in the middle of a patent infringement suit with Heidi Goldman over a hydraulic compressor used in several of Agazzi's appliances. The possible loss of this suit is only reasonably possible. Agazzi did not in any way disclose this information.

Because the loss is reasonably possible and can be estimated at \$5,000,000, it must be disclosed in the notes to the financial statements. I advised the client to include as a footnote to the financial statements a discussion of this pending litigation along with the attorney's assessment that the loss is reasonably possible. In addition, I advised the client to disclose the estimated amount of this loss contingency.

***PROBLEM 13-14**

(B = bonus; T = taxes)

(a) B = 0.12 (\$250,000)

B = \$30,000

T = .40 (\$250,000 – \$30,000)

T = \$88,000

=

(b) B = 0.12 (\$308,000 – B)

B = \$36,960 – .12B

1.12B = \$36,960

B = \$33,000

T = 0.40 (\$308,000 – \$33,000)

T = \$110,000

(c) B = 0.12 (\$350,000 – T)

T = 0.40 (\$350,000 – B)

B = 0.12 [\$350,000 – 0.40 (\$350,000 – B)]

B = 0.12 (\$350,000 – \$140,000 + .4B)

B = \$25,200 + .048B

0.952B = \$25,200

B = \$26,470.59

T = .40 (\$350,000 – \$26,470.59)

T = \$129,411.76

(d) B = 0.12 (\$380,000 – B – T)

T = 0.40 (\$380,000 – B)

B = 0.12 [\$380,000 – B – .40 (\$380,000 – B)]

B = 0.12 (\$380,000 – B – \$152,000 + 0.4B)

B = 0.12 (\$228,000 – 0.6B)

B = \$27,360 – .072B

1.072B = \$27,360

B = \$25,522.39

T = 0.40 (\$380,000 – \$25,522.39)

T = \$141,791.04

PROBLEM 13-15

1. Estimated warranty costs:

On 2002 sales \$ 800,000 X .09	\$ 72,000
On 2003 sales \$1,100,000 X .09	99,000
On 2004 sales \$1,200,000 X .09	<u>108,000</u>
Total estimated costs	279,000
Total warranty expenditures	<u>85,700*</u>
Balance of liability, 12/31/04	<u>\$193,300</u>

*2002—\$6,500; 2003—\$17,200, and 2004—\$62,000.

The liability account has a balance of \$193,300 at 12/31/04 based on the difference between the estimated warranty costs (totaling \$279,000) for the three years' sales and the actual warranty expenditures (totaling \$85,700) during that same period.

***2.**

$$\begin{aligned} \text{Tax} &= .40 (\$1,035,000 - C) \\ \text{Contribution} &= .25 (\$1,035,000 - C - T) \\ C &= .25 [\$1,035,000 - C - .40 (\$1,035,000 - C)] \\ C &= .25 (\$1,035,000 - C - \$414,000 + .40C) \\ C &= .25 (\$621,000 - .6C) \\ C &= \$155,250 - .15C \\ 1.15C &= \$155,250 \\ C &= \$135,000 \end{aligned}$$

3. Computation of liability for premium claims outstanding:

Unredeemed coupons for 2004	
(\$9,000 - \$8,000)	\$ 1,000
2004 coupons estimated to be redeemed	
(\$25,000 X .40)	<u>10,000</u>
Total	<u>\$11,000</u>

TIME AND PURPOSE OF CASES

Case 13-1 (Time 20-25 minutes)

Purpose—to provide the student with the opportunity to define liability, to distinguish between current and long-term liabilities, and to explain accrued liabilities. The student must also describe how liabilities are valued, speculate as to why notes payable are usually reported first in the current liabilities, and to indicate the items that may comprise the “compensation to employees.”

Case 13-2 (Time 15-20 minutes)

Purpose—to provide three situations that require the application of judgment about the current or long-term nature of the items. The student must think about when typical short-term items might not be classified as current.

Case 13-3 (Time 30-40 minutes)

Purpose—to provide the student with a comprehensive case covering refinancing of short-term debt. Four situations are presented in which the student must determine the proper classification and disclosure of the debt in the financial statements. In order to thoroughly resolve the issues presented, the student is expected to research **FASB Statement No. 6**.

Case 13-4 (Time 20-25 minutes)

Purpose—to provide an opportunity for the student to analyze a situation in which short-term debt is refinanced. The student must comment on the proper balance sheet classification for the debt at three different balance sheet dates. The student is also required to determine the proper balance sheet classifications if instead of actually refinancing the debt, a financing agreement had been initiated. A structural case which calls for the student to apply the principles related to refinancing of short-term debt.

Case 13-5 (Time 15-20 minutes)

Purpose—to provide the student with an opportunity to comment on the proper treatment in the financial statements of a contingent loss incurred after the balance sheet date but before issuance of the financial statements. In order to thoroughly answer the case the student will need to understand **FASB Statement No. 5**.

Case 13-6 (Time 15-20 minutes)

Purpose—to provide the student with an opportunity to specify the conditions by which a loss contingency can be recorded in the accounts. The student is also required to indicate the proper disclosure in the financial statements of the situations where the amount of loss cannot be reasonably estimated.

Case 13-7 (Time 15-20 minutes)

Purpose—the student discusses how product warranty costs and the fact that a company is being sued should be reported.

Case 13-8 (Time 20-25 minutes)

Purpose—the student is given the opportunity to examine the ethical issues related to estimates for bad debts and warranty obligations.

SOLUTIONS TO CASES

CASE 13-1

- (a) A liability is defined as “probable future sacrifices of economic benefits arising from present obligations of a particular entity to transfer assets or provide services to other entities in the future as a result of past transactions or events.” In other words, it is an obligation to transfer some type of resource in the future as a result of a past transaction.
- (b) Current liabilities are “obligations whose liquidation is reasonably expected to require use of existing resources properly classified as current assets or the creation of other current liabilities.” In other words, they are liabilities generally payable within one year or the operating cycle, whichever is longer.
- (c) Accrued liabilities (sometimes called accrued expenses) arise through accounting recognition of unpaid expenses that come into existence as a result of past contractual commitments or past services received. Examples are wages payable, salaries payable, interest payable, property taxes payable, income tax payable, payroll taxes payable, bonus payable, postretirement benefits payable, and so on.
- (d) Theoretically, liabilities should be measured by the present value of the future outlay of cash required to liquidate them. But in practice, current liabilities are usually recorded in accounting records and reported in financial statements at their maturity value. Because of the short time periods involved—frequently less than one year—the difference between the present value of a current liability and the maturity value is not large. The slight overstatement of liabilities that results from carrying current liabilities at maturity value is accepted on the grounds it is immaterial.
- (e) Notes payable are listed first in the balance sheet because in liquidation they would probably be paid first.
- (f) The item compensation to employees might include:
 - 1. Wages, salaries, or bonuses payable.
 - 2. Compensated absences payable.
 - 3. Postretirement benefits payable.

CASE 13-2

- 1. Since the notes payable are due in less than one year from the balance sheet date, they would generally be reported as a current liability. The only situation in which this short-term obligation could possibly be excluded from current liabilities is if D’Annunzio Corp. intends to refinance it. For those notes to qualify for exclusion from current liabilities, the company must meet the following criteria:
 - (1) It must intend to refinance the obligation on a long-term basis, and
 - (2) It must demonstrate an ability to consummate the refinancing.

The second criteria, ability to refinance, can be demonstrated either by actually refinancing before the balance sheet is issued or by entering into a noncancelable financing agreement, which has not been violated, with a capable lender. Only that portion of the \$25,000,000 which has been refinanced can be reclassified.

CASE 13-2 (Continued)

2. Generally, deposits from customers would be classified as a current liability. However, the classification of deposits as current or noncurrent depends on the time involved between the date of deposit and the termination of the relationship that required the deposit. In this case, the \$6,250,000 would be excluded from current liabilities only if the equipment would not be delivered for more than one year (or one operating cycle, if longer).
3. Salaries payable is an accrued liability which in almost all circumstances would be reported as a current liability (could not be excluded).

CASE 13-3

(This case requires some research of **FASB Statement No. 6**.)

- (a) No. **FASB Statement No. 6**, paragraph 2, states that refinancing a short-term obligation on a long-term basis means either replacing it with a long-term obligation or with equity securities, or renewing, extending, or replacing it with short-term obligations for an uninterrupted period extending beyond one year (or the operating cycle, if applicable) from the date of an enterprise's balance sheet.

Management's intent to refinance the obligation on a long-term basis is not enough to warrant reclassification of the short-term obligation. **FASB Statement No. 6**, paragraph 11, indicates that the enterprise's intent must be supported by an ability to consummate the refinancing demonstrated in a way specified in paragraph 11 of the Statement.

- (b) Yes. The events described will have an impact on the financial statements. Since Eshkol Corporation refinanced the long-term debt maturing in March 2005 in a manner that meets the conditions set forth in **FASB Statement No. 6**, paragraphs 10 and 11, that obligation should be excluded from current liabilities. The \$11,000,000 should be classified as long-term at December 31, 2004.

A short-term obligation, other than one classified as a current liability in paragraph 8 of the Statement, shall be excluded from current liabilities if the enterprise's intent to refinance the short-term obligation on a long-term basis is supported by an ability to consummate the refinancing demonstrated in one of the ways stipulated in paragraph 11 of the Statement. One of the ways stipulated is the issuance of long-term debt or equity securities after the date of the balance sheet but before that balance sheet is issued. The issuance of the long-term debt or equity securities must be for the purpose of refinancing the short-term obligation on a long-term basis.

- (c) No. since Eshkol Corporation refinanced the long-term debt maturing in March 2005 in a manner that meets the conditions set forth in **FASB Statement No. 6**, paragraphs 10 and 11, that obligation should be excluded from current liabilities.
- (d)
 1. No. The \$11,000,000 should be shown under the caption of either "Long-Term Debt," "Interim Debt," "Short-Term Debt Expected to Be Refinanced," or "Intermediate Debt."
 2. Yes. Paragraph 15 of the Statement provides that total current liabilities shall be presented in classified balance sheets. If a short-term obligation is excluded from current liabilities pursuant to the provisions of this statement, the notes to the financial statements shall include a general description of the financing agreement and the terms of any new obligation incurred or expected to be incurred or equity securities issued or expected to be issued as a result of a refinancing.

CASE 13-4

- (a) The \$4,000,000 of commercial paper liquidated in January would be classified as a current liability in the corporation's balance sheet at December 31, 2003. Since the \$4,000,000 of commercial paper is liquidated in January 2004, this amount would not appear on either the January 31, 2004 or February 28, 2004 balance sheets. The \$6,000,000 of commercial paper liquidated in March 2004 but refinanced by the long-term debt offering in February 2004 would be excluded from current liabilities in the balance sheets at the end of December 2003, January 2004, and February 2004; this \$6,000,000 would be classified as long-term debt. At the end of February 2004, \$6,000,000 of cash would be excluded from current assets or if included in current assets, a like amount of debt would be classified as a current liability.

The position of FASB in **Interpretation No. 8** is that if a short-term obligation is repaid after the balance sheet date and subsequently long-term debt is issued, whose proceeds are used to replenish current assets before the balance sheet is issued, the short-term obligation should be included in current liabilities.

- (b) The classifications are the same as in part (a). The intent to refinance accompanied with a financing agreement is considered equivalent to an actual refinancing for purposes of classifying the short-term obligation.

CASE 13-5

Because the casualty occurred subsequent to the balance sheet date, it does not meet the criteria of a loss contingency; that is, an asset had not been impaired or a liability incurred at the date of the balance sheet. Therefore, a loss contingency should not be accrued by a charge to expense due to the explosion. However, because it had become known before the financial statements were issued that assets were impaired and liabilities were incurred after the balance sheet date, disclosure is necessary to keep the financial statements from being misleading. The financial statements should indicate the nature of and an estimate of the loss to the company's assets as a result of the explosion and the nature of and an estimate of the loss contingency anticipated from suits that will be filed and claims asserted for injuries and damages.

If the loss to assets or the liability incurrence can be reasonably estimated, disclosure may best be made by supplementing the historical financial statements with pro forma financial data giving effect to the loss as if it had occurred at the date of the financial statements (see paragraph 11 of **FASB Statement No. 5**).

CASE 13-6

- (a) Two conditions must exist before a loss contingency is recorded:
1. Information available prior to the issuance of the financial statements indicates that it is probable that a liability has been incurred at the date of the financial statements.
 2. The amount of the loss can be reasonably estimated.
- (b) When some amount within the range appears at the time to be a better estimate than any other amount within the range, that amount is accrued. When no amount within the range is a better estimate than any other amount, the dollar amount at the low end of the range is accrued and the dollar amount at the high end of the range is disclosed.
- (c) If the amount of the loss is uncertain, the following disclosure in the notes is required:
1. The nature of the contingency.
 2. An estimate of the possible loss or range of loss or a statement that an estimate cannot be made.

CASE 13-7

Part I. For Product John, the estimated product warranty costs should be accrued by a charge to expense and a credit to a liability because both of the following conditions were met:

1. It is probable that a liability has been incurred based on past experience.
2. The amount of loss can be reasonably estimated as 1% of sales. Thus the matching principle is being followed.

For Product Hendrick, the estimated product warranty costs should not be accrued by a charge to income because the amount of loss cannot be reasonably estimated. Since only one condition is satisfied, a disclosure by means of a note should be made.

Part II. The probable judgment (\$800,000) should be accrued by a charge to expense and a credit to a liability because both of the following conditions were met.

1. It is probable that a liability has been incurred because Toni Morrison's lawyer states that it is probable that Toni Morrison will lose the suit.
2. The amount of loss can be reasonably estimated because Toni Morrison's lawyer states that the most probable judgment is \$800,000.

Thus, the principle of conservatism is being followed.

Toni Morrison should disclose in its financial statements or notes the following:

The amount of the suit (\$4,000,000).

The nature of the accrual.

The nature of contingency.

The range of possible loss (\$400,000 to \$2,000,000).

CASE 13-8

- (a) No, not if his original estimates are reasonable.
- (b) Creighton Clothing Store benefits in lower rental expense. The Ray Company is harmed because the misleading financial statement deprives it of its rightful rental fees. In addition, the current stockholders of Creighton Clothing Store are harmed because the lower net income reduces the current value of their holdings.
- (c) Creighton is acting unethically to avoid the terms of his rental agreement at the expense of his landlord and his own stockholders.

FINANCIAL REPORTING PROBLEM

- (a) 3M's short-term borrowings were \$1,373 million at December 31, 2001.

SHORT-TERM DEBT (In millions)	Effective Interest Rate	2001
U.S. dollar commercial paper	2.60%	\$ 731
Non-U.S. dollar commercial paper	3.92%	145
5.6523% dealer remarketable securities	5.65%	350
Long-term debt—current portion	8.94%	5
Long-term debt—current portion— ESOP debt guarantee	5.62%	32
Other borrowings	7.25%	<u>110</u>
Total short-term debt		<u>\$ 1,373</u>

- (b) (1) Working capital = Current assets less current liabilities.

$$\$1,787,000,000 = \$6,296,000,000 - \$4,509,000,000$$

(2) Acid-test ratio =
$$\frac{\text{Cash + net receivables}}{\text{Current liabilities}}$$

$$.69 \text{ times} = \frac{\$616,000,000 + \$2,482,000,000}{\$4,509,000,000}$$

(3) Current ratio =
$$\frac{\text{Current assets}}{\text{Current liabilities}}$$

$$1.4 \text{ times} = \frac{6,296,000,000}{4,509,000,000}$$

3M has a fairly strong liquidity position. The current ratio exceeds 1. The acid test ratio is below 1, possibly due to a slowing economy.

FINANCIAL REPORTING PROBLEM (Continued)

(c) 3M provided the following discussion related to contingencies:

Note 21: LEGAL PROCEEDINGS

The Company and some of its subsidiaries are named as defendants in a number of actions, governmental proceedings and claims, including environmental proceedings and products liability claims involving products now or formerly manufactured and sold by the company. In some actions, the claimants seek damages as well as other relief, which, if granted, would require substantial expenditures. The company has recorded liabilities, which represent reasonable estimates of its probable liabilities for these matters. The company also has recorded receivables for the probable amount of insurance recoverable with respect to these matters (refer to Note 6 on page 43).

Some of these matters raise difficult and complex factual and legal issues, and are subject to many uncertainties, including, but not limited to, the facts and circumstances of each particular action, the jurisdiction and forum in which each action is proceeding and differences in applicable law.

While the company believes that the ultimate outcome of all of its proceedings and claims, individually and in the aggregate, will not have a material adverse effect on its consolidated financial position, results of operations or cash flows, there can be no certainty that the company may not ultimately incur charges, whether for breast implant litigation, respirator/mask/asbestos litigation, environmental matters or other actions, in excess of presently recorded liabilities.

The company cannot always definitively determine possible liabilities that exceed recorded amounts related to its legal proceedings and claims. However, the company believes it is unlikely, based upon the nature of its legal proceedings and claims and its current knowledge of relevant facts and circumstances, that the possible liabilities exceeding recorded amounts would be material to its consolidated financial position, results of operations or cash flows. With respect to products liability claims, such a conclusion about possible liabilities considers insurance coverage available for such liabilities.

FINANCIAL REPORTING PROBLEM (Continued)

While the company believes that a material adverse impact on its consolidated financial position, results of operations or cash flows from any such future charges is unlikely, given the inherent uncertainty of litigation, a remote possibility exists that a future adverse ruling or unfavorable development could result in future charges that could have a material adverse impact on the company. The current estimates of the potential impact on the company's consolidated financial position, results of operations and cash flows for its legal proceedings and claims could change in the future.

FINANCIAL STATEMENT ANALYSIS CASE 1

NORTHLAND CRANBERRIES

- (a) Working capital is calculated as (current assets – current liabilities), while the current ratio is calculated as (current assets/current liabilities). For Northland Cranberries these ratios are calculated as follows:

	Current year	Prior year
Working capital	$\$6,745,759 - \$10,168,685 = \$-3,422,926$	$\$5,598,054 - \$4,484,687 = \$1,113,367$
Current ratio	$(\$6,745,759/\$10,168,685) = .66$	$(\$5,598,054/\$4,484,687) = 1.25$

Historically, it was generally believed that a company should maintain a current ratio of at least 2.0. In recent years, because companies have been able to better maintain their inventory, receivables and cash, many healthy companies have ratios well below 2.0. However, Northland Cranberries has negative working capital in the current year, and current ratios in both years are extremely low. This would be cause for concern and additional investigation. As you will see in the next discussion point, there may well be a reasonable explanation.

- (b) This illustrates a potential problem with ratios like the current ratio, that rely on balance sheet numbers that present a company's financial position at a particular point in time. That point in time may not be representative of the average position of the company during the course of the year, and also, that point in time may not be the most relevant point for evaluating the financial position of the company. If the company does not like the representation that these commonly used measures give of the company's position, it could change its year-end or suggest other measures that it considers to be more relevant for a company in this business. Also, it is possible that by using averages calculated across quarterly data some of this problem might be alleviated. As discussed in Chapter 5, you will also learn about measures that employ cash flows, which addresses at least part of the point-in-time problem of balance sheet ratios.

FINANCIAL STATEMENT ANALYSIS CASE 2

- (a) Under the cash basis, warranty costs are charged to expense as they are incurred; in other words, warranty costs are charged in the period in which the seller or manufacturer performs in compliance with the warranty. No liability is recorded for future costs arising from warranties, nor is the period in which the sale is recorded necessarily charged with the costs of making good on outstanding warranties.

If it is probable that customers will make claims under warranties relating to goods or services that have been sold, and a reasonable estimate of the costs involved can be made, the accrual method must be used. Under the accrual method, a provision for warranty costs is made in the year of sale or in the year that the productive activity takes place.

- (b) When the warranty is sold separately from the product, the sales warranty approach is employed. Revenue on the sale of the extended warranty is deferred and is generally recognized on a straight-line basis over the life of the contract. Revenue is deferred because the seller of the warranty has an obligation to perform services over the life of the contract.
- (c) The general approach is to use the straight-line method. If historical evidence indicates that costs incurred do not follow a straight-line approach, then revenue should be recognized over the contract period in proportion to the costs expected to be incurred in performing services under the contract. Only costs that vary with and are directly related to the acquisition of the contracts (mainly commissions) should be deferred and amortized. Costs such as employee's salaries, advertising, and general and administrative expenses that would have been incurred even if no contract were acquired should be expensed as incurred.

COMPARATIVE ANALYSIS CASE

(a) The working capital position of the two companies is as follows:

PepsiCo, Inc.

Current assets	\$ 5,853,000,000
Current liabilities	<u>4,998,000,000</u>
Working capital	<u>\$ 855,000,000</u>

The Coca-Cola Company

Current assets	\$ 7,171,000,000
Current liabilities	<u>8,429,000,000</u>
Working capital	<u>\$ (1,258,000,000)</u>

The Coca-Cola Company explains its deficit in working capital in the following fashion:

Our global presence and strong capital position afford us easy access to key financial markets around the world, enabling us to raise funds with a low effective cost. This posture, coupled with the aggressive management of our mix of short-term and long-term debt, results in a lower overall cost of borrowing. Our debt management policies, in conjunction with our share repurchase program and investment activity, typically result in current liabilities exceeding current assets.

Much the same is true of PepsiCo, Inc. PepsiCo notes that because of its strong cash-generating ability and its strong financial condition, PepsiCo has continued access to capital markets throughout the world.

COMPARATIVE ANALYSIS CASE (Continued)

(b) The overall liquidity of both companies is excellent as indicated from the ratio analysis provided below:

(all computations in millions)		
	PepsiCo, Inc.	Coca-Cola
Current cash debt coverage ratio	$\frac{\$4,201}{\$4,998 + \$4,795} = .86$ <div style="text-align: center;">2</div>	$\frac{\$4,110}{\$8,429 + \$9,321} = .46$ <div style="text-align: center;">2</div>
(all computations in millions)		
	PepsiCo, Inc.	Coca-Cola
Cash debt coverage ratio	$\frac{\$4,201}{\$13,021 + \$13,131} = .32$ <div style="text-align: center;">2</div>	$\frac{\$4,110}{\$11,051 + \$11,518} = .36$ <div style="text-align: center;">2</div>
Current ratio	$\frac{\$5,853}{\$4,998} = 1.17$	$\frac{\$7,171}{\$8,429} = .85$
Acid-test ratio	$\frac{\$683 + \$966 + \$2,142}{\$4,998} = .76$	$\frac{\$1,866 + \$68 + \$1,882}{\$8,429} = .45$
Receivables turnover	$\frac{\$26,935}{\$2,142 + \$2,129} = 12.61$ <div style="text-align: center;">2</div>	$\frac{\$20,092}{\$1,882 + \$1,757} = 11.04$ <div style="text-align: center;">2</div>
Inventory turnover	$\frac{\$10,754}{\$1,310 + \$1,192} = 8.6$ <div style="text-align: center;">2</div>	$\frac{\$6,044}{\$1,055 + \$1,066} = 5.7$ <div style="text-align: center;">2</div>

COMPARATIVE ANALYSIS CASE (Continued)

(c) As indicated in the chapter, a company can exclude a short-term obligation from current liabilities only if both of the following conditions are met:

- 1. It must intend to refinance the obligation on a long-term basis, and**
- 2. It must demonstrate an ability to consummate the refinancing.**

At year-end 2001, \$3.75 billion of short-term borrowings were classified as long-term debt, reflecting PepsiCo's intent and ability, through the existence of the unused credit facilities, to refinance these borrowings. These credit facilities exist largely to support the issuance of short-term borrowings and are available for acquisitions and other general purposes.

PepsiCo uses variable interest rate debt for 52% of total debt. Note that PepsiCo is using interest rate swaps to convert fixed rate debt to variable and vice-versa.

(d) Coca-Cola discusses its contingencies in the following note:

NOTE 10: COMMITMENTS AND CONTINGENCIES

On December 31, 2001, we were contingently liable for guarantees of indebtedness owned by third parties in the amount of \$436 million, of which \$10 million related to the Company's equity investee bottlers. We do not consider it probable that we will be required to satisfy these guarantees.

We believe our exposure to concentrations of credit risk is limited, due to the diverse geographic areas covered by our operations.

We have committed to make future marketing expenditures of \$1,326 million, of which the majority is payable over the next 12 years.

The Company is involved in various legal proceedings. Management believes that any liability to the Company which may arise as a result of these proceedings will not have a material adverse effect on the financial condition of the Company taken as a whole.

COMPARATIVE ANALYSIS CASE (Continued)

PepsiCo Co. discusses its contingencies in the following note:

NOTE 20: COMMITMENTS, CONTINGENCIES AND LEASES

Contingent liabilities primarily reflect guarantees to support financial arrangements of certain unconsolidated affiliates, including the unconditional guarantee for \$2.3 billion of Bottling Group, LLC's long-term debt. We believe that the ultimate liability, if any, in excess of amounts already recognized arising from such claims or contingencies is not likely to have a material adverse effect on our results of operations, financial condition or liquidity.

RESEARCH CASE 1

- (a) Of the 656 gain contingencies identified in the 2001 edition of *Accounting Trends and Techniques*, 353 are related to operating loss carry forwards, 202 are related to tax credits, 39 are investment credit carry forwards, 29 pertain to plaintiff litigation, 28 are due to capital loss carry forwards, and 5 to other gain contingencies.**
- (b) All three gain litigation-related footnotes include dollar amounts. Both contingent receivable notes included have dollar amounts.**
- (c) The amounts disclosed range from approximately \$250,000 (Scientific Industries) to \$271 million (Johnson and Johnson).**

RESEARCH CASE 2

- (a) According to *SFAS No. 5*, recognition of a loss contingency, (which is what these anticipated claims represent), is required if both of the following conditions are met:
- (a) It is probable that a liability has been incurred, and
 - (b) The amount of the loss can be reasonably estimated.

It appears in the article that both of these conditions are met. Georgia Pacific already has a number of lawsuits filed against it related to its gypsum products made from 1965–1977. In addition, Georgia Pacific has hired a research firm to help it arrive at a reasonable estimate for the amount of its potential obligations.

(b)	Loss on Estimated Asbestos Claims	221,000,000
	Asbestos Claims Liability	221,000,000

The loss would be reported as an other gain or loss (not extraordinary) in the income statement. The liability would appear in Georgia Pacific's balance sheet, probably as long term. Note disclosure would explain the nature of the contingency and how the obligation was estimated.

- (c) Georgia Pacific hired economic consultants to help them develop estimates of their asbestos obligation. Presumably, these consultants have experience in other cases involving settlements of claims related to asbestos injuries. With enough prior data concerning settlement of asbestos cases, the consultants would be able to arrive at a reliable estimate for Georgia Pacific's asbestos obligation.

INTERNATIONAL REPORTING CASE

(a)	Hoechst	Merck
Current ratio	$\frac{20,528}{5,346} = 3.84$	$\frac{10,229}{5,819} = 1.76$
Acid-test ratio	$\frac{391 + 14,362}{5,346} = 2.76$	$\frac{3,356 + 3,374}{5,819} = 1.16$
Current cash debt coverage	$\frac{4,628}{5,346} = .87$	$\frac{5,328}{5,819} = .92$

Both of these companies have strong liquidity positions. While Hoechst's current and acid-test ratios are higher than Merck's, this is driven by Hoechst's high level of receivables. The companies are quite similar with respect to current cash debt coverage.

- (b) Most of the items reported as provisions could be recognized as liabilities for U.S. companies. The one exception is self-insurance loss provisions. Recording liabilities for self-insurance is not permitted under U.S. GAAP.

Note to Instructors: The IASB has issued a new standard on provisions (IAS 37). The standard is effective after 1999.

- (c) Establishing provisions for self-insurance results in increased liabilities and a reduction in income in the period of the provision. In Hoechst's case, self insurance overstates total liabilities by DM631 with the current liabilities overstated by DM473 (631 X .75).

This affects comparisons of liquidity measures. For example, Hoechst's current ratio after adjusting for the self-insurance provision would be:

$$\frac{20,528}{(5,346 - 473)} = 4.21$$

Thus, Hoechst's liquidity would actually look stronger under U.S. GAAP.

PROFESSIONAL SIMULATION

Journal Entries

- | | | | |
|-----|---|----------------|--------------------------|
| (a) | Magazine Subscriptions Collected in Advance | 400,000 | |
| | Magazine Subscriptions Revenue | | 400,000 |
| | (To record subscriptions earned during 2003) | | |
| | Book balance of liability account at December 31, 2003 | | \$2,300,000 |
| | Adjusted balance (\$600,000 + \$500,000 + \$800,000) | | <u>1,900,000</u> |
| | Credit to revenue account | | <u>\$ 400,000</u> |
| | | | |
| (b) | No entry should be made to accrue for an expense, because the absence of insurance coverage does not mean that an asset has been impaired or a liability has been incurred as of the balance sheet date. The company may, however, appropriate retained earnings for self-insurance as long as actual costs or losses are not charged to the appropriation of retained earnings and no part of appropriation is transferred to income. Appropriation of retained earnings and/or disclosure in the notes to the financial statements are not required, but are recommended. | | |
| | | | |
| (c) | Estimated Loss from Pending Lawsuit | 300,000 | |
| | Estimated Liability from Pending Lawsuit | | 300,000 |
| | (To record estimated minimum damages on breach-of-contract litigation) | | |

PROFESSIONAL SIMULATION (Continued)

Explanation

If a liability is scheduled to mature within one year after the date of an enterprise's balance sheet or within an operating cycle that is longer than one year, then the liability is classified as current (unless the liability will be retired using a noncurrent asset or a long-term debt). Current liabilities will be liquidated (retired, discharged, paid) by the use of a resource properly classified as a current asset or by the creation of another current liability. Obligations are classified as noncurrent liabilities when they mature beyond one year or the operating cycle (whichever is longer) or if they are to be retired, discharged, or paid by using noncurrent assets.

Generally all three of these liabilities (accounts payable, notes payable, bonds payable) would be classified as current liabilities on the company's balance sheet prepared as of December 31, 2003.

However, the bonds payable, and possibly the notes payable, could be classified as noncurrent liabilities if the company intends to refinance the obligations on a long-term basis and the company's intent to refinance the current obligations on a long-term basis can be demonstrated by: (1) issuance of long-term obligation or equity securities after the balance sheet date but before issuance of the financial statements and before the maturity date of the debt; or (2) by entering into a financing agreement before the balance sheet is issued and before the maturity date of the debt. The financing agreement should outline the terms of refinancing the current obligations on a long-term basis. Alternatively, the bonds and notes could be classified as noncurrent if they are to be retired, discharged, or paid using noncurrent assets.

CHAPTER 14

Long-Term Liabilities

ASSIGNMENT CLASSIFICATION TABLE

Topics	Questions	Brief Exercises	Exercises	Problems	Cases
1. Long-term liability; classification; definitions.	1, 10, 14, 20		1, 2	10, 11	1, 2, 3
2. Issuance of bonds; types of bonds.	2, 3, 4, 9, 10, 11	1, 2, 3, 4, 5, 6, 7	3, 4, 5, 6, 7, 8, 9, 10, 11	1, 2, 3, 4, 5, 6, 7, 10	1, 3, 6
3. Premium and discount; amortization schedules.	5, 6, 7, 8, 11	3, 4, 6, 7, 8, 10	4, 5, 6, 7, 8, 9, 10, 11	1, 2, 3, 4, 5, 6, 7, 10, 11	1, 2, 3, 4
4. Retirement and refunding of debt.	12, 13	11	12, 13, 14, 15	4, 5, 6, 7, 10	3, 4, 5
5. Imputation of interest on notes.	14, 15, 16, 17, 18	12, 13, 14, 15	16, 17, 18	8, 9	
6. Disclosures of long-term obligations.	19, 20, 21, 22	9	19	10	1, 3, 5
*7. Troubled debt restructuring.	23, 24, 25, 26, 27, 28, 29	16	20, 21, 22, 23, 24, 25, 26	13, 14, 15	
*8. Impairments.	24, 26		27, 28	12	

*This material is discussed in the Appendix to the Chapter.

ASSIGNMENT CHARACTERISTICS TABLE

Item	Description	Level of Difficulty	Time (minutes)
E14-1	Classification of liabilities.	Simple	15-20
E14-2	Classification.	Simple	15-20
E14-3	Entries for bond transactions.	Simple	15-20
E14-4	Entries for bond transactions—straight-line.	Simple	15-20
E14-5	Entries for bond transactions—effective interest.	Simple	15-20
E14-6	Amortization schedule—straight-line.	Simple	15-20
E14-7	Amortization schedule—effective interest.	Simple	15-20
E14-8	Determine proper amounts in account balances.	Moderate	15-20
E14-9	Entries and questions for bond transactions.	Moderate	20-30
E14-10	Entries for bond transactions.	Moderate	15-20
E14-11	Information related to various bond issues.	Simple	20-30
E14-12	Entry for retirement of bond; bond issue costs.	Simple	15-20
E14-13	Entries for retirement and issuance of bonds.	Simple	15-20
E14-14	Entries for retirement and issuance of bonds.	Simple	12-16
E14-15	Entries for retirement and issuance of bonds.	Simple	10-15
E14-16	Entries for noninterest-bearing debt.	Simple	15-20
E14-17	Imputation of interest.	Simple	15-20
E14-18	Imputation of interest with right.	Moderate	15-20
E14-19	Long-term debt disclosure.	Simple	10-15
*E14-20	Settlement of debt.	Moderate	15-20
*E14-21	Term modification without gain—debtor's entries.	Moderate	20-30
*E14-22	Term modification without gain—creditor's entries.	Moderate	25-30
*E14-23	Term modification with gain—debtor's entries.	Moderate	25-30
*E14-24	Term modification with gain—creditor's entries.	Moderate	20-30
*E14-25	Debtor/creditor entries for settlement of debt.	Simple	15-20
*E14-26	Debtor/creditor entries for modification of debt.	Moderate	20-25
*E14-27	Impairments.	Moderate	15-25
*E14-28	Impairments.	Moderate	15-25
P14-1	Analysis of amortization schedule and interest entries.	Simple	15-20
P14-2	Issuance and retirement of bonds.	Moderate	25-30
P14-3	Negative amortization.	Moderate	20-30
P14-4	Issuance and retirement of bonds; income statement presentation.	Simple	15-20
P14-5	Comprehensive bond problem.	Moderate	50-65
P14-6	Issuance of bonds between interest dates, straight-line, retirement.	Moderate	20-25
P14-7	Entries for life cycle of bonds.	Moderate	20-25
P14-8	Entries for noninterest-bearing debt.	Simple	15-25
P14-9	Entries for noninterest-bearing debt; payable in installments.	Moderate	20-25
P14-10	Comprehensive problem; issuance, classification, reporting.	Moderate	20-25
P14-11	Explain effective interest method.	Moderate	40-50
*P14-12	Loan impairment entries.	Moderate	30-40

ASSIGNMENT CHARACTERISTICS TABLE (Continued)

Item	Description	Level of Difficulty	Time (minutes)
*P14-13	Debtor/creditor entries for continuation of troubled debt.	Moderate	15-25
*P14-14	Restructure of note under different circumstances.	Moderate	30-45
*P14-15	Debtor/creditor entries for continuation of troubled debt with new effective interest.	Complex	40-50
C14-1	Bond theory: balance sheet presentations, interest rate, premium.	Moderate	25-30
C14-2	Various long-term liability conceptual issues.	Moderate	10-15
C14-3	Bond theory: price, presentation, and retirement.	Moderate	15-25
C14-4	Bond theory: amortization and gain or loss recognition.	Simple	20-25
C14-5	Off-balance-sheet financing.	Moderate	20-30
C14-6	Bond issue, ethics	Moderate	23-30

ANSWERS TO QUESTIONS

1.
 - (a) Funds might be obtained through long-term debt from the issuance of bonds, and from the signing of long-term notes and mortgages.
 - (b) A bond indenture is a contractual agreement (signed by the issuer of bonds) between the bond issuer and the bondholders. The bond indenture contains covenants or restrictions for the protection of the bondholders.
 - (c) A mortgage is a document which describes the security for a loan, indicates the conditions under which the mortgage becomes effective (that is, conditions of default), and describes the rights of the mortgagee under default relative to the security. The mortgage accompanies a formal promissory note and becomes effective only upon default of the note.
2. If the entire bond matures on a single date, the bonds are referred to as **term bonds**. **Mortgage bonds** are secured by real estate. **Collateral trust bonds** are secured by the securities of other corporations. **Debenture bonds** are unsecured. The interest payments for **income bonds** depend on the existence of operating income in the issuing company. **Callable bonds** may be called and retired by the issuer prior to maturity. **Registered bonds** are issued in the name of the owner and require surrender of the certificate and issuance of a new certificate to complete the sale. A **bearer** or **coupon bond** is not recorded in the name of the owner and may be transferred from one investor to another by mere delivery. **Convertible bonds** can be converted into other securities of the issuing corporation for a specified time after issuance. **Commodity-backed bonds** (also called asset-linked bonds) are redeemable in measures of a commodity. **Deep-discount bonds** (also called zero interest bonds) are sold at a discount which provides the buyer's total interest payoff at maturity.
3.
 - (a) Yield rate—the rate of interest actually earned by the bondholders; it is synonymous with the effective and market rates.
 - (b) Nominal rate—the rate set by the party issuing the bonds and expressed as a percentage of the par value; it is synonymous with the stated rate.
 - (c) Stated rate—synonymous with nominal rate.
 - (d) Market rate—synonymous with yield rate and effective rate.
 - (e) Effective rate—synonymous with market rate and yield rate.
4.
 - (a) Maturity value—the face value of the bonds; the amount which is payable upon maturity.
 - (b) Face value—synonymous with par value and maturity value.
 - (c) Market value—the amount realizable upon sale.
 - (d) Par value—synonymous with maturity and face value.
5. A discount on bonds payable results when investors demand a rate of interest higher than the rate stated on the bonds. The investors are not satisfied with the nominal interest rate because they can earn a greater rate on alternative investments of equal risk. They refuse to pay par for the bond and cannot change the nominal rate. However, by lowering the amount paid for the bonds, investors can alter the effective rate of interest.

A premium on bonds payable results from the opposite conditions. That is, when investors are satisfied with a rate of interest lower than the rate stated on the bonds, they are willing to pay more than the face value of the bonds in order to acquire them, thus reducing their effective rate of interest below the stated rate.
6. Discount (premium) on bonds payable should be reported in the balance sheet as a direct deduction from (addition to) the face amount of the bond. Both are liability valuation accounts.

Questions Chapter 14 (Continued)

7. Bond discount and bond premium may be amortized on a straight-line basis or on an effective interest basis. The profession recommends the effective interest method but permits the straight-line method when the results obtained are not materially different from the effective interest method. The straight-line method results in an even or average allocation of the total interest over the life of the notes or bonds. The effective interest method results in an increasing or decreasing amount of interest each period. This is because interest is based on the carrying amount of the bond issuance at the beginning of each period. The straight-line method results in a constant dollar amount of interest and an increasing or decreasing rate of interest over the life of the bonds. The effective interest method results in an increasing or decreasing dollar amount of interest and a constant rate of interest over the life of the bonds.
8. The annual interest expense will decrease each period throughout the life of the bonds. Under the effective interest method the interest expense each period is equal to the effective or yield interest rate times the book value of the bonds at the beginning of each interest period. When bonds are sold at a premium, their book value declines to face value over their life; therefore, the interest expense declines also.
9. Bond issuance costs according to **APB Opinion No. 21** should be debited to a deferred charge account for Unamortized Bond Issue Costs and amortized over the life of the issue, separately from but in a manner similar to that used for discount on bonds. The FASB in **SFAC No. 3** takes the position that debt issue costs can be treated as either an expense of the period in which the bonds are issued or a reduction of the related debt liability.
10. Treasury bonds should be shown on the balance sheet as a deduction from the bonds payable issued in order to arrive at the net figure representing bonds payable outstanding. Treasury bonds should be carried at par.
11. The call feature of a bond issue grants the issuer the privilege of purchasing, after a certain date at a stated price, outstanding bonds for the purpose of reducing indebtedness or taking advantage of lower interest rates. The call feature does not affect the amortization of bond discount or premium; because early redemption is not a certainty, life to maturity date should be used for amortization purposes.
12. It is sometimes desirable to reduce bond indebtedness in order to take advantage of lower prevailing interest rates. Also the company may not want to make a very large cash outlay all at once when the bonds mature.

Bond indebtedness may be reduced by either issuing bonds callable after a certain date and then calling some or all of them, or by purchasing bonds on the open market and then retiring them.

When a portion of bonds outstanding is going to be retired, it is necessary for the accountant to make sure any corresponding discount or premium is properly amortized. Gains or losses from these transactions must be shown in the income statement as extraordinary items.

13. Gains or losses from extinguishment of debt should be aggregated and reported in income.

For extinguishment of debt transactions disclosure is required of the following items:

1. A description of the transactions, including the sources of any funds used to extinguish debt if it is practicable to identify the sources.
 2. The income tax effect in the period of extinguishment.
 3. The per share amount of the aggregate gain or loss net of related tax effect.
14. The entire arrangement must be evaluated and an appropriate interest rate imputed. This is done by (1) determining the fair value of the property, goods, or services exchanged or (2) determining the market value of the note, whichever is more clearly determinable.

Questions Chapter 14 (Continued)

15. If a note is issued for cash, the present value is assumed to be the cash proceeds. If a note is issued for noncash consideration, the present value of the note should be measured by the fair value of the property, goods, or services or by an amount that reasonably approximates the market value of the note (whichever is more clearly determinable).
16. When a debt instrument is exchanged in a bargained transaction entered into at arm's-length, the stated interest rate is presumed to be fair unless: (1) no interest rate is stated, or (2) the stated interest rate is unreasonable, or (3) the stated face amount of the debt instrument is materially different from the current sales price for the same or similar items or from the current market value of the debt instrument.
17. Imputed interest is the interest factor (a rate or amount) assumed or assigned by the accountant which is different from the stated interest factor. It is necessary to impute an interest rate when the stated interest rate is presumed to be unfair. The imputed interest rate is used to establish the present value of the debt instrument by discounting, at that imputed rate, all future payments on the debt instrument. In imputing interest, the objective is to approximate the rate which would have resulted if an independent borrower and an independent lender had negotiated a similar transaction under comparable terms and conditions with the option to pay the cash price upon purchase or to give a note for the amount of the purchase which bears the prevailing rate of interest to maturity. In order to accomplish that objective, consideration must be given to (1) the credit standing of the issuer, (2) restrictive covenants, (3) collateral, (4) payment and other items pertaining to the debt, (5) the existing prime interest rate, and (6) the prevailing rates for similar instruments of issuers with similar credit ratings.
18. A **fixed-rate mortgage** is a note that requires payment of interest by the mortgagor at a rate that does not change during the life of the note. A **variable-rate mortgage** is a note that features an interest rate that fluctuates with the market rate; the variable rate generally is adjusted periodically as specified in the terms of the note and is usually limited in the amount of each change in the rate up or down and in the total change that can be made in the rate.
19. **FASB Statement No. 47** requires disclosure at the balance sheet date of future payments for sinking fund requirements and the maturity amounts of long-term debt during each of the next five years.
20. Off-balance-sheet-financing is an attempt to borrow monies in such a way that the obligations are not recorded. Reasons for off-balance sheet financing are:
 1. Many believe removing debt enhances the quality of the balance sheet and permits credit to be obtained more readily and at less cost.
 2. Loan covenants are less likely to be violated.
 3. The asset side of the balance sheet is understated because fair value is not used for many assets. As a result, not reporting certain debt transactions offsets the nonrecognition of fair values on certain assets.
21. Forms of off-balance-sheet financing include (1) investments in non-consolidated subsidiaries for which the parent is liable for the subsidiary debt; (2) use of special purpose entities (SPEs), which are used to borrow money for special projects (resulting in take-or-pay contracts; (3) operating leases, which when structured carefully give the company the benefits of ownership without reporting the liability for the lease payments.
22. In take-or-pay contracts, the outside party agrees to make specified minimum payments even if it does not take possession of the contracted goods or services. In through-put contracts, the outside party agrees to pay specified amounts in return for processing or transportation services rendered by the debtor, which is usually the owner of a manufacturing or transportation facility.

Questions Chapter 14 (Continued)

- *23. The three possible valuation bases are: (1) aggregate cash flows, (2) present value using historical effective rate, and (3) present value using the market rate. The advantage of the aggregate cash flow basis is that this amount reports the total cash flows that the creditor will receive. It is objective and easily verifiable. The advantage of the present value approach using the historical effective rate of interest is that the time value of money is considered in the computation. In addition, the loss related only to a deterioration in credit quality is recognized. Other value changes are ignored. This approach is, therefore, consistent with historical cost because it reflects actual events that have occurred.

The advantage of the present value approach using a market rate of interest is that this approach reflects current economic events and conditions that are commensurate with the risks involved. This approach indicates what the fair value of the loan is at any point in time.

- *24. A loan is considered impaired when it is probable that the creditor will be unable to collect all amounts due (both principal and interest) according to the contractual terms of the loan. If a loan is considered impaired, the loss due to impairment should be measured as the difference between the investment in the loan and the expected future cash flows discounted at the loan's historical effective interest rate. The loss is recorded on the books of the creditor. The debtor would not be aware of the entry made by the creditor and would not make an entry until settlement or if a modification of items resulted.
- *25. A transfer of noncash assets (real estate, receivables, or other assets) or the issuance of the debtor's stock can be used to settle a debt obligation in a troubled debt restructuring. In these situations, the noncash assets or equity interest given should be accounted for at their fair market value. The debtor is required to determine the excess of the carrying amount of the payable over the fair value of the assets or equity transferred (gain). Likewise, the creditor is required to determine the excess of the receivable over the fair value of those same assets or equity interests transferred (loss). The debtor recognizes an extraordinary gain equal to the amount of the excess and the creditor normally would charge the excess (loss) against Allowance for Doubtful Accounts. In addition, the debtor recognizes a gain or loss on disposition of assets to the extent that the fair value of those assets differs from their carrying amount (book value).
- *26. (a) The creditor will grant concessions in a troubled debt situation because it appears to be the more likely way to maximize recovery of the investment.
- (b) The creditor might grant any one or a combination of the following concessions:
1. Reduce the face amount of the debt.
 2. Accept noncash assets or equity interests in lieu of cash in settlement.
 3. Reduce the stated interest rate.
 4. Extend the maturity date of the face amount of the debt.
 5. Reduce or defer any accrued interest.
- (c) A loan is impaired when there is a reduction in the likelihood of collecting the interest and principle payments as originally scheduled. An impairment should be recorded by a creditor when it is "probable" that the payment will not be collected as scheduled. Debtors do not record impairments.
- *27. When a loan is restructured, the creditor should calculate the loss due to restructuring by subtracting the present value of the restructured cash flows from the carrying value of the loan. Interest revenue is calculated at the original effect rate applied towards the new carrying value. The debtor will record a gain only if the undiscounted restructured cash flows are less than the carrying value of the loan. If a gain is recognized, subsequent payments will be all principal. There is no interest component. If the undiscounted cash flows exceed the carrying amount, no gain is recognized, and a new imputed interest rate must be calculated in order to recognize interest expense in subsequent periods.

Questions Chapter 14 (Continued)

- *28. "Accounting symmetry" between the entries recorded by the debtor and the creditor in a troubled debt restructuring means that there is a correspondence or agreement between the entries recorded by each party. Impairments are nonsymmetrical because, while the creditor records a loss, the debtor makes no entry at all. Troubled debt restructurings are nonsymmetrical because creditors calculate their loss using the discounted present value of future cash flows, while debtors calculate their gain using the undiscounted cash flows. The FASB chose to accept this nonsymmetric treatment rather than address debtor accounting because it feared that expansion of the scope of **FASB Statement No. 114** would further delay its issuance.
- *29. A transaction would be recorded as a troubled debt restructuring by only the debtor if the amount for which the liability is settled is less than its carrying amount on the debtor's books, but equal to or greater than the carrying amount on the creditor's books. In addition to the situation created by the use of discounted versus undiscounted cash flows by creditors and debtors, this situation can occur when a debtor or creditor has been substituted for one of the parties to the original transaction.

SOLUTIONS TO BRIEF EXERCISES

BRIEF EXERCISE 14-1

Present value of the principal		
\$300,000 X .37689		\$113,067
Present value of the interest payments		
\$13,500 X 12.46221		<u>168,240</u>
Issue price		<u>\$281,307</u>

BRIEF EXERCISE 14-2

(a)	Cash	200,000	
	Bonds Payable		200,000
(b)	Interest Expense	10,000	
	Cash (\$200,000 X 10% X 6/12)		10,000
(c)	Interest Expense	10,000	
	Interest Payable		10,000

BRIEF EXERCISE 14-3

(a)	Cash	196,000	
	Discount on Bonds Payable	4,000	
	Bonds Payable		200,000
(b)	Interest Expense	10,000	
	Cash (\$200,000 X 10% X 6/12)		10,000
(c)	Interest Expense	10,000	
	Interest Payable		10,000
	Interest Expense	800	
	Discount on Bonds Payable		800
	(\$4,000 X 1/5 = \$800)		

BRIEF EXERCISE 14-4

(a)	Cash	206,000	
	Bonds Payable.....		200,000
	Premium on Bonds Payable.....		6,000
(b)	Interest Expense	10,000	
	Cash ($\$200,000 \times 10\% \times 6/12$)		10,000
(c)	Interest Expense	10,000	
	Interest Payable.....		10,000
	Premium on Bonds Payable	1,200	
	Interest Expense ($\$6,000 \times 1/5 = \$1,200$)		1,200

BRIEF EXERCISE 14-5

(a)	Cash	520,000	
	Bonds Payable.....		500,000
	Interest Expense.....		20,000
	($\$500,000 \times 12\% \times 4/12 = \$20,000$)		
(b)	Interest Expense	30,000	
	Cash ($\$500,000 \times 12\% \times 6/12 = \$30,000$).....		30,000
(c)	Interest Expense	30,000	
	Interest Payable.....		30,000

BRIEF EXERCISE 14-6

(a)	Cash	372,816	
	Discount on Bonds Payable	27,184	
	Bonds Payable.....		400,000
(b)	Interest Expense	14,913	
	Cash.....		14,000
	Discount on Bonds Payable.....		913
	($\$372,816 \times 8\% \times 6/12 = \$14,913$)		
	($\$400,000 \times 7\% \times 6/12 = \$14,000$)		

BRIEF EXERCISE 14-6 (Continued)

(c)	Interest Expense	14,949	
	Interest Payable		14,000
	Discount on Bonds Payable		949
	(\$373,729 X 8% X 6/12 = \$14,949)		

BRIEF EXERCISE 14-7

(a)	Cash	429,757	
	Bonds Payable		400,000
	Premium on Bonds Payable		29,757

(b)	Interest Expense	12,893	
	Premium on Bonds Payable	1,107	
	Cash		14,000
	(\$429,757 X 6% X 6/12 = \$12,893)		
	(\$400,000 X 7% X 6/12 = \$14,000)		

(c)	Interest Expense	12,860	
	Premium on Bonds Payable	1,140	
	Interest Payable		14,000
	(\$428,650 X 6% X 6/12 = \$12,860)		

BRIEF EXERCISE 14-8

	Interest Expense	4,298	
	Premium on Bonds Payable	369	
	Interest Payable		4,667
	(\$429,757 X 6% X 2/12 = \$4,298)		
	(\$400,000 X 7% X 2/12 = \$4,667)		

BRIEF EXERCISE 14-9

Current liabilities		<u>\$80,000</u>
Bond Interest Payable		
Long-term liabilities		\$2,000,000
Bonds Payable, due January 1, 2013		<u>98,000</u>
Less: Discount on Bonds Payable		<u>\$1,902,000</u>

BRIEF EXERCISE 14-10

Interest Expense	18,000	
Unamortized Bond Issue Costs		18,000
(\$180,000 X 1/10)		

BRIEF EXERCISE 14-11

Bonds Payable	600,000	
Premium on Bonds Payable	15,000	
Unamortized Bond Issue Costs		5,250
Cash		594,000
Gain on Redemption of Bonds		15,750

BRIEF EXERCISE 14-12

(a) Cash	100,000	
Notes Payable		100,000
(b) Interest Expense	11,000	
Cash (\$100,000 X 11% = \$11,000)		11,000

BRIEF EXERCISE 14-13

(a) Cash	31,776	
Discount on Notes Payable	18,224	
Notes Payable		50,000

BRIEF EXERCISE 14-13 (Continued)

(b)	Interest Expense	3,813	
	Discount on Notes Payable		3,813
	(\$31,776 X 12%)		

BRIEF EXERCISE 14-14

(a)	Computer	39,369	
	Discount on Notes Payable.....	10,631	
	Notes Payable		50,000
(b)	Interest Expense	4,724	
	Cash		2,500
	Discount on Notes Payable		2,224
	(\$39,369 X 12% = \$4,724)		
	(\$50,000 X 5% = \$2,500)		

BRIEF EXERCISE 14-15

Cash	50,000	
Discount on Notes Payable	18,224	
Notes Payable		50,000
Unearned Revenue		18,224
[\$50,000 – (\$50,000 X .63552) = \$18,224]		

***BRIEF EXERCISE 14-16**

Toni Braxton (Debtor): No Entry

National American Bank (Creditor):

Bad Debt Expense	225,000	
Allowance for Doubtful Accounts		225,000

SOLUTIONS TO EXERCISES

EXERCISE 14-1 (15-20 minutes)

- (a) Valuation account relating to the long-term liability, bonds payable (sometimes referred to as an adjunct account). The \$3,000 would continue to be reported as long-term.
- (b) Current liability if current assets are used to satisfy the debt.
- (c) Current liability, \$200,000; long-term liability, \$800,000.
- (d) Current liability.
- (e) Probably noncurrent, although if operating cycle is greater than one year and current assets are used, this item would be classified as current.
- (f) Current liability.
- (g) Current liability unless (a) a fund for liquidation has been accumulated which is not classified as a current asset or (b) arrangements have been made for refinancing.
- (h) Current liability.
- (i) Current liability.

EXERCISE 14-2 (15-20 minutes)

- (a) Discount on Bonds Payable—Contra account to bonds payable on balance sheet.
- (b) Interest expense (credit balance)—Reclassify to interest payable on balance sheet.
- (c) Unamortized Bond Issue Costs—Classified as “Other Assets” on balance sheet.
- (d) Gain on repurchase of debt—Classify as part of other gains and losses on the income statement.
- (e) Mortgage payable—Classify one-third as current liability and the remainder as long-term liability on balance sheet.

EXERCISE 14-2 (Continued)

- (f) **Debenture bonds—Classify as long-term liability on balance sheet.**
- (g) **Notes payable—Classify as long-term liability on balance sheet.**
- (h) **Premium on bonds payable—Classify as adjunct account to Bonds Payable on balance sheet.**
- (i) **Treasury bonds—Classify as contra account to bonds payable on balance sheet.**
- (j) **Income bonds payable—Classify as long-term liability on balance sheet.**

EXERCISE 14-3 (15-20 minutes)

1. Paul Simon Company:

(a)	1/1/01	Cash	200,000	
		Bonds Payable		200,000
(b)	7/1/01	Bond Interest Expense.....	4,500	
		(\$200,000 X 9% X 3/12)		
		Cash.....		4,500
(c)	12/31/01	Bond Interest Expense.....	4,500	
		Interest Payable.....		4,500

2. Graceland Company:

(a)	6/1/01	Cash	105,000	
		Bonds Payable		100,000
		Bond Interest Expense		5,000
		(\$100,000 X 12% X 5/12)		
(b)	7/1/01	Bond Interest Expense.....	6,000	
		Cash.....		6,000
		(\$100,000 X 12% X 6/12)		

EXERCISE 14-3 (Continued)

(c)	12/31/04	Bond Interest Expense	6,000	
		Interest Payable		6,000

Note to instructor: Some students may credit Interest Payable on 6/1/04. If they do so, the entry on 7/1/04 will have a debit to Interest Payable for \$5,000 and a debit to Bond Interest Expense for \$1,000.

EXERCISE 14-4 (15-20 minutes)

(a)	1/1/05	Cash (\$600,000 X 102%)	612,000	
		Bonds Payable		600,000
		Premium on Bonds Payable		12,000
(b)	7/1/05	Bond Interest Expense	29,700	
		Premium on Bonds Payable.....	300	
		(\$12,000 ÷ 40)		
		Cash		30,000
		(\$600,000 X 10% X 6/12)		
(c)	12/31/05	Bond Interest Expense	29,700	
		Premium on Bonds Payable.....	300	
		Interest Payable		30,000

EXERCISE 14-5 (15-20 minutes)

(a)	1/1/05	Cash (\$600,000 X 102%).....	612,000	
		Bonds Payable		600,000
		Premium on Bonds Payable.....		12,000
(b)	7/1/05	Bond Interest Expense.....	29,835	
		(\$612,000 X 9.75% X 1/2)		
		Premium on Bonds Payable.....	165	
		Cash.....		30,000
		(\$600,000 X 10% X 6/12)		

EXERCISE 14-5 (Continued)

(c)	12/31/05	Bond Interest Expense.....	29,827	
		(\$611,835 X 9.75% X 1/2)		
		Premium on Bonds Payable.....	173	
		Interest Payable.....		30,000
Carrying amount of bonds at July 1, 2005:				
		Carrying amount of bonds at January 1, 2005		\$612,000
		Amortization of bond premium		
		(\$300,000 – \$29,835)		<u>(165)</u>
		Carrying amount of bonds at July 1, 2005		<u>\$611,835</u>

EXERCISE 14-6 (15-20 minutes)

**Schedule of Discount Amortization
Straight-Line Method**

Year	Credit Interest Payable	Debit Interest Expense	Credit Bond Discount	Carrying Value of Bonds
Jan. 1, 2004				\$1,855,816.00
Dec. 31, 2004	\$200,000	\$228,836.80	\$28,836.80 *	1,884,652.80
Dec. 31, 2005	200,000	228,836.80	28,836.80	1,913,489.60
Dec. 31, 2006	200,000	228,836.80	28,836.80	1,942,326.40
Dec. 31, 2007	200,000	228,836.80	28,836.80	1,971,163.20
Dec. 31, 2008	200,000	228,836.80	28,836.80	2,000,000.00

*\$28,836.80 = (\$2,000,000 – \$1,855,816) ÷ 5.

EXERCISE 14-7 (15-20 minutes)

The effective interest or yield rate is 12%. It is determined through trial and error using Table 6-2 for the discounted value of the principal (\$1,134,860) and Table 6-4 for the discounted value of the interest (\$720,956); \$1,134,860 plus \$720,956 equals the proceeds of \$1,855,816. (A financial calculator may be used to determine the rate of 12%.)

EXERCISE 14-7 (Continued)

**Schedule of Discount Amortization
Effective Interest Method (12%)**

Year	Credit Interest Payable	Debit Interest Expense	Credit Bond Discount	Carrying Value of Bonds
(1)	(2)	(3)	(4)	
Jan. 1, 2004				\$1,855,816.00
Dec. 31, 2004	\$200,000	\$222,697.92 *	\$22,697.92	1,878,513.92
Dec. 31, 2005	200,000	225,421.67	25,421.67	1,903,935.59
Dec. 31, 2006	200,000	228,472.27	28,472.27	1,932,407.86
Dec. 31, 2007	200,000	231,888.94	31,888.94	1,964,296.80
Dec. 31, 2008	200,000	235,703.20 **	35,703.20	2,000,000.00

*\$222,697.92 = \$1,855,816 X .12.

**Rounded.

EXERCISE 14-8 (15-20 minutes)

(a) Printing and engraving costs of bonds	\$12,000
Legal fees	49,000
Commissions paid to underwriter	<u>60,000</u>
Amount to be reported as Unamortized Bond Issue Costs	<u>\$121,000</u>

The Unamortized Bond Issue Costs, \$121,000, should be reported as a deferred charge in the Other Assets section on the balance sheet.

(b) Interest paid for the period from January 1 (July 1) to June 30 (December 31), 2004; \$2,000,000 X 10% X 6/12	\$100,000
Less: Premium amortization for the period from January 1 (July 1) to June 30 (December 31), 2004 [(\$2,000,000 X 1.04) – \$2,000,000] ÷ 10 X 6/12	<u>4,000</u>
Interest expense to be recorded on July 1 (December 31), 2004	<u>\$ 96,000</u>

EXERCISE 14-8 (Continued)

(c) Carrying amount of bonds on June 30, 2004	\$562,500
Effective interest rate for the period from June 30 to October 31, 2004 (.10 X 4/12)	<u>X.033333</u>
Interest expense to be recorded on October 31, 2004	<u>\$ 18,750</u>

EXERCISE 14-9 (20-30 minutes)

(a) 1.	June 30, 2005		
	Cash	4,300,920.00	
	Bonds Payable		4,000,000.00
	Premium on Bonds Payable		300,920.00
2.	December 31, 2005		
	Bond Interest Expense	258,055.20	
	(\$4,300,920.00 X 12% X 6/12)		
	Premium on Bonds Payable.....	1,944.80	
	Cash		260,000.00
	(\$4,000,000 X 13% X 6/12)		
3.	June 30, 2006		
	Bond Interest Expense	257,938.51	
	[(\$4,300,920.00 – \$1,944.80)		
	X 12% X 6/12]		
	Premium on Bonds Payable.....	2,061.49	
	Cash		260,000.00
4.	December 31, 2006		
	Bond Interest Expense	257,814.82	
	[(\$4,300,920.00 – \$1,944.82 –		
	\$2,061.49) X 12% X 6/12]		
	Premium on Bonds Payable.....	2,185.18	
	Cash		260,000.00

EXERCISE 14-9 (Continued)

(b) Long-term Liabilities:

Bonds payable, 13% (due on June 30, 2025)	\$4,000,000.00
Premium on Bonds Payable*	<u>294,728.53</u>
Book value of bonds payable	<u>\$4,294,728.53</u>

$$*(\$4,300,920.00 - \$4,000,000) - (\$1,944.80 + \$2,061.49 + \$2,185.18) = \$294,728.53$$

(c) 1. Interest expense for the period from January 1 to June 30, 2006 from (a) 3.	\$257,938.51
Interest expense for the period from July 1 to December 31, 2006 from (a) 4.	<u>257,814.82</u>
Amount of bond interest expense reported for 2006	<u>\$515,753.33</u>

2. The amount of bond interest expense reported in 2006 will be greater than the amount that would be reported if the straight-line method of amortization were used. Under the straight-line method, the amortization of bond premium is \$15,046 ($\$300,920/20$). Bond interest expense for 2006 is the difference between the amortized premium, \$15,046, and the actual interest paid, \$520,000 ($\$4,000,000 \times 13\%$). Thus, the amount of bond interest expense is \$504,954, which is smaller than the bond interest expense under the effective interest method.

3. Total interest to be paid for the bond ($\$4,000,000 \times 13\% \times 20$)	\$10,400,000
Principal due in 2025	<u>4,000,000</u>
Total cash outlays for the bond	14,400,000
Cash received at issuance of the bond	<u>(4,300,920)</u>
Total cost of borrowing over the life of the bond	<u>\$10,099,080</u>

4. They will be the same.

EXERCISE 14-10 (15-20 minutes)

(a) January 1, 2004

Cash	537,907.37	
Premium on Bonds Payable		37,907.37
Bonds Payable		500,000.00

(b) **Schedule of Interest Expense and Bond Premium Amortization**
Effective Interest Method
12% Bonds Sold to Yield 10%

Date	Credit Cash	Debit Interest Expense	Debit Bond Premium	Carrying Value of Bonds
1/1/04	–	–	–	\$537,907.37
12/31/04	\$60,000.00	\$53,790.74	\$6,209.26	531,698.11
12/31/05	60,000.00	53,169.81	6,830.19	524,867.92
12/31/06	60,000.00	52,486.79	7,513.21	517,354.71

(c) December 31, 2004

Bond Interest Expense	53,790.74	
Premium on Bonds Payable.....	6,209.26	
Cash		60,000.00

(d) December 31, 2006

Bond Interest Expense	52,486.79	
Premium on Bonds Payable.....	7,513.21	
Cash		60,000.00

EXERCISE 14-11 (20-30 minutes)

	Unsecured Bonds	Zero Coupon Bonds	Mortgage Bonds
(1) Maturity value	\$10,000,000	\$25,000,000	\$20,000,000
(2) Number of interest periods	40	10	10
(3) Stated rate per period	3.75% ($\frac{15\%}{4}$)	0	10%
(4) Effective rate per period	3% ($\frac{12\%}{4}$)	12%	12%
(5) Payment amount per period	\$375,000 ^(a)	0	\$2,000,000 ^(b)
(6) Present value	\$11,733,639 ^(c)	\$8,049,250 ^(d)	\$17,739,840 ^(e)

^(a) \$10,000,000 X 15% X 1/4 = \$375,000

^(b) \$20,000,000 X 10% = \$2,000,000

^(c) Present value of an annuity of \$375,000 discounted at 3% per period for 40 periods (\$375,000 X 23.11477) = \$ 8,668,039
 Present value of \$10,000,000 discounted at 3% per period for 40 periods (\$10,000,000 X .30656) = 3,065,600
\$11,733,639

^(d) Present value of \$25,000,000 discounted at 12% for 10 periods (\$25,000,000 X .32197) = \$ 8,049,250

^(e) Present value of an annuity of \$2,000,000 discounted at 12% for 10 periods (\$2,000,000 X 5.65022) = \$11,300,440
 Present value of \$20,000,000 discounted at 12% for 10 years (\$20,000,000 X .32197) 6,439,400
\$17,739,840

EXERCISE 14-12 (15-20 minutes)

Reacquisition price (\$900,000 X 101%)		\$909,000
Less: Net carrying amount of bonds redeemed:		
Par value	\$900,000	
Unamortized discount	(13,500)	
Unamortized bond issue costs	<u>(7,200)</u>	<u>879,300</u>
Loss on redemption		<u>\$ 29,700</u>

Calculation of unamortized discount—

Original amount of discount:
 $\$900,000 \times 3\% = \$27,000$
 $\$27,000 / 10 = \$2,700$ amortization per year
 Amount of discount unamortized:
 $\$2,700 \times 5 = \$13,500$

Calculation of unamortized issue costs—

Original amount of costs:
 $\$24,000 \times \$900,000 / \$1,500,000 = \$14,400$
 $\$14,400 / 10 = \$1,440$ amortization per year
 Amount of costs unamortized:
 $\$1,440 \times 5 = \$7,200$

January 2, 2004

Bonds Payable	900,000	
Loss on Redemption of Bonds	29,700	
Unamortized Bond Issue Cost		7,200
Discount on Bonds Payable		13,500
Cash		909,000

EXERCISE 14-13 (15-20 minutes)

Cash	8,820,000	
Discount on Bonds Payable (.02 X \$9,000,000) ...	180,000	
Bonds Payable		9,000,000
(To record issuance of 10% bonds)		

EXERCISE 14-13 (Continued)

Bonds Payable	6,000,000	
Loss on Redemption of Bonds	270,000	
Cash (\$6,000,000 X 1.02).....		6,120,000
Discount on Bonds Payable.....		120,000
Unamortized Bond Issue Costs.....		30,000
(To record retirement of 11% bonds)		
Reacquisition price		\$6,120,000
Less: Net carrying amount of bonds redeemed:		
Par value	\$6,000,000	
Unamortized bond discount.....	(120,000)	
Unamortized bond issue costs.....	<u>(30,000)</u>	<u>5,850,000</u>
Loss on redemption		<u>\$ 270,000</u>

EXERCISE 14-14 (12-16 minutes)

(a)	June 30, 2005		
	Bonds Payable	800,000	
	Loss on Redemption of Bonds.....	40,800	
	Discount on Bonds Payable		8,800
	Cash		832,000
	Reacquisition price (\$800,000 X 104%).....		\$832,000
	Net carrying amount of bonds redeemed:		
	Par value.....	\$800,000	
	Unamortized discount.....	<u>(8,800)</u>	<u>(791,200)</u>
	(.02 X \$800,000 X 11/20)		
	Loss on redemption.....		<u>\$ 40,800</u>
	Cash (\$1,000,000 X 102%)	1,020,000	
	Premium on Bonds Payable		20,000
	Bonds Payable		1,000,000
(b)	December 31, 2005		
	Bond Interest Expense	49,500	
	Premium on Bonds Payable	500*	
	Cash		50,000**

*(1/40 X \$20,000 = \$500)

**(.05 X \$1,000,000 = \$50,000)

EXERCISE 14-15 (10-15 minutes)

Reacquisition price (\$300,000 X 104%)		\$312,000
Less: Net carrying amount of bonds redeemed:		
Par value	\$300,000	
Unamortized discount	<u>(10,000)</u>	<u>290,000</u>
Loss on redemption		<u>\$ 22,000</u>
Bonds Payable	300,000	
Loss on Redemption of Bonds.....	22,000	
Discount on Bonds Payable.....		10,000
Cash.....		312,000
(To record redemption of bonds payable)		
Cash	306,000	
Unamortized Bond Issue Costs.....	3,000	
Premium on Bonds Payable.....		9,000
Bonds Payable.....		300,000
(To record issuance of new bonds)		

EXERCISE 14-16 (15-20 minutes)

(a) 1.	January 1, 2005		
	Land	200,000.00	
	Discount on Notes Payable.....	137,012.00	
	Notes Payable		337,012.00
	(The \$200,000 capitalized land cost represents the present value of the note discounted for five years at 11%.)		
2.	Equipment.....	185,674.30	
	Discount on Notes Payable.....	64,325.70*	
	Notes Payable		250,000.00

EXERCISE 14-16 (Continued)

***Computation of the discount on notes payable:**

Maturity value		\$250,000.00
Present value of \$250,000 due in 8 years at 11%—\$250,000 X .43393	\$108,482.50	
Present value of \$15,000 payable annually for 8 years at 11% annually—\$15,000 X 5.14612	<u>77,191.80</u>	
Present value of the note		<u>(185,674.30)</u>
Discount		<u>\$ 64,325.70</u>

(b) 1. Interest Expense	22,000.00	
Discount on Notes Payable		22,000.00
(\$200,000 X .11)		
2. Interest Expense	20,424.17	
(\$185,674.30 X .11)		
Discount on Notes Payable		5,424.17
Cash (\$250,000 X .06)		15,000.00

EXERCISE 14-17 (15-20 minutes)

(a) Face value of the noninterest-bearing note	\$550,000
Discounting factor (12% for 3 periods)	<u>X .71178</u>
Amount to be recorded for the land at January 1, 2005	<u>\$391,479</u>
Carrying value of the note at January 1, 2005	\$391,479
Applicable interest rate (12%)	<u>X .12</u>
Interest expense to be reported in 2005	<u>\$ 46,977</u>

(b)	January 1, 2005	
Cash	5,000,000	
Discount on Notes Payable.....	1,584,950	
Notes Payable		5,000,000
Unearned Revenue*		1,584,950

*\$5,000,000 – (\$5,000,000 X .68301) = \$1,584,950

EXERCISE 14-17 (Continued)

Carrying value of the note at January 1, 2005	\$3,415,050**
Applicable interest rate (10%)	X <u>.10</u>
Interest expense to be reported for 2005	<u>\$ 341,505</u>

**\$5,000,000 – \$1,584,950 = \$3,415,050

EXERCISE 14-18 (15-20 minutes)

(a) Cash	400,000	
Discount on Notes Payable	115,288	
Notes Payable		400,000
Unearned Revenue		115,288
(\$400,000 – \$284,712)		
Face value	\$400,000	
Present value of 1 at 12%		
for 3 years	X <u>.71178</u>	
Present value	<u>\$284,712</u>	
(b) Interest Expense (\$284,712 X 12%)	34,165	
Discount on Notes Payable.....		34,165
Unearned Revenue (\$115,288 ÷ 3)	38,429	
Sales.....		38,429

EXERCISE 14-19 (10-15 minutes)

At December 31, 2003, disclosures would be as follows:

Maturities and sinking fund requirements on long-term debt are as follows:

2004	\$	0	
2005		3,500,000	
2006		5,500,000	(\$2,000,000 + \$3,500,000)
2007		9,500,000	(\$6,000,000 + \$3,500,000)
2008		3,500,000	

***EXERCISE 14-20 (15-20 minutes)**

(a) Transfer of property on December 31, 2004:

Larisa Nieland Company (Debtor):

Note Payable	200,000	
Interest Payable	18,000	
Accumulated Depreciation—Machine	221,000	
Machine		390,000
Gain on Disposition of Machine		21,000 ^a
Gain on Debt Restructuring		28,000 ^b

^a\$190,000 – (\$390,000 – \$221,000) = \$21,000.

^b(\$200,000 + \$18,000) – \$190,000 = \$28,000.

First State Bank (Creditor):

Machine.....	190,000	
Allowance for Doubtful Accounts.....	28,000	
Note Receivable		200,000
Interest Receivable		18,000

(b) “Gain on Machine Disposition” and the “Gain on Debt Restructuring” should be reported as an ordinary gain in the income statement in accordance with *APB Opinion No. 30* and *SFAS No. 145*.

***EXERCISE 14-20 (Continued)**

(c) **Granting of equity interest on December 31, 2004:**

Larisa Nieland Company (Debtor):

Note Payable.....	200,000	
Interest Payable	18,000	
Common Stock.....		150,000
Additional Paid-in Capital		40,000
Gain on Debt Restructuring.....		28,000

First State Bank (Creditor):

Investment (Trading)	190,000	
Allowance for Doubtful Accounts	28,000	
Note Receivable		200,000
Interest Receivable		18,000

***EXERCISE 14-21 (20-30 minutes)**

- (a) **No. The gain recorded by Bradtke is not equal to the loss recorded by Firstar Bank under the debt restructuring agreement. (You will see why this happens in the following four exercises.) In response to this “accounting unsymmetry” treatment, FASB stated that *Statement No. 114* does not address debtor accounting because the FASB was concerned that expansion of the scope of the statement would delay its issuance.**
- (b) **No. There is no gain under the modified terms because the total future cash flows after restructuring exceed the total pre-restructuring carrying amount of the note (principal):**

Total future cash flows after restructuring are:

Principal	\$1,600,000
Interest (\$1,600,000 X 10% X 3)	480,000
	<u>\$2,080,000</u>

Total pre-restructuring carrying amount of note (principal):

\$2,000,000

***EXERCISE 14-21 (Continued)**

(c) The interest payment schedule is prepared as follows:

**BRADTKE COMPANY
INTEREST PAYMENT SCHEDULE AFTER DEBT RESTRUCTURING
EFFECTIVE INTEREST RATE 1.4276%**

Date	Cash Interest (10%)	Effective Interest (1.4276%)	Reduction of Carrying Amount	Carrying Amount of Note
12/31/04				\$2,000,000
12/31/05	\$160,000 ^a	\$28,552 ^b	\$131,448 ^c	1,868,552
12/31/06	160,000	26,675	133,325	1,735,227
12/31/07	<u>160,000</u>	<u>24,773^d</u>	<u>135,227</u>	1,600,000
Total	<u>\$480,000</u>	<u>\$80,000</u>	<u>\$400,000</u>	

^a\$1,600,000 X 10% = \$160,000.

^b\$2,000,000 X 1.4276% = \$28,552.

^c\$160,000 – \$28,552 = \$131,448.

^dAdjusts \$1 due to rounding.

(d) Interest payment entry for Bradtke Company is:

December 31, 2006		
Note Payable.....	133,325	
Interest Expense	26,675	
Cash		160,000

(e) The payment entry at maturity is:

January 1, 2008		
Note Payable.....	1,600,000	
Cash		1,600,000

***EXERCISE 14-22 (25-30 minutes)**

(a) The Firststar Bank should use the historical interest rate of 12% to calculate the loss.

(b) The loss is computed as follows:

Pre-restructuring carrying amount of note			\$2,000,000
Less: Present value of restructured future cash flows:			
Present value of principal \$1,600,000			
due in 3 years at 12%	\$1,138,848 ^a		
Present value of interest \$160,000			
paid annually for 3 years at 12%	<u>384,293^b</u>		<u>1,523,141</u>
Loss on debt restructuring			<u>\$ 476,859</u>

^a\$1,600,000 X .71178 = \$1,138,848.

^b\$160,000 X 2.40183 = \$384,293.

December 31, 2004

Bad Debt Expense.....	476,859	
Allowance for Doubtful Accounts		476,859

(c) The interest receipt schedule is prepared as follows:

**FIRSTAR BANK
INTEREST RECEIPT SCHEDULE AFTER DEBT RESTRUCTURING
EFFECTIVE INTEREST RATE 12%**

Date	Cash Interest (10%)	Effective Interest (12%)	Increase in Carrying Amount	Carrying Amount of Note
12/31/04				\$1,523,141
12/31/05	\$160,000 ^a	\$182,777 ^b	\$22,777 ^c	1,545,918
12/31/06	160,000	185,510	25,510	1,571,428
12/31/07	<u>160,000</u>	<u>188,572</u>	<u>28,572</u>	1,600,000
Total	<u>\$480,000</u>	<u>\$556,859</u>	<u>\$76,859</u>	

^a\$1,600,000 X 10% = \$160,000.

^b\$1,523,141 X 12% = \$182,777.

^c\$182,777 – \$160,000 = \$22,777.

***EXERCISE 14-22 (Continued)**

(d) Interest receipt entry for Firststar Bank is:

December 31, 2006

Cash	160,000	
Allowance for Doubtful Accounts	25,510	
Interest Revenue		185,510

(e) The receipt entry at maturity is:

January 1, 2008

Cash	1,600,000	
Allowance for Doubtful Accounts	400,000	
Note Receivable		2,000,000

Note to Instructor: An entry to clear the allowance account and the note receivable account of their balance (\$400,000) would be prepared at this time.

***EXERCISE 14-23 (25-30 minutes)**

(a) Yes. Bradtke Company can record a gain under this term modification. The gain is calculated as follows:

Total future cash flows after restructuring are:

Principal	\$1,300,000	
Interest (\$1,300,000 X 10% X 3)	390,000	
		<u>\$1,690,000</u>

Total pre-restructuring carrying amount of note (principal):		\$2,000,000
--	--	-------------

Therefore, the gain = \$2,000,000 – \$1,690,000 = \$310,000.

(b) The entry to record the gain on December 31, 2001:

Note Payable	310,000	
Gain on Debt Restructuring		310,000

(c) Because the new carrying value of the note (\$2,000,000 – \$310,000 = \$1,690,000) equals the sum of the undiscounted future cash flows (\$1,300,000 principal + \$390,000 interest = \$1,690,000), the imputed interest rate is 0%. Consequently, all the future cash flows reduce the principal balance and no interest expense is recognized.

***EXERCISE 14-23 (Continued)**

(d) The interest payment schedule is prepared as follows:

BRADTKE COMPANY
INTEREST PAYMENT SCHEDULE AFTER DEBT RESTRUCTURING
EFFECTIVE INTEREST RATE 0%

Date	Cash Interest (10%)	Effective Interest (0%)	Reduction of Carrying Amount	Carrying Amount of Note
12/31/04				\$1,690,000
12/31/05	\$130,000 ^a	\$0	\$130,000	1,560,000 ^b
12/31/06	130,000	0	130,000	1,430,000
12/31/07	<u>130,000</u>	<u>0</u>	<u>130,000</u>	1,300,000
Total	<u>\$390,000</u>	<u>\$0</u>	<u>\$390,000</u>	

^a\$1,300,000 X 10% = \$130,000.

^b\$1,690,000 – \$130,000 = \$1,560,000.

(e) Cash interest payment entries for Bradtke Company are:

December 31, 2005, 2006, and 2007

Note Payable	130,000	
Cash		130,000

(f) The payment entry at maturity is:

January 1, 2008

Note Payable	1,300,000	
Cash		1,300,000

***EXERCISE 14-24 (20-30 minutes)**

(a) The loss can be calculated as follows:

Pre-restructuring carrying amount of note		\$2,000,000
Less: Present value of restructured future cash flows:		
Present value of principal \$1,300,000 due in 3 years at 12%	\$925,314 ^a	
Present value of interest \$130,000 paid annually for 3 years at 12%	<u>312,238^b</u>	<u>1,237,552</u>
Loss on debt restructuring		<u>\$ 762,448</u>

^a\$1,300,000 X .71178 = \$925,314

^b\$130,000 X 2.40183 = \$312,238

December 31, 2004

Bad Debt Expense.....	762,448	
Allowance for Doubtful Accounts.....		762,448

(b) The interest receipt schedule is prepared as follows:

**FIRSTAR BANK
INTEREST RECEIPT SCHEDULE AFTER DEBT RESTRUCTURING
EFFECTIVE INTEREST RATE 12%**

Date	Cash Interest (10%)	Effective Interest (12%)	Increase in Carrying Amount	Carrying Amount of Note
12/31/04				\$1,237,552
12/31/05	\$130,000 ^a	\$148,506 ^b	\$18,506 ^c	1,256,058
12/31/06	130,000	150,727	20,727	1,276,785
12/31/07	<u>130,000</u>	<u>153,215</u>	<u>23,215</u>	1,300,000
Total	<u>\$390,000</u>	<u>\$452,448</u>	<u>\$62,448</u>	

^a\$1,300,000 X 10% = \$130,000.

^b\$1,237,552 X 12% = \$148,506.

^c\$148,506 – \$130,000 = \$18,506.

***EXERCISE 14-24 (Continued)**

(c) Interest receipt entries for Firststar Bank are:

December 31, 2005		
Cash	130,000	
Allowance for Doubtful Accounts	18,506	
Interest Revenue		148,506
December 31, 2006		
Cash	130,000	
Allowance for Doubtful Accounts	20,727	
Interest Revenue		150,727
December 31, 2007		
Cash	130,000	
Allowance for Doubtful Accounts	23,215	
Interest Revenue		153,215

(d) The receipt entry at maturity is:

January 1, 2008		
Cash	1,300,000	
Allowance for Doubtful Accounts	700,000	
Note Receivable		2,000,000

Note to Instructor: An entry to clear the allowance account and the note receivable account of their balance (\$700,000) would be prepared at this time.

***EXERCISE 14-25 (15-20 minutes)**

(a) Langrova Co.'s entry:

Notes Payable	199,800	
Property		80,000
Gain on Property Disposition		40,000
(Ordinary) (\$120,000 – \$80,000)		
Gain on Restructuring		79,800*

***\$199,800 – \$120,000**

***EXERCISE 14-25 (Continued)**

(b) Fernandez Inc. entry:

Property	120,000	
Allowance for Doubtful Accounts	79,800	
(or Bad Debt Expense).....		
Notes Receivable		199,800

***EXERCISE 14-26 (20-25 minutes)**

Because the carrying amount of the debt, \$225,000 exceeds the total future cash flows \$220,000 [$\$200,000 + (\$10,000 \times 2)$], a gain and a loss are recognized and no interest is recorded by the debtor.

(a) Graf Corp.'s entries:

2004 Notes Payable	5,000	
Gain on Restructuring.....		5,000
(Extraordinary)		
2005 Notes Payable	10,000	
Cash (5% X \$200,000).....		10,000
2006 Notes Payable	210,000	
Cash		210,000
[\$200,000 + (5% X \$200,000)]		

(b) First Trust's entry on December 31, 2004:

Bad Debt Expense.....	48,661	
Allowance for Doubtful Accounts.....		48,661
Pre-restructure carrying amount		\$225,000
Present value of restructured cash flows:		
Present value of \$200,000 due in 2 years at 12%, interest payable annually (Table 6-2); ($200,000 \times .79719$)	\$159,438	
Present value of \$10,000 interest payable annually for 2 years at 12% (Table 6-4); ($\$10,000 \times 1.69005$)	16,901	176,339
Creditor's loss on restructure		<u><u>\$(48,661)</u></u>

***EXERCISE 14-26 (Continued)**

<u>Date</u>	<u>Cash Interest</u>	<u>Effective Interest</u>	<u>Increase in Carrying Amount</u>	<u>Carrying Amount of Note</u>
12/31/04				\$176,339
12/31/05	\$10,000 ^a	\$21,161 ^b	\$11,161 ^c	187,500
12/31/06	10,000	22,500	12,500	200,000

^a\$10,000 = \$200,000 X .05

^b\$21,161 = \$176,339 X 12%

^c\$11,161 = \$21,161 – \$10,000

December 31, 2005

Cash	10,000	
Allowance for Doubtful Accounts	11,161	
Interest Revenue		21,161

December 31, 2006

Cash	10,000	
Allowance for Doubtful Accounts	12,500	
Interest Revenue		22,500
 Cash	 200,000	
Allowance for Doubtful Accounts	25,000	
Notes Receivable		225,000

Note to Instructor: An entry to clear the allowance account and the note receivable account of their balance (\$25,000) would be prepared at this time.

***EXERCISE 14-27 (15-25 minutes)**

(a) Journal entry to record issuance of loan by Paris Bank:

December 31, 2003

Note Receivable.....	100,000	
Discount on Note Receivable		37,908
Cash		62,092

\$100,000 X Present value of 1 for 5 periods at 10%

\$100,000 X .62092 = \$62,092

***EXERCISE 14-27 (Continued)**

(b)

**Note Amortization Schedule
(Before Impairment)**

Date	Cash Received (0%)	Interest Revenue (10%)	Discount Amortized	Carrying Amount of Note
12/31/03				\$62,092
12/31/04	\$0	\$6,209	\$6,209	68,301
12/31/05	0	6,830	6,830	75,131

Computation of the impairment loss:

Carrying amount of investment (12/31/05)	\$75,131
Less: Present value of \$75,000 due in 3 years at 10% (\$75,000 X .75132)	<u>56,349</u>
Loss due to impairment	<u>\$18,782</u>

The entry to record the loss by Paris Bank is as follows:

Bad Debt Expense.....	18,782	
Allowance for Doubtful Accounts.....		18,782

(c) Iva Majoli Company, the debtor, makes no entry because it still legally owes \$100,000.

***EXERCISE 14-28 (15-25 minutes)**

(a) Cash received by Conchita Martinez Company on December 31, 2002:

Present value of principal (\$1,000,000 X .56743)	\$567,430
Present value of interest (\$100,000 X 3.60478)	<u>360,478</u>
Cash received	<u>\$927,908</u>

***EXERCISE 14-28 (Continued)**

(b)

**Note Amortization Schedule
(Before Impairment)**

<u>Date</u>	<u>Cash Received (10%)</u>	<u>Interest Revenue (12%)</u>	<u>Discount Amortized</u>	<u>Carrying Amount of Note</u>
12/31/02				\$927,908
12/31/03	\$100,000	\$111,349	\$11,349	939,257
12/31/04	100,000	112,711	12,711	951,968

(c) **Loss due to impairment:**

Carrying amount of loan (12/31/04)	\$951,968
Less: Present value of \$600,000 due in 3 years ($\$600,000 \times .71178$)	427,068
Present value of \$100,000 payable annually for 3 years ($\$100,000 \times$ 2.40183)	<u>240,183</u>
Loss due to impairment	<u>667,251</u> <u>\$284,717</u>

TIME AND PURPOSE OF PROBLEMS

Problem 14-1 (Time 15-20 minutes)

Purpose—to provide the student with the opportunity to interpret a bond amortization schedule. This problem requires both an understanding of the function of such a schedule and the relevance of each of the individual numbers. The student is to prepare journal entries to reflect the information given in the bond amortization schedule.

Problem 14-2 (Time 25-30 minutes)

Purpose—to provide the student with an understanding of how to make the journal entry to record the issuance of bonds. In addition, a portion of the bonds are retired and therefore a bond amortization schedule has to be prepared.

Problem 14-3 (Time 20-30 minutes)

Purpose—to provide the student with an understanding of how interest rates can be used to deceive a customer. The problem is challenging because for the first year of this transaction, negative amortization results.

Problem 14-4 (Time 15-20 minutes)

Purpose—to provide the student with an understanding of the relevant journal entries which are necessitated when there is a bond issuance and bond retirement. This problem also provides an opportunity for the student to learn the income statement treatment of the loss from retirement and the footnote disclosure required.

Problem 14-5 (Time 50-65 minutes)

Purpose—to provide the student with an understanding of the relevant journal entries which are necessitated for a bond issuance. This problem involves two independent bond issuances with the assumption that one is sold at a discount and the other at a premium, both utilizing the effective interest method. This comprehensive problem requires preparing journal entries for the issuance of bonds, related interest payments and amortization (with the construction of amortization tables where applicable), and the retirement of part of the bonds.

Problem 14-6 (Time 20-25 minutes)

Purpose—to provide the student with an understanding of the relevant journal entries which are necessitated when there is a bond issuance and bond retirement. This problem requires preparing journal entries, assuming the straight-line method, for the issuance of bonds, related interest payments and amortization, and the retirement of part of the bonds.

Problem 14-7 (Time 20-25 minutes)

Purpose—to provide the student with a series of transactions from bond issuance, payment of bond interest, accrual of bond interest, amortization of bond discount, and bond retirement. Journal entries are required for each of these transactions.

Problem 14-8 (Time 15-25 minutes)

Purpose—to provide the student with an opportunity to become familiar with the application of **APB Opinion No. 21**, involving the exchange of notes for cash or property, goods, or services. This problem requires the preparation of the necessary journal entries concerning the exchange of a noninterest-bearing long-term note for a computer, and the necessary adjusting entries relative to depreciation and amortization. The student should construct the relevant Schedule of Note Discount Amortization to support the respective entries.

Time and Purpose of Problems (Continued)

Problem 14-9 (Time 20-25 minutes)

Purpose—to provide the student with an opportunity to become familiar with the application of **APB Opinion No. 21**, involving the exchange of a note, which is payable in equal installments, for machinery. This problem requires the preparation of the necessary journal entries concerning the exchange and the annual payments and interest. A Schedule of Note Discount Amortization should be constructed to support the respective entries.

Problem 14-10 (Time 20-25 minutes)

Purpose—to provide the student with an understanding of a number of areas related to bonds. Specifically, the classification of bonds, determination of cash received with bond issue costs and accrued interest, and disclosure requirements of **FASB No. 47**.

Problem 14-11 (Time 40-50 minutes)

Purpose—to provide the student with an opportunity to explain what the effective interest method is, why it is preferable, and how it is computed. As one part of the problem, an amortization schedule must be prepared.

***Problem 14-12** (Time 30-40 minutes)

Purpose—to provide the student with a loan impairment situation that requires entries by both the debtor and the creditor and an analysis of the loss on impairment.

***Problem 14-13** (Time 15-25 minutes)

Purpose—to provide the student with a troubled debt situation that requires computation of the creditor's loss on restructure, entries to recognize the loss, and discussion of GAAP relating to this situation.

***Problem 14-14** (Time 30-45 minutes)

Purpose—to provide the student with four independent and different restructured debt situations where losses or gains must be computed and journal entries recorded on the books of the creditor.

***Problem 14-15** (Time 40-50 minutes)

Purpose—to provide the student with a complex troubled debt situation that requires two amortization schedules, computation of loss on restructure, and entries at different times on both the creditor's and debtor's books.

SOLUTIONS TO PROBLEMS

PROBLEM 14-1

- (a) The bonds were sold at a discount of \$5,651. Evidence of the discount is the January 1, 1997 book value of \$94,349, which is less than the maturity value of \$100,000 in 2006.
- (b) The interest allocation and bond discount amortization are based upon the effective interest method; this is evident from the increasing interest charge. Under the straight-line method the amount of interest would have been \$11,565.10 [$\$11,000 + (\$5,651 \div 10)$] for each year of the life of the bonds.
- (c) The stated rate is 11% ($\$11,000 \div \$100,000$). The effective rate is 12% ($\$11,322 \div \$94,349$).

(d)

January 1, 1997		
Cash	94,349	
Discount on Bonds Payable	5,651	
Bonds Payable		100,000

(e)

December 31, 1997		
Bond Interest Expense	11,322	
Discount on Bonds Payable		322
Interest Payable		11,000

(f)

January 1, 2004 (Interest Payment)		
Interest Payable.....	11,000	
Cash		11,000

December 31, 2004		
Bond Interest Expense	11,712	
Discount on Bonds Payable		712
Interest Payable		11,000

PROBLEM 14-2

(a)	Present value of the principal \$1,500,000 X .38554 (PV _{10, 10%})	\$ 578,310
	Present value of the interest payments \$157,500* X 6.14457 (PVOA _{10, 10%})	967,770
	Present value (selling price of the bonds)	\$1,546,080

*\$1,500,000 X 10.5% = \$157,500

Cash	1,496,080	
Unamortized Bond Issue Costs	50,000	
Bonds Payable		1,500,000
Premium Bonds Payable.....		46,080

(b)	Date	Cash Price	Interest Expense	Premium Amortization	Carrying Amount of Bonds
	1/1/02				\$1,546,080
	1/1/03	\$157,500	\$154,608	\$2,892	1,543,188
	1/1/04	157,500	154,319	3,181	1,540,007
	1/1/05	157,500	154,001	3,499	1,536,508
	1/1/06	157,500	153,651	3,849	1,532,659

(c)	Carrying amount as of 1/1/05	\$1,536,508
	Less: Amortization of bond premium (3,849 ÷ 2)	1,925
	Carrying amount as of 7/1/05	\$1,534,583
	Reacquisition price	\$800,000
	Carrying amount as of 7/1/05 (1,534,583 ÷ 2)	(767,292)
	Loss	\$32,708

PROBLEM 14-2 (Continued)

Entry for accrued interest

Interest Expense	38,413	
Premium on Bonds Payable	962	
(\$3,849 X 1/2 X 1/2)		
Cash		39,375
(\$157,500 X 1/2 X 1/2)		

Entry for reacquisition

Bonds Payable	750,000	
Premium on Bonds Payable	17,292*	
Loss on Redemption of Bonds	32,708	
Cash		800,000

***Premium as of 7/1/02 to be written off**
(\$1,534,582 – \$1,500,000,000) X 1/2 = \$17,292

The loss is reported as an ordinary loss under *SFAS No. 145*.

PROBLEM 14-3

(a)

Date	Cash Paid	Interest Expense	Amortization	Carrying Amount of Note
1/1/04				\$24,000
4/1/04	\$300	\$480	\$180	24,180
7/1/04	300	484	184	24,364
10/1/05	300	487	187	24,551
1/1/05	300	491	191	24,742

(b) At this point, we see that the customer owes \$24,742, or \$742 more than at the beginning of the year.

(c) To earn 8% over the next two years the quarterly payments must be \$3,378 computed as follows:

$$\$24,742 \div 7.32548 (\text{PVOA}_{8, 2\%}) = \$3,378$$

(d)

Date	Cash	Interest Expense	Amortization	Carrying Amount of Note
1/1/05				\$24,742
4/1/05	\$3,378	\$495	\$2,883	21,859
7/1/05	3,378	437	2,941	18,918
10/1/05	3,378	378	3,000	15,918
1/1/06	3,378	318	3,060	12,858
4/1/06	3,378	257	3,121	9,737
7/1/06	3,378	195	3,183	6,554
10/1/06	3,378	131	3,247	3,307
1/1/07	3,378	71	3,307	0

(e) The new sales gimmick may bring people into the showroom the first time but will drive them away once they learn of the amount of their year 2 and year 3 payments. Many will not have budgeted for these increases, and will be in a bind because they owe more on their car than it's worth. One should question the ethics of a dealer using this tactic.

PROBLEM 14-4

(a) Entry to record the issuance of the 11% bonds on December 18, 2004:

Cash	6,120,000	
Bonds Payable		6,000,000
Premium on Bonds Payable		120,000

Entry to record the retirement of the 9% bonds on January 2, 2005:

Bonds Payable	5,000,000	
Loss on Redemption of Bonds	300,000	
Discount on Bonds Payable		100,000
(\$250,000 X 10/25)		
Cash (\$5,000,000 x 104%)		5,200,000
[The loss represents the excess of the cash paid (\$5,200,000) over the carrying amount of the bonds (\$4,900,000).]		

(b) The loss is reported as an ordinary loss under *SFAS No. 145*.

Note 1. Loss on Bond Redemption

The loss represents a loss of \$300,000 from the redemption and retirement of \$5,000,000 of the Company's outstanding bond issue due in 2015. The funds used to purchase the mortgage bonds represent a portion of the proceeds from the sale of \$6,000,000 of 11% debenture bonds issued December 18, 2004 and due in 2024.

PROBLEM 14-5

(This solution assumes that no reversing entries have been made.)

1. Danny Ferry Co.

3/1/04	Cash	236,045	
	Discount on Bonds Payable.....	13,955	
	Bonds Payable		250,000
	Maturity value of bonds payable		\$250,000
	Present value of \$250,000 due in 7 periods at 6% (\$250,000 X .66506)	\$166,265	
	Present value of interest payable semiannually (\$12,500 X 5.58238)	<u>69,780</u>	
	Proceeds from sale of bonds		<u>(236,045)</u>
	Discount on bonds payable		<u>\$ 13,955</u>
9/1/04	Interest Expense	14,163	
	Discount on Bonds Payable.....		1,663
	Cash.....		12,500
12/31/04	Interest Expense	9,508	
	Discount on Bonds Payable..... (\$1,762 X 4/6)		1,175
	Interest Payable (\$12,500 X 4/6)		8,333
3/1/05	Interest Expense	4,754	
	Interest Payable	8,333	
	Discount on Bonds Payable..... (\$1,762 X 2/6)		587
	Cash.....		12,500
9/1/05	Interest Expense	14,368	
	Discount on Bonds Payable.....		1,868
	Cash.....		12,500
12/31/05	Interest Expense	9,653	
	Discount on Bonds Payable..... (\$1,980 X 4/6)		1,320
	Interest Payable		8,333

PROBLEM 14-5 (Continued)

**Schedule of Bond Discount Amortization
Effective Interest Method
10% Bonds Sold to Yield 12%**

Date	Credit Cash	Debit Interest Expense	Credit Bond Discount	Carrying Value of Bonds
3/1/04				\$236,045
9/1/04	\$12,500	\$14,163	\$1,663	237,708
3/1/05	12,500	14,262	1,762	239,470
9/1/05	12,500	14,368	1,868	241,338
3/1/06	12,500	14,480	1,980	243,318
9/1/06	12,500	14,599	2,099	245,417
3/1/07	12,500	14,725	2,225	247,642
9/1/07	12,500	14,858	2,358	250,000

2. Dougherty Co.

6/1/04	Cash	638,780	
	Premium on Bonds Payable		38,780
	Bonds Payable		600,000

Maturity value of bonds payable		\$600,000
Present value of \$600,000 due in 8 periods at 5% (\$600,000 X .67684)	\$406,104	
Present value of interest payable semiannually (\$36,000 X 6.46321)	<u>232,676</u>	
Proceeds from sale of bonds		<u>638,780</u>
Premium on bonds payable		<u>\$ 38,780</u>

12/1/04	Interest Expense	31,939	
	Premium on Bonds Payable	4,061	
	Cash (\$600,000 X .12 X 6/12)		36,000

12/31/04	Interest Expense (\$31,736 X 1/6)	5,289	
	Premium on Bonds Payable	711	
	(\$4,264 X 1/6)		
	Interest Payable (\$36,000 X 1/6)		6,000

PROBLEM 14-5 (Continued)

6/1/05	Interest Expense (\$31,736 X 5/6)	26,447	
	Interest Payable	6,000	
	Premium on Bonds Payable	3,553	
	(\$4,264 X 5/6)		
	Cash		36,000
10/1/05	Interest Expense	4,203	
	(\$31,523 X .2* X 4/6)		
	Premium on Bonds Payable	597	
	(\$4,477 X .2 X 4/6)		
	Cash		4,800
	*\$120,000 ÷ \$600,000 = .2		
10/1/05	Bonds Payable	120,000	
	Premium on Bonds Payable	5,494	
	Gain on Redemption of Bonds		4,294
	Cash		121,200
	Reacquisition price		
	(\$126,000 – \$120,000 X 12% X 4/12)		\$121,200
	Net carrying amount of bonds redeemed:		
	Par value	\$120,000	
	Unamortized premium		
	[.2 X (\$38,780 – \$4,061 – \$4,264) – \$597]	5,494	(125,494)
	Gain on redemption		<u>\$ (4,294)</u>
12/1/05	Interest Expense (\$31,523 X .8*)	25,218	
	Premium on Bonds Payable	3,582	
	(\$4,477 X .8)		
	Cash (\$36,000 X .8)		28,800
	*(\$600,000 – \$120,000) ÷ \$600,000 = .8		
12/31/05	Interest Expense	4,173	
	(\$31,299 X .8 X 1/6)		
	Premium on Bonds Payable	627	
	(\$4,701 X .8 X 1/6)		
	Interest Payable		4,800
	(\$36,000 X .8 X 1/6)		

PROBLEM 14-5 (Continued)

6/1/06	Interest Expense (\$31,299 X .8 X 5/6)	20,866	
	Interest Payable	4,800	
	Premium on Bonds Payable.....	3,134	
	(\$4,701 X .8 X 5/6)		
	Cash (\$36,000 X .8).....		28,800
12/1/06	Interest Expense (\$31,064 X .8).....	24,851	
	Premium on Bonds Payable.....	3,949	
	(\$4,936 X .8)		
	Cash (\$36,000 X .8).....		28,800

Date	Cash Credit	Debit Interest Expense	Debit Bond Premium	Carrying Value of Bonds
6/1/04				\$638,780
12/1/04	\$36,000	\$31,939	\$4,061	634,719
6/1/05	36,000	31,736	4,264	630,455
12/1/05	36,000	31,523	4,477	625,978
6/1/06	36,000	31,299	4,701	621,277
12/1/06	36,000	31,064	4,936	616,341
6/1/07	36,000	30,817	5,183	611,158
12/1/07	36,000	30,558	5,442	605,716
6/1/08	36,000	30,284*	5,716	600,000

***\$1.80 adjustment due to rounding.**

PROBLEM 14-6

May 1, 2004

Cash	770,000.00	
$(\$700,000 \times 106\%) + (\$700,000 \times 12\% \times 4/12)$		
Bonds Payable		700,000.00
Premium on Bonds Payable		42,000.00
Interest Expense $(\$700,000 \times 12\% \times 4/12)$		28,000.00

December 31, 2004

Interest Expense $(\$700,000 \times 12\%)$	84,000.00	
Interest Payable		84,000.00
 Premium on Bonds Payable	 2,896.55	
Interest Expense		2,896.55
$(\$42,000 \times 8/116^* = \$2,896.55)$		

* $(12 \times 10) - 4 = 116$

January 1, 2005

Interest Payable	84,000.00	
Cash		84,000.00

April 1, 2005

Bonds Payable	420,000.00	
Premium on Bonds Payable*	22,810.34	
Interest Expense $(\$420,000 \times .12 \times 3/12)$	12,600.00	
Cash $(\$428,400 + \$12,600)$		441,000.00
Gain on Retirement of Bonds		14,410.34
$[(\$420,000 + \$22,810.34) - \$420,000 \times 102\%]$		

* $[(\$420,000 \div \$700,000) \times \$42,000 \times 105/116 = \$22,810.34]$

Reacquisition price (including accrued interest)		
$(\$420,000 \times 102\%) + (\$420,000 \times 12\% \times 3/12)$		\$441,000.00
Net carrying value of bonds redeemed:		
Par value	\$420,000.00	
Unamortized premium		
$[\$42,000 \times (\$420,000 \div \$700,000) \times 105/116]$	22,810.34	(442,810.34)
Accrued interest $(\$420,000 \times 12\% \times 3/12)$		(12,600.00)
Gain on redemption		<u><u>\$(14,410.34)</u></u>

PROBLEM 14-6 (Continued)

December 31, 2005

Interest Expense (\$280,000 X .12).....	33,600.00	
Interest Payable.....		33,600.00
Premium on Bonds Payable.....	2,389.65	
Interest Expense		2,389.65
Amortization per year on \$280,000		
(\$42,000 X 12/116 X .40*)		\$1,737.93
Amortization on \$420,000 for 3 months		
(\$42,000 X 3/116 X .60**)		<u>651.72</u>
Total premium amortization		<u>\$2,389.65</u>

***(\$700,000 – \$420,000) ÷ \$700,000 = .4**

****\$420,000) ÷ \$700,000 = .6**

PROBLEM 14-7

(a)	4/1/04	Cash (12,000 X \$1,000 X 97%).....	11,640,000	
		Discount on Bonds Payable.....	360,000	
		Bonds Payable.....		12,000,000
(b)	10/1/04	Bond Interest Expense	672,000	
		Cash.....		660,000*
		Discount on Bonds Payable.....		12,000**
		* $\$12,000,000 \times .11 \times 6/12 =$		
		$\$660,000$		
		** $\$360,000 \div 180 \text{ months} =$		
		$\$2,000/\text{mo.}; \$2,000/\text{mo.}$		
		$\times 6 \text{ months} = \$12,000$		
(c)	12/31/04	Bond Interest Expense	336,000	
		Interest Payable.....		330,000
		$(\$660,000 \times 3/6)$		
		Discount on Bond Payable.....		6,000
		$(\$2,000 \times 3 \text{ months})$		
(d)	3/1/05	Interest Payable.....	82,500	
		Bond Interest Expense	56,000	
		Cash.....		137,500*
		Discount on Bonds Payable.....		1,000**
		*Cash paid to retiring		
		bondholders: $\$3,000,000$		
		$\times .11 \times 5/12 = \$137,500$		
		** $\$2,000/\text{mo.} \times 2 \text{ months} \times$		
		$1/4 \text{ of the bonds} = \$1,000$		

At March 1, 2005 the carrying amount of the retired bonds is:

Bonds payable	\$3,000,000
Less unamortized discount	<u>84,500*</u>
	<u>\$2,915,500</u>

* $\$2,000/\text{mo.} \times 169 \text{ months} \times 1/4 \text{ of the bonds} = \$84,500$

PROBLEM 14-7 (Continued)

The reacquisition price: 100,000 shares X \$31 = \$3,100,000.

The loss on extinguishment of the bonds is:

Reacquisition price	\$3,100,000
Less carrying amount	<u>2,915,500</u>
Loss	<u>\$ 184,500</u>

The entry to record extinguishment of the bonds is:

Bonds Payable	3,000,000	
Loss on Redemption of Bonds	184,500	
Discount on Bonds Payable		84,500
Common Stock		1,000,000
Paid-in Capital in Excess of Par		2,100,000
(or Premium on Common Stock)		

PROBLEM 14-8

(a) December 31, 2004

Computer Equipment.....	273,204.00	
Discount on Notes Payable	126,796.00	
Notes Payable		400,000.00
(Computer capitalized at the present value of the note—\$400,000 X .68301)		

(b) December 31, 2005

Depreciation Expense.....	44,640.80	
Accumulated Depreciation— Computer Equipment		44,640.80
[(\$273,204 – \$50,000) ÷ 5]		
Interest Expense.....	27,320.40	
Discount on Notes Payable.....		27,320.40

Schedule of Note Discount Amortization

Date	Debit, Interest Expense Credit, Discount on Notes Payable	Carrying Value of Note
12/31/04		\$273,204.00
12/31/05	\$27,320.40	300,524.40
12/31/06	30,052.44	330,576.84
12/31/07	33,057.68	363,634.52
12/31/08	36,365.48*	400,000.00

*2.03 adjustment due to rounding.

(c) December 31, 2006

Depreciation Expense.....	44,640.80	
Accumulated Depreciation— Computer		44,640.80
Interest Expense.....	30,052.44	
Discount on Notes Payable.....		30,052.44

PROBLEM 14-9

(a)	12/31/03	Machinery	131,120.50	
		Discount on Notes Payable	28,879.50	
		Cash.....		40,000.00
		Notes Payable.....		120,000.00
		[To record machinery at the present value of the note plus the immediate cash payment: PV of \$30,000 annuity @ 12% for 4 years (\$30,000 X 3.03735) \$ 91,120.50 Down payment <u>40,000.00</u> Capitalized value of machinery <u>\$131,120.50</u>		
(b)	12/31/04	Notes Payable	30,000.00	
		Cash.....		30,000.00
		Interest Expense.....	10,934.46	
		Discount on Notes Payable.....		10,934.46

Schedule of Note Discount Amortization

Date	Debit, Interest Expense Credit, Discount on Notes Payable	Credit Cash	Carrying Value of Note
12/31/03			\$91,120.50
12/31/04	\$10,934.46	\$30,000.00	72,054.96*
12/31/05	8,646.60	30,000.00	50,701.56
12/31/06	6,084.19	30,000.00	26,785.75
12/31/07	3,214.25**	30,000.00	—

*\$72,054.96 = \$91,120.50 + \$10,934.46 – \$30,000.00.

**\$0.04 adjustment due to rounding.

PROBLEM 14-9 (Continued)

(c)	12/31/05	Notes Payable	30,000.00	
		Cash		30,000.00
		Interest Expense	8,646.60	
		Discount on Notes Payable		8,646.60
(d)	12/31/06	Notes Payable	30,000.00	
		Cash		30,000.00
		Interest Expense	6,084.19	
		Discount on Notes Payable		6,084.19
(e)	12/31/07	Notes Payable	30,000.00	
		Cash		30,000.00
		Interest Expense	3,214.25	
		Discount on Notes Payable		3,214.25

PROBLEM 14-10

(a) **Heide Co.**

Selling price of the bonds (\$3,000,000 X 103%)	\$3,090,000
Accrued interest from January 1 to February 28, 2005 (\$3,000,000 X 9% X 2/12)	<u>45,000</u>
Total cash received from issuance of the bonds	3,135,000
Less: Bond issuance costs	<u>27,000</u>
Net amount of cash received	<u>\$3,108,000</u>

(b) **Reymont Co.**

Carrying amount of the bonds on 1/1/04	\$469,280
Effective interest rate (10%)	<u>X 0.10</u>
Interest expense to be reported for 2004	<u>\$ 46,928</u>

(c) **Czeslaw Building Co.**

Maturities and sinking fund requirements on long-term debt for the next five year are as follows:

2006	\$400,000	2009	\$200,000
2007	350,000	2010	350,000
2008	200,000		

(d) **Marie Curie Inc.**

Since three bonds reported by Marie Curie Inc. are secured either real estate, securities of other corporations, or plant the company.

PROBLEM 14-11

Dear Mathilda,

When a bond is issued at face value, the annual interest expense and the interest payout equals the face value of the bond times the interest rate stated on its face. However, if the bond is issued to yield a higher or lower interest rate than what is stated on its face, the interest expense and the actual interest payout will differ. Labeled as a discount or premium respectively, this difference in interest must be systematically associated with the interest periods which occur over the bond's life through a process called amortization.

One method of amortization is the straight-line method whereby the amount of the premium or discount is divided by the number of interest periods in the bond's life. The result is an even amount of amortization for every period.

However, a better way of matching interest expense to the period during which it is incurred is the Effective Interest Method. Assume a premium: the theory behind this method is that, as time passes, the difference between the face value of the bond and its carrying amount becomes smaller, resulting in a lower interest expense every period. (The carrying amount equals the face value of the bond plus any unamortized portion of the premium.) Because the carrying amount of the bond becomes smaller over time, the effective interest expense also does. Since the stated interest rate remains constant, the resulting difference between the actual interest payout and the interest expense recognized must be reflected when interest expense is recorded for the period.

To amortize the premium applying this method to the data provided, you must know the bond's face amount, its stated rate of interest, its effective rate of interest, and its premium.

1. Multiply the stated rate times the face amount. This is the interest payout.
2. Calculate the carrying amount by adding the premium to the bond's face amount, Now multiply this carrying amount by the effective rate which gives you the actual interest expense.

PROBLEM 14-11 (Continued)

- 3. Subtract the amount calculated in #2 above from that found in #1. This is the amount to be amortized for the period.**
- 4. Subtract the difference computed in #3 from the carrying amount. The process begins all over when you apply the effective rate to this new carrying amount for the following period.**

The schedule below illustrates this calculation. The face value (\$3,000,000) is multiplied by the stated rate of 13 percent, while the carrying amount (\$3,225,690) is multiplied by the effective rate of 12 percent. Because this bond pays interest semiannually, you must also multiply these amounts by 6/12. The result is the stated interest of \$195,000 and effective interest of \$193,541. The difference (\$1,459) is amortized, lowering the carrying amount of the bond to \$3,224,231. For the next period, this new carrying amount will be multiplied by the effective rate times 6/12 and subtracted from the constant \$195,000. Obviously this time the effective interest will be lower than it was last period, resulting in a greater amount of amortization in the next period.

Follow these steps and you should have no trouble amortizing premiums and discounts over the life of a bond.

Sincerely,

Attachment to letter

**Joan Elbert Company
Interest and Discount Amortization Schedule
13% Bond Issued to Yield 12%**

Date	Cash Paid 13%	Interest Expense 12%	Amortized Bond Premium	Bond Carrying Amount
6-30-03				\$3,225,690
12-31-03	\$195,000	\$193,541	\$1,459	3,224,231
6-30-04	195,000	193,454	1,546	3,222,685
12-31-04	195,000	193,361	1,639	3,221,046
6-30-05	195,000	193,263	1,737	3,219,309

***PROBLEM 14-12**

(a) The entries for the issuance of the note on January 1, 2004:

The present value of the note is: $\$1,200,000 \times .68058 = \$816,700$
(Rounded by \$4).

Bostan Company (Debtor):

Cash	816,700	
Discount on Note Payable	383,300	
Note Payable		1,200,000

National Organization Bank (Creditor):

Note Receivable	1,200,000	
Discount on Note Receivable		383,300
Cash		816,700

(b) The amortization schedule for this note is:

**SCHEDULE FOR INTEREST AND DISCOUNT AMORTIZATION—
EFFECTIVE INTEREST METHOD
\$1,200,000 NOTE ISSUED TO YIELD 8%**

Date	Cash Interest	Effective Interest	Discount Amortized	Carrying Amount
1/1/04				\$ 816,700
12/31/04	\$0	\$ 65,336*	\$ 65,336	882,036**
12/31/05	0	70,563	70,563	952,599
12/31/05	0	76,208	76,208	1,028,807
12/31/06	0	82,305	82,305	1,111,112
12/31/06	0	88,888	88,888	1,200,000
Total	<u>\$0</u>	<u>\$383,300</u>	<u>\$383,300</u>	

* $\$816,700 \times 8\% = \$65,336$.

** $\$816,700 + \$65,336 = \$882,036$.

PROBLEM 14-12 (Continued)

(c) The note can be considered to be impaired only when it is probable that, based on current information and events, National Organization Bank will be unable to collect all amounts due (both principal and interest) according to the contractual terms of the loan.

(d) The loss is computed as follows:

Carrying amount of loan (12/31/05)	\$952,599 ^a
Less: Present value of \$800,000 due in 3 years at 8%	<u>(635,064)^b</u>
Loss due to impairment	<u>\$317,535</u>

^aSee amortization schedule from answer (b) above.

^b\$800,000 X .79383 = \$635,064.

December 31, 2002

Bostan Company (Debtor):

No entry.

National Organization Bank (Creditor):

Bad Debt Expense	317,535	
Allowance for Doubtful Accounts.....		317,535

***PROBLEM 14-13**

(a) It is a troubled debt restructuring.

(b) 1. Hillary Inc.: No entry necessary.

	2. Bad Debt Expense	158,208*	
	Allowance for Doubtful Accounts.....		158,208

*Calculation of loss.

Pre-restructure carrying amount		\$400,000	
Present value of restructured cash flows:			
Present value of \$400,000 due in 10 years at 12%, interest payable annually (Table 6-2); (\$400,000 X .32197)		\$128,788	
Present value of \$20,000 interest payable annually for 10 years at 12% (Table 6-4); (\$20,000 X 5.65022)		<u>113,004</u>	<u>(241,792)</u>
Creditor's loss on restructure			<u>\$158,208</u>

(c) *Statement No. 114* amends *Statement No. 15* so losses are now calculated based upon the discounted present value of future cash flows; thus, this fairly approximates the economic loss to the lender. However, *Statement No. 114* did not amend debtor accounting. The debtor's gain is still calculated under *Statement No. 15* using the undiscounted cash flows. This does not fairly state the economic benefits derived by the debtor as a result of the restructuring.

*PROBLEM 14-14

(a) On the books of Sandro Corporation:

Notes payable.....	3,000,000	
Common Stock		1,000,000
Additional Paid-in Capital		1,200,000
Gain on Restructuring of Debt		800,000
Fair value of equity	\$2,200,000	
Carrying amount of debt	<u>3,000,000</u>	
Gain on restructuring of debt		<u>\$ 800,000</u>

On the books of Botticelli National Bank:

Investment in Sandro	2,200,000	
Allowance for Doubtful Accounts (or Bad Debt Expense)	800,000	
Notes Receivable.....		3,000,000

(b) On the books of Sandro:

Notes Payable	3,000,000	
Land		1,950,000
Gain on Disposition of Real Estate.....		450,000
Gain on Restructuring of Debt		600,000

Fair value of land	\$2,400,000
Book value of land	<u>1,950,000</u>
Gain on disposition of real estate	<u>\$ 450,000</u>

Note payable (carrying amount)	\$3,000,000
Fair value of land	<u>2,400,000</u>
Gain on restructuring of debt	<u>\$ 600,000</u>

***PROBLEM 14-14 (Continued)**

On the books of Botticelli National Bank:

Investment in Land	2,400,000	
Allowance for Doubtful Accounts (or Bad Debt Expense)	600,000	
Notes Receivable		3,000,000

(c) On the books of Sandro:

No entry needed because aggregate cash flows equal the carrying amount.

Aggregate cash flows—principal	<u>\$3,000,000</u>
Carrying amount	<u>\$3,000,000</u>

On the books of Botticelli National Bank:

Bad Debt Expense.....	746,040*	
Allowance for Doubtful Accounts.....		746,040

***Calculation of loss:**

Pre-restructure carrying amount	\$3,000,000
Less: Present value of restructured cash flows:	
Present value of \$3,000,000 due in 3 years at 10%, interest payable annually (Table 6-2); (\$3,000,000 X .75132)	<u>2,253,960</u>

Creditor's loss on restructure \$ (746,040)

(d) On the books of Sandro:

No entry needed because aggregate cash flows equal the carrying amount.

Aggregate cash flows	
Principal	\$2,500,000
Interest (\$2,500,000 X 10% X 2)	<u>500,000</u>
	<u>\$3,000,000</u>

Carrying amount \$3,000,000

On the books of Botticelli National Bank:

Bad Debt Expense.....	727,260*	
Allowance for Doubtful Accounts.....		727,260

***PROBLEM 14-14 (Continued)**

***Calculation of loss:**

Pre-restructure carrying amount		\$3,000,000
Present value of restructured cash flows:		
Present value of \$2,500,000 due in 3 years at 10%, interest payable annually (Table 6-2); (\$2,500,000 X .75132)	\$1,878,300	
Present value of \$250,000 interest payable annually for 3 years at 10%, (Table 6-4); (\$250,000 X 2.48685)	621,713	
Less first year payment:		
Present value of \$250,000 interest due in 1 year at 10% (Table 6-2); (\$250,000 X .90909)	<u>(227,273)</u>	<u>(2,272,740)</u>
Creditor's loss on restructure		<u>\$ (727,260)</u>

***PROBLEM 14-15**

Carrying amount of the debt at date of restructure, \$110,000 + \$11,000 = \$121,000. Total future cash flow, \$100,000 + (\$100,000 X .10 X 3) = \$130,000. Because the future cash flow exceeds the carrying amount of the debt, no gain is recognized at the date of restructure.

- (a) The effective interest rate subsequent to restructure is computed by trial and error using the assumed partial present value tables based on the present value of \$100,000 (new principal) plus \$10,000 (interest per year) for three years to equal \$121,000.

Try 2 1/2%	Try 2 3/4%
(\$100,000)(.92859) = \$ 92,859	(\$100,000)(.92184) = \$ 92,184
(\$10,000)(2.85602) = <u>28,560</u>	(\$10,000)(2.84226) = <u>28,423</u>
PV = <u>\$121,419</u>	PV = <u>\$120,607</u>
Try 2 5/8%	
(\$100,000)(.92521) = \$ 92,521	
(\$10,000)(2.84913) = <u>28,491</u>	
PV = <u>\$121,012</u>	

Therefore, the approximate effective rate is 2 5/8%.

(b) **SCHEDULE OF DEBT REDUCTION AND INTEREST EXPENSE AMORTIZATION**

Date	Cash Interest	Effective Interest	Premium Amortized	Carrying Amount
12/31/04				\$121,000
12/31/05	\$ 10,000	\$3,176*	\$ 6,824	114,176
12/31/06	10,000	2,997	7,003	107,173
12/31/07	10,000	2,827**	7,173	100,000
12/31/07	100,000		100,000	-0-

*\$3,176 = \$121,000 X 2.625%

**Adjusted \$14 due to rounding.

***PROBLEM 14-15 (Continued)**

(c) Calculation of loss:

Pre-restructure carrying amount		\$121,000
Present value of restructured cash flows:		
Present value of \$100,000 due in 3 years at 10% , interest payable annually (Table 6-2); (\$100,000 X .75132)	\$75,132	
Present value of \$10,000 interest payable annually for 3 years at 10% (Table 6-4); (\$10,000 X 2.48685)	<u>24,869</u>	<u>100,000*</u>
Creditor's loss on restructure		<u>\$ (21,000)</u>

*Although the sum of the present value amounts is \$100,001, the true present value of a 10% note discounted at 10% is face value, or \$100,000. The \$1 difference is due to rounding.

<u>Date</u>	<u>Cash Interest</u>	<u>Effective Interest</u>	<u>Change in Carrying Amortized</u>	<u>Carrying Amount of Note</u>
12/31/04				\$100,000
12/31/05	\$ 10,000 ^a	\$10,000 ^b	\$ 0	100,000 ^c
12/31/06	10,000	10,000	0	100,000
12/31/07	10,000	10,000	0	100,000
12/31/07	100,000	0	100,000	0

^a\$10,000 = \$100,000 X 10%.

^b\$10,000 = \$100,000 X 10%.

^c\$100,000 = \$100,000 – \$0.

(d) Mildred Corp. entries:

December 31, 2004

Interest Payable	11,000	
Notes Payable		11,000

December 31, 2005

Interest Expense	3,176	
Notes Payable	6,824	
Cash		10,000

***PROBLEM 14-15 (Continued)**

December 31, 2006

Interest Expense	2,997	
Notes Payable.....	7,003	
 Cash		10,000

December 31, 2004

(e) Bad Debt Expense.....	21,000	
 Allowance for Doubtful Accounts.....		21,000

December 31, 2005, 2006

Cash	10,000	
 Interest Revenue.....		10,000

TIME AND PURPOSE OF CASES

Case 14-1 (Time 25-30 minutes)

Purpose—to provide the student with some familiarity with the economic theory which relates to the accounting for a bond issue. The student is required to discuss the conceptual merits for each of the three different balance sheet presentations for the same bond issue, and the merits for utilizing the nominal rate versus the effective rate at date of issue in the computation of the carrying value of the obligations arising from a bond issue.

Case 14-2 (Time 10-15 minutes)

Purpose—to provide the student with an understanding of the various accounts which are generated in a bond issue and their proper classifications on the balance sheet. Justification must be provided for the treatment accorded these accounts in relation to the specifics of this case.

Case 14-3 (Time 15-25 minutes)

Purpose—this case includes discussions of the determination of the selling price of bonds, presentation of items related to bonds on the balance sheet and the income statement, whether discount amortization increases or decreases, and how an early retirement of bonds should be reported on the income statement.

Case 14-4 (Time 20-25 minutes)

Part I—Purpose—to provide the student with an understanding of the significance of the difference between the effective interest method of amortization and the straight-line method of amortization.

Part II—Purpose—to provide the student with some familiarity with the various methods of accounting for gains and losses from the early extinguishment of debt, and the justifications for each of the different methods.

Case 14-5 (Time 20-30 minutes)

Purpose—the student is asked to explain project financing arrangements, take-or-pay contracts, off-balance-sheet financing, and the conditions for which a contractual obligation is to be disclosed as unconditional purchase obligation. The case also requires the student to determine accounting treatment for a project financing arrangement.

Case 14-6 (Time 20-30 minutes)

Purpose—to provide the student with an opportunity to examine the ethical issues related to the issue of bonds.

SOLUTIONS TO CASES

CASE 14-1

- (a) 1. This is a common balance sheet presentation and has the advantage of being familiar to users of financial statements. The face or maturity value of \$1,000,000 is shown in an obvious manner. The total of \$1,075,230 is the objectively determined exchange price at which the bonds were issued. It represents the fair market value of the bond obligations given. Thus, this is in keeping with the generally accepted accounting practice of using exchange prices as a primary source of data.
2. This presentation indicates the dual nature of the bond obligations. There is an obligation to make periodic payments of \$65,000 and an obligation to pay the \$1,000,000 at maturity. The amounts presented on the balance sheet are the present values of each of the future obligations discounted at the initial effective rate of interest.

The proper emphasis is placed upon the accrual concept, that is, that interest accrues through the passage of time. The emphasis upon premiums and discounts is eliminated.

3. This presentation shows the total liability which is incurred in a bond issue, but it ignores the time value of money. This would be a fair presentation of the bond obligations only if the effective interest rate were zero.
- (b) When an entity issues interest-bearing bonds, it normally accepts two types of obligations: (1) to pay interest at regular intervals and (2) to pay the principal at maturity. The investors who purchase Branagh Company bonds expect to receive \$65,000 each January 1 and July 1 through January 1, 2025 plus \$1,000,000 principal on January 1, 2025. Since this (\$65,000) is more than the 12% per annum (\$60,000 semiannually) that the investors would be willing to accept on an investment of \$1,000,000 in these bonds, they are willing to bid up the price—to pay a premium for them. The amount that the investors should be willing to pay for these future cash flows depends upon the interest rate that they are willing to accept on their investment(s) in this security.

The amount that the investors are willing to pay (and the issuer is willing to accept), \$1,075,230, is the present value of the future cash flows discounted at the rate of interest that they will accept.

Another way of viewing this is that the \$1,075,230 is the amount which, if invested at an annual interest rate of 12% compounded semiannually, would allow withdrawals of \$65,000 every six months from July 1, 2005 through January 1, 2025 and \$1,000,000 on January 1, 2025.

Even when bonds are issued at their maturity value, the price paid coincides with the maturity value because the coupon rate is equal to the effective rate. If the bonds had been issued at their maturity value, the \$1,000,000 would be the present value of future interest and principal payments discounted at an annual rate of 13% compounded semiannually.

Here the effective rate of interest is less than the coupon rate, so the price of the bonds is greater than the maturity value. If the effective rate of interest was greater than the coupon rate, the bonds would sell for less than the maturity value.

- (c) 1. The use of the coupon rate for discounting bond obligations would give the face value of the bond at January 1, 2005 and at any interest-payment due thereafter. Although the coupon rate is readily available while the effective rate must be computed, the coupon rate may be set arbitrarily at the discretion of management so that there would be little or no support for accepting it as the appropriate discount rate.

CASE 14-1 (Continued)

2. The effective interest rate at January 1, 2005 is the market rate to Branagh Company for long-term borrowing. This rate gives a discounted value for the bond obligations, which is the amount that could be invested at January 1, 2005 at the market rate of interest. This investment would provide the sums needed to pay the recurring interest obligation plus the principal at maturity. Thus, the effective interest rate is objectively determined and verifiable.

The market or yield rate of interest at the date of issue should be used throughout the life of the bond because it reflects the interest obligation which the issuer accepted at the time of issue. The resulting value at the date of issue was the current value at that time and is similar to historical cost. Also, this yield rate is objectively determined in an exchange transaction.

The continued use of the issue-date yield rate results in a failure to reflect whether the burden is too high or too low in terms of the changes which may have taken place in the interest rate.

- (d) Using a current yield rate produces a current value, that is, the amount which could currently be invested to produce the desired payments. When the current yield rate is lower than the rate at the issue date (or than at the previous valuation date), the liabilities for principal and interest would increase. When the current yield is higher than the rate at the issue date (or at the previous valuation date), the liabilities would decrease. Thus, holding gains and losses could be determined. If the debt is held until maturity, the total of the interest expense and the holding gains and losses under this method would equal the total interest expense using the yield rate at issue date.

CASE 14-2

1. Use of the asset requires a depreciation charge in each year of use. This in turn requires carrying the equipment as an asset. The company has contracted to purchase the equipment and, thus, has a real liability which affects financial condition and must be shown.
2. The discount on bonds payable represents the excess of the par (face) value of bonds over their market value at the date of issue. The discount is not an asset but rather a valuation account which when deducted from the par value of the bonds at the date of sale, represents the market value. Discount on bonds payable is not an asset because it does not provide any future economic benefit. The discount represents the market's adjustment in the interest or yield element.
3. The obligation of a company is to its bondholders, not to the trustee. Until the bondholders have received payment, the company still has a liability.

(Note to instructor: The student may have difficulty with this statement because this type of situation was not discussed in the chapter. It therefore provides an opportunity to emphasize that payment to an agent or trustee does not constitute payment of the liability for bond interest. When the trustee dispenses the funds to bondholders, the liability should be reduced. A separate Bond Interest Fund account is established at the time payment is made to the trustee.)

4. Treasury bonds are not an asset. A company cannot owe or own itself. Thus, these bonds are different from investments in bonds of other companies. Treasury bonds should be reported as a deduction from bonds payable.

CASE 14-3

- (a) 1. The selling price of the bonds would be the present value of all of the expected net future cash outflows discounted at the effective annual interest rate (yield) of 11 percent. The present value is the sum of the present value of its maturity amount (face value) plus the present value of the series of future semiannual interest payments.

CASE 14-3 (Continued)

2. Immediately after the bond issue is sold, the current asset, cash, would be increased by the proceeds from the sale of the bond issue. A noncurrent liability, bonds payable, would be presented in the balance sheet at the face value of the bonds less the discount. The bond issue costs would be classified as a “noncurrent asset, deferred charge” under generally accepted accounting principles; however, there is theoretical justification for classifying the bond issue costs as either an expense or a reduction of the related debt liability.
- (b) The following items related to the bond issue would be included in Norris’ 2005 income statement:
1. Interest expense would be included for ten months (March 1, 2005, to December 31, 2005) at an effective interest rate (yield) of 11 percent. This is composed of the nominal interest of 9 percent adjusted for the amortization of the related bond discount. Bond discount should be amortized using the interest method over the period the bonds will be outstanding, that is, the period from the date of sale (March 1, 2005) to the maturity date (March 1, 2010).
 2. Interest expense (or bond issue expense) would be included for ten months of amortization of bond issue costs (March 1, 2005 to December 31, 2005). Bond issue costs should be amortized over the period the bonds will be outstanding, that is, the period from the date of sale (March 1, 2005) to the maturity date (March 1, 2010). However, there is theoretical justification for classifying the total bond issue costs as an expense.
- (c) The amount of bond discount amortization would be lower in the second year of the life of the bond issue. The interest method of amortization uses a uniform interest rate based upon a changing carrying value which results in increasing amortization each year when there is a bond discount.
- (d) The retirement of the bonds would result in a loss from extinguishment of debt that should be included in the determination of net income and classified as an ordinary loss.

CASE 14-4

Part I.

- (a) The effective interest method of amortization of bond discount or premium applies a constant interest rate to the carrying value of debt. The straight-line method applies a constant dollar amount over the life of the debt resulting in a changing effective interest rate incurred based on the carrying value of the debt. Either method, however, computes the total premium or discount to be amortized as the difference between the par value of the debt and the proceeds from the issuance.
- (b) Before the interest method of amortization can be used, the effective yield or interest rate of the bond must be computed. The effective yield rate is the interest rate that will discount the two components of the debt instrument to the amount received at issuance. The two components in the value of a bond are the present value of the principal amount due at the end of the bond term and the present value of the annuity represented by the periodic interest payments during the life of the bond. Interest expense using the interest method is based upon the effective yield or interest rate multiplied by the carrying value of the bond (par value adjusted for unamortized premium or discount). The amount of amortization is the difference between recognized interest expense and the interest actually paid (par value multiplied by nominal rate). When a premium is being amortized, the dollar amount of the periodic amortization will increase over the life of the instrument. This is due to the decreasing carrying value of the bond instrument multiplied by the constant effective interest rate, which is subtracted from the amount of cash interest paid. In the case of a discount, the dollar amount of the periodic amortization will increase over the life of the bond. This is due to the increasing carrying value of the bond instrument multiplied by the constant effective interest rate from which is subtracted the amount of cash interest paid.

CASE 14-4 (Continued)

The varying amounts of amortization occur because of the changing carrying value of the bond over the life of the instrument. In contrast, the straight-line method of amortization yields a constant dollar amount of amortization based upon the life of the instrument regardless of effective yield rates demanded in the marketplace.

Part II.

- (a) 1. **Gain or loss to be amortized over the remaining life of old debt.** The basic argument supporting this method is that if refunding is done to obtain debt at a lower cash outlay (interest cost), then the gain or loss is truly a cost of obtaining the reduction in cash outlay. As such, the new rate of interest alone does not reflect the cost of the new debt, but a portion of the gain or loss on the extinguishment of the old instrument must be matched with the nominal interest to reflect the true cost of obtaining the new debt instrument. This argument states that this matching must continue for the unexpired life of the old debt in order to reflect the true nature of the transaction and cost of obtaining the new debt instrument.
2. **Gain or loss to be amortized over the life of the new debt instrument.** This argument states that the gain or loss from early extinguishment of debt actually affects the cost of obtaining a new debt instrument. However, this method asserts that the effect should be matched with the interest expense of the new debt for the entire life of the new debt instrument. This argument is based on the assumption that the debt was refunded to take advantage of new lower interest rates or to avoid projected high interest rates in the future and that any gain or loss on early extinguishment should be reflected as an element of this decision and total interest cost over the life of the new instrument should be stated to reflect this decision.
3. **Gain or loss recognized in the period of extinguishment.** Proponents of this method state that the early extinguishment of debt to be refunded actually does not differ from other types of extinguishment of debt where the consensus is that any gain or loss from the transaction should be recognized in full in current net earnings. The early extinguishment of the debt is prompted for the same reason that other debt instruments are extinguished, namely, that the value of the debt instrument has changed in light of current financial circumstances and early extinguishment of the debt would produce the most favorable results. Also, it is argued that any gain or loss on the extinguishment is directly related to market interest fluctuations related to prior periods. If the true market interest rate had been known at the time of issuance, there would be no gain or loss at the time of extinguishment. Also, even if market interest rates were not known but the carrying value of the bond was periodically adjusted to market, any gain or loss would be reflected at the interim dates and not in a future period. The call premium paid on extinguishment and any unamortized premium or discount are actually adjustments to the actual effective interest rate over the outstanding life of the bond. As such, any gain or loss on the early extinguishment of debt is related to prior-period valuation differences and should be recognized immediately.
- (b) The immediate recognition principle is the only acceptable method of reflecting gains or losses on the early extinguishment of debt, and these amounts, if material, must be reflected as ordinary gains and losses.

CASE 14-5

- (a) Such financing arrangements arise when (1) two or more entities form another entity to construct an operating plant that will be used by both parties; (2) the new entity borrows funds to construct the project and repays the debt from the proceeds received from the project; and (3) payment of the debt is guaranteed by the companies that formed the new entity.

CASE 14-5 (Continued)

- (b) In some cases, project financing arrangements become more formalized through the use of take-or-pay contracts or similar types of contracts. In a simple take-or-pay contract, a purchaser of goods signs an agreement with the seller to pay specified amounts periodically in return for products or services. The purchaser must make specified minimum payments even if delivery of the contracted products or services is not taken.
- (c) Pitt should not record the plant as its asset. The plant is to be constructed and operated by ACC. Although Pitt agrees to purchase all of the cans produced by ACC, Pitt does not have the property right to the plant, nor the right to use the plant.
- (d) Accounting for purchase commitments is unsettled and controversial. Some argue that these contracts should be reported as assets and liabilities at the time the contract is signed; others believe that our present recognition at the delivery date is most appropriate. **FASB Concepts Statement No. 6** states that

“a purchase commitment involves both an item that might be recorded as an asset and an item that might be recorded as a liability. That is, it involves both a right to receive assets and an obligation to pay . . . If both the right to receive assets and the obligation to pay were recorded at the time of the purchase commitment, the nature of the loss and the valuation account that records it when the price falls would be clearly seen.”

Although the discussion in **Concepts Statement No. 6** does not exclude the possibility of recording assets and liabilities for purchase commitments, it contains no conclusions or implications about whether they should be recorded.

According to current practice, Pitt does not record an asset relating to the future purchase commitment. However, if the dollar amount involved is material, the details of the contract should be disclosed in a footnote to the balance sheet. In addition, if the contracted price is in excess of the purchase market price and it is expected that losses will occur when the purchase is effected, losses should be recognized in the accounts in the period during which such declines in prices take place.

- (e) Off-balance-sheet financing is an attempt to borrow monies in such a way that the obligations are not recorded in a company's balance sheet. The reasons for off-balance-sheet financing are manifold. First, many believe that removing debt or otherwise keeping it from the balance sheet enhances the quality of the balance sheet and permits credit to be obtained more readily and at less cost. Second, loan covenants often impose a limitation on the amount of debt a company may have. As a result, off-balance-sheet financing is used because these types of commitments might not be considered in computing the debt limitation. Third, it is argued by some that the asset side of the balance sheet is severely understated because of the use of certain accounting methods (like LIFO and accelerated depreciation methods). As an offset to these lower values, some believe that part of the debt does not have to be reported.

CASE 14-6

- (a) The stakeholders in the Thebeau case are:
 - Roland Carlson, president, founder, and majority stockholder.
 - Jana Kingston, minority stockholder.
 - Other minority stockholders.
 - Existing creditors (debt holders).
 - Future bondholders.
 - Employees, suppliers, and customers.

CASE 14-6 (Continued)

(b) The ethical issues:

The desires of the majority stockholder (Roland Carlson) versus the desires of the minority stockholders (Jana Kingston and others).

Doing what is right for the company and others versus doing what is best for oneself.

Questions:

Is what Roland wants to do legal? Is it unethical? Is Roland's action brash and irresponsible? Who may benefit/suffer if Roland arranges a high-risk bond issue? Who may benefit/suffer if Jana Kingston gains control of Thebeau?

(c) The rationale provided by the student will be more important than the specific position because this is a borderline case with no *right* answer.

FINANCIAL REPORTING PROBLEM

(a) According to the Long-Term Debt note,

“Maturities of long-term debt for the next five years are: 2002, \$37 million; 2003, \$331 million; 2004, \$385 million; 2005, \$37 million; and 2006, \$39 million.

(b) (1) Working capital = Current assets less current liabilities.

$$\$1,787,000,000 = \$6,296,000,000 - \$4,509,000,000$$

(2) Acid-test ratio = $\frac{\text{Cash + net receivables}}{\text{Current liabilities}}$

$$.69 \text{ times} = \frac{\$616,000,000 + \$2,482,000,000}{\$4,509,000,000}$$

(3) Current ratio = $\frac{\text{Current assets}}{\text{Current liabilities}}$

$$1.4 \text{ times} = \frac{\$6,296,000,000}{\$4,509,000,000}$$

3M has a fairly strong liquidity position. The current ration exceeds 1. The acid test ration is below 1, possibly due to a slowing economy.

The other ratio analysis below corroborates 3M’s good financial position in 2001.

Receivables turnover = $\frac{\text{Net sales}}{\text{Average receivables}}$

$$= \frac{\$16,079}{\frac{\$2,482 + \$2,891}{2}}$$

$$= 5.99 \text{ times}$$

FINANCIAL REPORTING PROBLEM (Continued)

$$\begin{aligned}\text{Inventory turnover} &= \frac{\text{Cost of goods sold}}{\text{Average inventory}} \\ &= \frac{\$8,749}{\frac{\$2,091 + \$2,312}{2}} \\ &= 3.97 \text{ times}\end{aligned}$$

$$\begin{aligned}\text{Current cash debt coverage ratio} &= \frac{\text{Net cash provided by operating activities}}{\text{Average current liabilities}} \\ &= \frac{\$3,078}{\frac{\$4,509 + \$4,754}{2}} \\ &= .66 \text{ times}\end{aligned}$$

$$\begin{aligned}\text{Cash debt coverage ratio} &= \frac{\text{Net cash provided by operating activities}}{\text{Average total liabilities}} \\ &= \frac{\$3,078}{\frac{\$8,520 + \$7,991}{2}} \\ &= .37 \text{ times}\end{aligned}$$

$$\text{Debt to total assets} = \frac{\$2,893}{\$14,606} = .20$$

$$\begin{aligned}\text{Time interest earned} &= \frac{\text{Income before taxes and interest charges}}{\text{Interest charges}} \\ &= \frac{\$2,186 + \$124}{\$124} \\ &= 18.63 \text{ times}\end{aligned}$$

FINANCIAL STATEMENT ANALYSIS CASE 1

COMMONWEALTH EDISON CO.

- (a) Due to the markdown from 99.803 to 99.25, Commonwealth Edison would record a slightly larger discount and, of course, receive and record less cash. Amortization of the larger discount will result in a larger interest expense charge in each year the bonds are outstanding. As a result of the additional \$5.50 markdown, the effective interest rate increased from 9.3% to 9.45%.
- (b) In the same *Wall Street Journal* article that following explanation was provided for Commonwealth Edison's bond markdown and slow sale:

“Commonwealth had the misfortune to begin its giant offering only hours before investor sentiment was soured by the report last Thursday of a record increase in the nation's money supply. The monetary surge, plus a recent rebound in industrial productivity reported Friday, halted the market rally triggered in early May by signs of an economic slowdown and a peaking of interest rates.”

Other economic events that can and do affect the price of securities issued are:

1. A change in the Federal Reserve's lending rate.
2. A change in the bank prime rate.
3. A flood of other similar securities issues.
4. A good or poor earnings report for the issuer.
5. A change in the issuer's credit rating.
6. The issuance of a favorable or unfavorable broker's or other financial analysis.

FINANCIAL STATEMENT ANALYSIS CASE 1 (Continued)

Of course, noneconomic, political, or other world events can also affect the day-to-day sale of securities.

The “recent rebound in industrial productivity” mentioned in the article would normally not be a depressant on a securities issue; but because the financial community was anticipating, even hoping for, a recession to “cool off the economy” and, thus, lower the then existing high interest rates, the rebound represented a delay in the recession and the lowering of interest rates.

FINANCIAL STATEMENT ANALYSIS CASE 2

PEPSICO

- (a) Answers will vary. The company may have decided to refinance in order to free cash needed for some other purpose, to reduce current cash needs, or to leave a credit line available for quick access.
- (b) The investor probably enjoys a higher interest rate than that obtained from other types of bonds. Also, a smaller initial investment is required.

Bonds Payable	780,000,000	
Cash		780,000,000

This bond would be listed in short-term liabilities in the year prior to the year of payment.

(c)

Cash	298,050,000	
Discount on Bonds Payable.....	950,000	
Bonds Payable		295,000,000
Premium on Bonds Payable		4,000,000

OR the two bonds could be shown separately:

Cash	204,000,000	
Bonds Payable		200,000,000
Premium on Bonds Payable		4,000,000

and

Cash	94,050,000	
Discount on Bonds Payable.....	950,000	
Bonds Payable		95,000,000

Possible reasons for the difference could be that the stated interest rate on the Australian bond was very attractive to Australian investors, therefore it sold at a premium; and the interest rate on the Italian bond was unattractive to Italian investors, so it sold at a discount.

FINANCIAL STATEMENT ANALYSIS CASE 2

- (d) **Answers will vary. One advantage would be that it is a bond whose principal may not need to be paid in the foreseeable future.**

Current Portion of Long-Term Debt.....	100,000,000	
Long-term Debt.....		100,000,000

No journal entry is necessary to record the change in interest rate.

COMPARATIVE ANALYSIS CASE

(a) Debt to total assets ratio:

Coca-Cola	$\$11,051/\$22,417 = 49\%$
PepsiCo	$\$13,047/\$21,695 = 60\%$

Times interest earned ratio:

Coca-Cola	$(\$3,979 + \$1,691 + \$289)/\$289 = 20.58$ times
PepsiCo	$(\$2,662 + \$1,367 + \$219)/\$219 = 19.40$ times

The debt to total assets ratios of 49% for Coca-Cola and 60% for PepsiCo show both companies to be highly leveraged, PepsiCo more so than Coca-Cola. The times interest earned ratios show that interest expense is quite adequately covered by the firms' net income; Coca-Cola's coverage is more than good; it is superb, especially considering the debt to total assets ratio of 49%.

	Carrying Value	Fair Value
Coca-Cola	\$1,219	approximately the same
PepsiCo	3,001	3,266

The fair value will vary from the historical cost carrying value due to changes in interest rates.

- (c)**
1. Lower interest rates may be available in foreign countries.
 2. Credit may be more readily available in foreign countries.

Using foreign debt to finance operations is subject to the risk of foreign currency exchange rate fluctuations. Both PepsiCo and Coca-Cola enter into interest rate and foreign currency swaps to effectively change the interest rate and currency of specific debt issuances. These swaps are generally entered into concurrently with the issuance of the debt they are intended to modify.

RESEARCH CASES

CASE 1

Answer will vary based on company selected.

CASE 2

- (a) According to the article, a tender for the bonds is related to the issuance of the common stock. That is, the proceeds to purchase the bonds would come from a related IPO or asset sale proceeds. In a sense the amount of bonds purchased would be determined by the amount of money TYCO would receive in the IPO or asset sale. TYCO's McGee said the end result of any revised plan would also be a reduction of Tyco's total debt by \$11 billion, but . . . "There are a lot of things you can do other than using IPO or sale proceeds to repurchase debt securities." This is because the market for TYCO stock is depressed and there is uncertainty as to the value of its assets.

With an open market purchase, TYCO would go into the open market and buy the bonds back. That could be a better deal because Tyco's bonds recently have been trading at a sharp discount to Treasury securities of similar maturity, due to investor concerns about the company's liquidity. Thus, they could reduce their debt levels at a lower cost.

- (b) Assuming that the bonds would be purchased at a gain, the gain would be reported in income as an ordinary gain (according to *SFAS No. 145*.)
- (c) Under current GAAP, TYCO would not mark its bonds *payable* down to their current market value. Such accounting would result in a gain, which in the absence of an arm's length transaction would raise questions about the reliability of the measurement of the gain. If this were a bond investment, the investment would be carried at its fair value on the balance sheet with any gains or losses recorded in income, if classified as a trading security. If classified as available for sale, the gains or losses would be recorded in other comprehensive

RESEARCH CASE 2 (Continued)

income. The principle involved in both cases is the relevance of fair values for reporting financial instruments. If reliable fair measures of a company's debt are available, an argument can be made to carry the obligation at fair value. Some are concerned with that treatment because a struggling company, like TYCO would record a gain, increasing income, at a time when its prospects are quite dim.

Note to instructors: This will be a challenging question for most students but it raises an important issue being debated by accounting standard-setters in trying to implement fair value accounting for financial instruments. Currently there is asymmetric treatment of bonds when held as investments versus as a liability. Note that fair value accounting would be employed for debt that is being hedged in a fair value hedge (see Appendix 17A).

PROFESSIONAL SIMULATION

Journal Entries

April 1, 2002

Cash	5,307,228.36	
Premium on Bond's Payable		307,228.36
Bonds Payable		5,000,000.00

April 1, 2003

Interest Payable.....	550,000.00	
Cash		550,000.00

Note: Entry made on March 31, 2003:

Interest Expense	530,722.84	
Premium on Bond's Payable	19,277.16	
Interest Payable		550,000.00

Resources

	A	B	C	D	E	F	G	H	I	J	K	L
1												
2	Schedule of Bond Premium Amortization											
3	Effective Interest Method-Annual Interest Payments											
4	10-Year, 11% Bonds Sold to Yield 10%											
5												
6												
7												
8												
9												
10	Date		Cash Paid		Interest Expense		Premium Ammortized		Carrying Amount of Bonds			
11	April 1, 2002								\$5,307,228.36			
12	April 1, 2003		\$550,000		\$530,722.84		\$19,277.16		5,287,951.19			
13	April 1, 2004		550,000		528,795.12		21,204.88		5,266,746.31			
14	April 1, 2005		550,000		526,674.63		23,325.37		5,243,420.94			
15	April 1, 2006		550,000		524,342.09		25,657.91		5,217,763.03			
16	April 1, 2007		550,000		521,776.30		28,223.70		5,189,539.34			
17	April 1, 2008		550,000		518,953.93		31,046.07		5,158,493.27			
18	April 1, 2009		550,000		515,849.33		34,150.67		5,124,342.60			
19	April 1, 2010		550,000		512,434.26		37,565.74		5,086,776.86			
20	April 1, 2011		550,000		508,677.69		41,322.31		5,045,454.54			
21	April 1, 2012		550,000		504,545.45		45,454.55		5,000,000.00			
22			\$5,500,000		\$5,192,771.64		\$307,228.36					
23												
24												
25												
26												
27												
28												
29												

PROFESSIONAL SIMULATION (Continued)

Financial Statements

Balzac Inc.
Balance Sheet as of March 31, 2003

Long-term liabilities

11% bonds payable (Note A)	\$5,000,000	
Premium on Bonds Payable	<u>287,951</u>	\$5,287,951
Asset retirement obligation, warehouse site		35,000
Notes payable (Note B)		<u>1,100,000</u>
Total long-term liabilities		<u>\$6,422,951</u>

Note A—Bonds The 11% bonds call for annual interest payments on each April 1. The bonds mature on April 1, 2012.

Note B—Notes Payable The current liabilities include current maturities of several notes payable. The long-term notes payable mature as follows.

<u>Due Date</u>	<u>Amount Due</u>
April 1, 2004 – March 31, 2005	\$600,000
April 1, 2005 – March 31, 2006	500,000

CHAPTER 15

Stockholders' Equity

ASSIGNMENT CLASSIFICATION TABLE

Topics	Questions	Brief Exercises	Exercises	Problems	Cases
1. Stockholders' rights; corporate form.	1, 2, 3, 4,				1
2. Stockholders' equity.	5, 6, 16, 17, 18	3	7, 10	1, 2, 3	
3. Issuance of shares.	7, 10	1, 2, 6	1, 2, 3, 4, 6, 9	1, 3, 4, 6	
4. Noncash stock transactions; lump sum sales.	8, 9	4, 5	3, 4, 5, 6	1, 4, 6	2
5. Treasury stock transactions, cost method.	11, 12	7, 8	3, 4, 6, 7, 9, 10	1, 3, 5, 6	7
6. Preferred stock.	3, 13, 14, 15	9	8	1, 3	
7. Stockholders' equity accounts; classifications; terminology.			11	9, 11, 12	3
8. Dividend policy.	19, 20, 21, 22, 25, 26, 27	10	12, 15	7, 10	
9. Cash and stock dividends; stock splits; property dividends; liquidating dividends.	23, 24, 25	10, 11, 12, 13, 14	13, 14, 15, 18, 19	8, 10, 11	4, 5, 6
10. Restrictions of retained earnings.	28, 29		16, 17	9, 10	
11. Analysis			19, 20		
*12. Dividend preferences and book value.	30	15	21, 22, 23, 24		

*This material is covered in an Appendix to the chapter.

ASSIGNMENT CHARACTERISTICS TABLE

Item	Description	Level of Difficulty	Time (minutes)
E15-1	Recording the issuances of common stock.	Simple	15-20
E15-2	Recording the issuance of common and preferred stock.	Simple	15-20
E15-3	Stock issued for land.	Simple	10-15
E15-4	Lump sum sale of stock with bonds.	Moderate	20-25
E15-5	Lump sum sales of stock with preferred stock.	Simple	10-15
E15-6	Stock issuances and repurchase.	Moderate	25-30
E15-7	Effect of treasury stock transactions on financials.	Moderate	15-20
E15-8	Preferred stock entries and dividends.	Moderate	15-20
E15-9	Correcting entries for equity transactions.	Moderate	15-20
E15-10	Analysis of equity data and equity section preparation.	Moderate	20-25
E15-11	Equity items on the balance sheet.	Simple	15-20
E15-12	Cash dividend and liquidating dividend.	Simple	10-15
E15-13	Stock split and stock dividend.	Simple	10-15
E15-14	Entries for stock dividends and stock splits.	Simple	10-12
E15-15	Dividend entries.	Simple	10-15
E15-16	Computation of retained earnings.	Simple	05-10
E15-17	Stockholders' equity section.	Moderate	20-25
E15-18	Dividends and stockholders' equity section.	Moderate	30-35
E15-19	Comparison of alternative forms of financing.	Moderate	20-25
E15-20	Trading on the equity analysis.	Moderate	15-20
*E15-21	Preferred dividends.	Simple	10-15
*E15-22	Preferred dividends.	Moderate	15-20
*E15-23	Preferred stock dividends.	Complex	15-20
*E15-24	Computation of book value per share.	Moderate	10-20
P15-1	Equity transactions and statement preparation.	Moderate	50-60
P15-2	Treasury stock transactions and presentation.	Simple	25-35
P15-3	Equity transactions and statement preparation.	Moderate	25-30
P15-4	Stock transactions—assessment and lump sum.	Moderate	20-30
P15-5	Treasury stock—cost method.	Moderate	30-40
P15-6	Treasury stock—cost method—equity section preparation.	Moderate	30-40
P15-7	Cash dividend entries.	Moderate	15-20
P15-8	Dividends and splits.	Moderate	20-25
P15-9	Stockholders' equity section of balance sheet.	Simple	20-25
P15-10	Stock dividends and stock splits.	Moderate	35-45
P15-11	Stock and cash dividends.	Simple	25-35
P15-12	Analysis and classification of equity transactions.	Complex	35-45
C15-1	Preemptive rights and dilution of ownership.	Moderate	10-20
C15-2	Issuance of stock for land.	Moderate	15-20
C15-3	Conceptual issues—equity.	Moderate	25-30
C15-4	Stock dividends and splits.	Simple	25-30
C15-5	Stock dividends.	Simple	15-20
C15-6	Stock dividend, cash dividend, and treasury stock.	Moderate	20-25
C15-7	Ethical issues related to treasury stock	Moderate	10-15

*This material is presented in an appendix to the chapter.

ANSWERS TO QUESTIONS

1. The basic rights of each stockholder (unless otherwise restricted) are to share proportionately: (1) in profits, (2) in management (the right to vote for directors), (3) in corporate assets upon liquidation, and (4) in any new issues of stock of the same class (preemptive right).
2. The preemptive right protects existing share holders from dilution of the ownership share in the event the corporation issues new shares.
3. Preferred stock commonly has preference to dividends in the form of a fixed dividend rate and a preference over common stock to remaining corporate assets in the event of liquidation. Preferred stock usually does not give the holder the right to share in the management of the company. Common stock is the residual security possessing the greater risk of loss and the greater potential for gain; it is guaranteed neither dividends nor assets upon dissolution but it generally controls the management.
4. The distinction between paid-in capital and retained earnings is important for both legal and economic points of view. Legally, dividends can be declared out of retained earnings in all states, but in many states dividends cannot be declared out of paid-in capital. Economically, management, stockholders, and others look to earnings for the continued existence and growth of the corporation.
5. Authorized capital stock—the total number of shares authorized by the state of incorporation for issuance.
Unissued capital stock—the total number of shares authorized but not issued.
Issued capital stock—the total number of shares issued (distributed to stockholders).
Outstanding capital stock—the total number of shares issued and still in the hands of stockholders (issued less treasury stock).
Treasury stock—shares of stock issued and repurchased by the issuing corporation but not retired.
6. Par value is an arbitrary, fixed per share amount assigned to a stock by the incorporators of the company and recognized by the state of incorporation as the amount that must be paid in for each share if the stock is to be fully paid when issued. It establishes the maximum responsibility of a stockholder in the event of insolvency or other involuntary dissolution.
7. The issuance for cash of no-par value common stock at a price in excess of the stated value of the common stock is accounted for as follows:
 1. Cash is debited for the proceeds from the issuance of the common stock.
 2. Common Stock is credited for the stated value of the common stock.
 3. Additional Paid-in Capital is credited for the excess of the proceeds from the issuance of the common stock over its stated value.
8. The proportional method is used to allocate the lump sum received on sales of two or more classes of securities when the fair market value or other sound basis for determining relative value is available for each class of security. In instances where the fair market value of all classes of securities is not determinable in a lump sum sale, the incremental method must be used. The value of the securities is used for those classes that are known and the remainder is allocated to the class for which the value is not known.
9. The general rule to be applied when stock is issued for services or property other than cash is that the property or services be recorded at either their fair market value or the fair market value of the stock issued, whichever is more clearly determinable. If neither is readily determinable, the value to be assigned is generally established by the board of directors.

Questions Chapter 15 (Continued)

10. The direct costs of issuing stock, such as underwriting costs, accounting and legal fees, printing costs, and taxes, should be reported as a reduction of the amounts paid in. Issue costs are therefore debited to Additional Paid-in Capital because they are unrelated to corporate operations.
11. The major reasons for purchasing its own shares are: (1) to provide tax-efficient distributions of excess cash to shareholders, (2) to increase earnings per share and return on equity, (3) to provide stock for employee stock compensation contracts, (4) to thwart takeover attempts or reduce the number of stockholders, (5) to make a market in the company's stock, and (6) to contract the operations of the business.
12.
 - (a) Treasury stock should not be classified as an asset since a corporation cannot own itself.
 - (b) The "gain" or "loss" on sale of treasury stock should not be treated as additions to or deductions from income. If treasury stock is carried in the accounts at cost, these so-called gains or losses arise when the treasury stock is sold. These "gains" or "losses" should be considered as additions to or reductions of paid-in capital. In some instances, the "loss" should be charged to Retained Earnings. "Gains" or "losses" arising from treasury stock transactions are not included as a component of net income since dealings in treasury stock represent capital transactions.
 - (c) Dividends on treasury stock should never be included as income, but should be credited directly to retained earnings, against which they were incorrectly charged. Since treasury stock cannot be considered an asset, dividends on treasury stock are not properly included in net income.
13. The character of preferred stock can be altered by being cumulative or noncumulative, participating or nonparticipating, convertible or nonconvertible, and/or callable or noncallable.
14. Nonparticipating means the security holder is entitled to no more than the specified fixed dividend. If the security is partially participating, it means that in addition to the specified fixed dividend the security may participate with the common stock in dividends up to a certain stated rate or amount. A fully participating security shares pro rata with the common stock dividends declared without limitation. In this case, Little Texas Inc. has a fully participating preferred stock. Cumulative means dividends not paid in any year must be made up in a later year before any profits can be distributed to common stockholders. Any dividends not paid on cumulative preferred stock constitute a dividend in arrears. A dividend in arrears is not a liability until the board of directors declares a dividend.
15. Preferred stock is generally reported at par value as the first item in the stockholders' equity section of a company's balance sheet. Any excess over par value is reported as part of additional paid-in capital.
16. Additional paid-in capital results from: (1) premiums on stock issued, (2) sale of treasury stock above cost, (3) recapitalizations or revisions in the capital structure, (4) assessments on stockholders, (5) conversion of convertible bonds or preferred stock, and (6) declaration of a small stock dividend.
17. When treasury stock is purchased, the Treasury Stock Account is debited and Cash is credited at **cost** (\$290,000 in this case). Treasury Stock is a contra stockholders' equity account and Cash is an asset. Thus, this transaction has: (a) no effect on net income, (b) decreases total assets, (c) has no effect on total paid-in capital, and (d) decreases total stockholders' equity.

Questions Chapter 15 (Continued)

18. The answers are summarized in the table below:

<u>Account</u>	<u>Classification</u>
(a) Common Stock	Paid-in capital—capital stock
(b) Retained Earnings	Retained earnings
(c) Paid-in Capital in Excess of Par Value	Paid-in capital—additional paid-in capital
(d) Treasury Stock	Deducted from total paid-in capital and retained earnings
(e) Paid-in Capital from Treasury Stock	Paid-in capital—additional paid-in capital
(f) Paid-in Capital in Excess of Stated Value	Paid-in capital—additional paid-in capital
(g) Preferred Stock	Paid-in capital—capital stock

19. The dividend policy of a company is influenced by (1) the availability of cash, (2) the stability of earnings, (3) current earnings, (4) prospective earnings, (5) the existence or absence of contractual restrictions on working capital or retained earnings, and (6) a retained earnings balance.
20. Currently, the legal restrictions on distributions to corporate owners for the 50 states may be divided into three groups. The largest group operates under the 1950 Model Business Corporation Act which permits distributions to stockholders so long as the corporation is not insolvent. Insolvency is defined as the inability to pay debts as they come due in the normal course of business. Generally, in these states distribution in the form of dividends has to come from retained earnings or from current earnings.

A second group either follow the 1984 Revised Model Business Corporation Act or have distribution restrictions similar to it; i.e., (1) the corporation must be solvent and (2) distributions must not exceed the fair value of net assets. Under the latter criterion, distributions are not limited to retained earnings or GAAP determined current earnings. Instead of being tied to the book value of the assets, distributions are linked to the fair (appraised) value of the assets, a notable new criterion.

The remaining states use a variety of hybrid restrictions that consist of solvency and balance sheet tests of liquidity and risk. To avoid illegally distributing corporate assets to stockholders, the relevant state corporation act should be examined and legal advice obtained.

21. In declaring a dividend, the board of directors must consider the condition of the corporation such that a dividend is (1) legally permissible and (2) economically sound.

In general, directors should give consideration to the following factors in determining the legality of a dividend declaration:

1. Retained earnings, unless legally encumbered in some manner, is usually the correct basis for dividend distribution.
2. Revaluation capital is seldom the correct basis for dividends (except possibly stock dividends).
3. In some states, additional paid-in capital may be used for dividends, although such dividends may be limited to preferred stock.
4. Deficits in retained earnings and debits in paid-in capital accounts must be restored before payment of any dividends.
5. Dividends in some states may not reduce retained earnings below the cost of treasury stock held.

In order that dividends be economically sound, the board of directors should consider: (1) the availability (liquidity) of assets for distribution; (2) agreements with creditors; (3) the effect of a dividend on investor perceptions (e.g. maintaining an expected “pay-out ratio”); and (4) the size of the dividend with respect to the possibility of paying dividends in future bad years. In addition, the ability to expand or replace existing facilities should be considered.

Questions Chapter 15 (Continued)

22. Dividends, at least cash dividends, are paid out of working capital. A balance must exist in retained earnings to permit a legal distribution of profits, but having a balance in retained earnings does not ensure the ability to pay a dividend if the cash situation does not permit it.
23. A **cash dividend** is a distribution in cash while a **property dividend** is a distribution in assets other than cash. Any dividend not based on retained earnings is a **liquidating dividend**. A **stock dividend** is the issuance of additional shares of the corporation's stock in a nonreciprocal exchange involving existing stockholders with no change in the par or stated value.
24. A stock dividend results in the transfer from retained earnings to paid-in capital of an amount equal to the market value of each share (if the dividend is less than 20-25%) or the par value of each share (if the dividend is greater than 20-25%). No formal journal entries are required for a stock split, but a notation in the ledger accounts would be appropriate to show that the par value of the shares has changed.
25. (a) A stock split effected in the form of a dividend is a distribution of corporate stock to present stockholders in proportion to each stockholder's current holdings and can be expected to cause a material decrease in the market value per share of the stock. **Accounting Research Bulletin No. 43** specifies that a distribution in excess of 20% to 25% of the number of shares previously outstanding would cause a material decrease in the market value. This is a characteristic of a stock split as opposed to a stock dividend, but, for legal reasons, the term "dividend" must be used for this distribution. From an accounting viewpoint, it should be disclosed as a stock split effected in the form of a dividend because it meets the accounting definition of a stock split as explained above.
- (b) The stock split effected in the form of a dividend differs from an ordinary stock dividend in the amount of other paid-in capital or retained earnings to be capitalized. An ordinary stock dividend involves capitalizing (charging) retained earnings equal to the market value of the stock distributed. A stock split effected in the form of a dividend involves no charge to retained earnings or other paid-in capital if the par (stated) value of the stock is reduced in inverse proportion to the distribution. If the stock's par (stated) value is not reduced in inverse proportion to the distribution of stock, other paid-in capital or retained earnings would be charged for the par (stated) value of the additional shares issued.
- Another distinction between a stock dividend and a stock split is that a stock dividend usually involves distributing additional shares of the same class of stock with the same par or stated value. A stock split usually involves distributing additional shares of the same class of stock but with a proportionate reduction in par or stated value. The aggregate par or stated value would then be the same before and after the stock split.
- (c) A declared but unissued stock dividend should be classified as part of paid-in capital rather than as a liability in a statement of financial position. A stock dividend affects only capital accounts; that is, retained earnings is decreased and contributed capital is increased. Thus, there is no debt to be paid, and, consequently, there is no severance of corporate assets when a stock dividend is issued. Furthermore, stock dividends declared can be revoked by a corporation's board of directors any time prior to issuance. Finally, the corporation usually will formally announce its intent to issue a specific number of additional shares, and these shares must be reserved for this purpose.
26. A partially liquidating dividend will be debited both to Retained Earnings and Additional Paid-in Capital. The portion of dividends that is a return of capital should be debited to Additional Paid-in Capital.

Questions Chapter 15 (Continued)

27. A property dividend is a nonreciprocal transfer of nonmonetary assets between an enterprise and its owners. A transfer of a nonmonetary asset to a stockholder or to another entity in a non-reciprocal transfer should be recorded at the fair value of the asset transferred, and a gain or loss should be recognized on the disposition of the asset.
28. Retained earnings are restricted because of legal or contractual restrictions, or the necessity to protect the working capital position.
29. Restrictions are best disclosed in a note to the financial statements. This allows a more complete explanation of the restriction.

*30.

	<u>Preferred</u>	<u>Common</u>	<u>Total</u>
(a) Current year's dividend, 10%	\$10,000	\$30,000 ^a	\$40,000
Participating dividend, 12% ($\$48,000 \div \$400,000$)	<u>12,000</u>	<u>36,000</u>	<u>48,000</u>
Totals	<u>\$22,000</u>	<u>\$66,000</u>	<u>\$88,000</u>

^a ($12,000 \times \$25 \times .10$) Common div./share: \$5.50 ($\$66,000 \div 12,000$)

	<u>Preferred</u>	<u>Common</u>	<u>Total</u>
(b) Dividends in arrears, 10% of \$100,000	\$10,000		\$10,000
Current year's dividend, 10%	10,000	\$30,000	40,000
Participating dividend 9.5% ($\$38,000 \div \$400,000$)	<u>9,500</u>	<u>28,500</u>	<u>38,000</u>
Totals	<u>\$29,500</u>	<u>\$58,500</u>	<u>\$88,000</u>

	<u>Preferred</u>	<u>Common</u>	<u>Total</u>
(c) Dividends in arrears ($\$100,000 \times 10\%$) – \$5,000	\$5,000	–0–	\$5,000
Current year's dividend, 10%	10,000		10,000
Remainder to common	_____	<u>\$15,000</u>	<u>15,000</u>
Totals	<u>\$15,000</u>	<u>\$15,000</u>	<u>\$30,000</u>

SOLUTIONS TO BRIEF EXERCISES

BRIEF EXERCISE 15-1

Cash	4,100	
Common Stock (300 X \$10)		3,000
Paid-in Capital in Excess of Par		1,100

BRIEF EXERCISE 15-2

(a) Cash	10,200	
Common Stock—No-Par Value		10,200
(b) Cash	10,200	
Common Stock (600 X \$2)		1,200
Paid-in Capital in Excess of Stated Value		9,000

BRIEF EXERCISE 15-3

LUFIA CORPORATION Stockholders' Equity 12/31/03

Common stock, \$5 par value		\$ 210,000
Paid-in capital in excess of par		1,320,000
Retained earnings		<u>2,340,000</u>
		3,870,000
Less treasury stock		<u>(90,000)</u>
Total stockholders' equity		<u><u>\$3,780,000</u></u>

BRIEF EXERCISE 15-4

Cash	14,200	
Preferred Stock (100 X \$50)		5,000
Paid-in Capital in Excess of Par—Preferred		3,520
Common Stock (300 X \$10)		3,000
Paid-in Capital in Excess of Par—Common		2,680
FMV of common (300 X \$20)	\$ 6,000	
FMV of preferred (100 X \$90)		<u>9,000</u>
Total FMV		<u><u>\$15,000</u></u>

BRIEF EXERCISE 15-4 (Continued)

Allocated to common $\frac{\$6,000}{\$15,000} \times \$14,200 = \$ 5,680$

Allocated to preferred $\frac{\$9,000}{\$15,000} \times \$14,200 = \frac{8,520}{\underline{\$14,200}}$

BRIEF EXERCISE 15-5

Land	31,000	
Common Stock (2,000 X \$5).....		10,000
Paid-in Capital in Excess of Par		21,000

BRIEF EXERCISE 15-6

Cash (\$70,000 – \$1,500).....	68,500	
Common Stock (2,000 X \$10).....		20,000
Paid-in Capital in Excess of Par		48,500

BRIEF EXERCISE 15-7

7/1/03	Treasury Stock (100 X \$85).....	8,500	
	Cash		8,500
9/1/03	Cash (60 X \$90)	5,400	
	Treasury Stock (60 X \$85)		5,100
	Paid-in Capital from Treasury Stock.....		300
11/1/03	Cash (40 X \$83)	3,320	
	Paid-in Capital from Treasury Stock	80	
	Treasury Stock (40 X \$85)		3,400

BRIEF EXERCISE 15-8

8/1/01	Treasury Stock (200 X \$75).....	15,000	
	Cash		15,000
11/1/01	Cash (200 X \$70).....	14,000	
	Retained Earnings.....	1,000	
	Treasury Stock.....		15,000

BRIEF EXERCISE 15-9

Cash.....	61,500	
Preferred Stock (450 X \$100)		45,000
Paid-in Capital in Excess of Par—Preferred		16,500

BRIEF EXERCISE 15-10

Aug. 1	Retained Earnings (2,000,000 X \$1.50)	3,000,000	
	Dividends Payable.....		3,000,000
Aug. 15	No entry.		
Sep. 9	Dividends Payable.....	3,000,000	
	Cash		3,000,000

BRIEF EXERCISE 15-11

Sep. 21	Available-for-Sale Securities	525,000	
	Gain on Appreciation of Securities (\$1,400,000 – \$875,000)...		525,000
	Retained Earnings	1,400,000	
	Property Dividends Payable.....		1,400,000
Oct. 8	No entry.		
Oct. 23	Property Dividends Payable	1,400,000	
	Available-for-Sale Securities.....		1,400,000

BRIEF EXERCISE 15-12

Apr. 20	Retained Earnings (\$700,000 – \$125,000)....	575,000	
	Paid-in Capital in Excess of Par	125,000	
	Dividends Payable		700,000
June 1	Dividends Payable	700,000	
	Cash		700,000

BRIEF EXERCISE 15-13**Declaration Date.**

Retained Earnings	650,000	
Common Stock Dividend Distributable.....		100,000
Paid-in Capital in Excess of Par.....		550,000
(10,000 X \$65 = \$650,000;		
10,000 X \$10 = \$100,000)		

Distribution Date.

Common Stock Dividend Distributable	100,000	
Common Stock		100,000

BRIEF EXERCISE 15-14**Declaration Date.**

Retained Earnings	2,000,000	
Common Stock Dividend Distributable.....		2,000,000
(200,000 X \$10)		

Distribution Date.

Common Stock Dividend Distributable	2,000,000	
Common Stock		2,000,000

***BRIEF EXERCISE 15-15**

- (a) Preferred stockholders would receive \$80,000 ($8\% \times \$1,000,000$) and the remainder of \$220,000 ($\$300,000 - \$80,000$) would be distributed to common stockholders.**

- (b) Preferred stockholders would receive \$240,000 ($8\% \times \$1,000,000 \times 3$) and the remainder of \$60,000 would be distributed to the common stockholders.**

SOLUTIONS TO EXERCISES

EXERCISE 15-1 (15-20 minutes)

(a)	Jan. 10	Cash (80,000 X \$6).....	480,000	
		Common Stock (80,000 X \$5).....		400,000
		Paid-in Capital in Excess of Par		80,000
	Mar. 1	Organization Expense.....	35,000	
		Common Stock (5,000 X \$5).....		25,000
		Paid-in Capital in Excess of Par		10,000

(Note: In the past, these costs would have been charged to Organization Costs)

	July 1	Cash (30,000 X \$8).....	240,000	
		Common Stock (30,000 X \$5).....		150,000
		Paid-in Capital in Excess of Par		90,000
		(30,000 X \$3)		
	Sept. 1	Cash (60,000 X \$10).....	600,000	
		Common Stock (60,000 X \$5).....		300,000
		Paid-in Capital in Excess of Par		300,000
		(60,000 X \$5)		
(b)	Jan. 10	Cash (80,000 X \$6).....	480,000	
		Common Stock (80,000 X \$3).....		240,000
		Paid-in Capital in Excess of		
		Stated Value (80,000 X \$3).....		240,000
	Mar. 1	Organization Expense.....	35,000	
		Common Stock (5,000 X \$3).....		15,000
		Paid-in Capital in Excess of		
		Stated Value.....		20,000
		(\$35,000 – \$15,000 or 5,000 X \$4)		
	July 1	Cash (30,000 X \$8).....	240,000	
		Common Stock (30,000 X \$3).....		90,000
		Paid-in Capital in Excess of		
		Stated Value (30,000 X \$5).....		150,000

EXERCISE 15-1 (Continued)

Sept. 1	Cash (60,000 X \$10).....	600,000	
	Common Stock (60,000 X \$3).....		180,000
	Paid-in Capital in Excess of Stated Value (60,000 X \$7).....		420,000

EXERCISE 15-2 (15-20 minutes)

Jan. 10	Cash (80,000 X \$5).....	400,000	
	Common Stock (80,000 X \$1).....		80,000
	Paid-in Capital in Excess of Stated Value—Common Stock		320,000
	(80,000 X \$4)		

Mar. 1	Cash (5,000 X \$108).....	540,000	
	Preferred Stock (5,000 X \$100)		500,000
	Paid-in Capital in Excess of Par Value—Preferred Stock		40,000
	(5,000 X \$8)		

April 1	Land	80,000	
	Common Stock (24,000 X \$1).....		24,000
	Paid-in Capital in Excess of Stated Value—Common Stock		56,000
	(\$80,000 – \$24,000)		

May 1	Cash (80,000 X \$7).....	560,000	
	Common Stock (80,000 X \$1).....		80,000
	Paid-in Capital in Excess of Stated Value—Common Stock		480,000
	(80,000 X \$6)		

Aug. 1	Organization Expense*	50,000	
	Common Stock (10,000 X \$1).....		10,000
	Paid-in Capital in Excess of Stated Value—Common Stock		40,000
	(\$50,000 – \$10,000)		

*(In the past, these costs would have been charged to Organization Costs)

EXERCISE 15-2 (Continued)

Sept. 1	Cash (10,000 X \$9)	90,000	
	Common Stock (10,000 X \$1)		10,000
	Paid-in Capital in Excess of Stated Value—Common Stock..... (10,000 X \$8)		80,000
Nov. 1	Cash (1,000 X \$112)	112,000	
	Preferred Stock (1,000 X \$100).....		100,000
	Paid-in Capital in Excess of Par Value—Preferred Stock		12,000
	(1,000 X \$12)		

EXERCISE 15-3 (10-15 minutes)

(a)	Land (\$62 X 25,000).....	1,550,000	
	Treasury Stock (\$53 X 25,000)		1,325,000
	Paid-in Capital from Treasury Stock		225,000

- (b) One might use the cost of treasury stock. However, this is not a relevant measure of this economic event. Rather, it is a measure of a prior, unrelated event. The appraised value of the land is a reasonable alternative since the value of the asset acquired should preferably determine the issue price of the stock. However, it is an appraisal as opposed to a cash price. The trading price of the stock is probably the best measure of market value in this transaction.

EXERCISE 15-4 (20-25 minutes)

(a) 1.	Bond Issue Costs (\$352,000 X \$500/\$880)	200,000	
	Cash (\$880 X 9,600)	8,448,000	
	Bonds Payable		5,000,000
	Common Stock.....		500,000
	Paid-in Capital in Excess of Par		3,148,000

Assumes bonds properly priced and issued at par; residual attributed to common stock which has a weak measure of market value.

EXERCISE 15-4 (Continued)

Investment banking costs 400 @ \$880 = \$352,000 allocate 5/8.8 to debentures and 3.8/8.8 to common stock. Bond portion is bond issue cost; common stock portion is a reduction of paid-in capital.

2. Cash	8,448,000	
Bond Issue Costs	195,556	
Bond Discount	111,111	
Bonds Payable (\$5,000,000 – \$4,888,889) ..		5,000,000
Common Stock.....		500,000
Paid-in Capital in Excess of Par		3,254,667

$\$8,800,000 \times (5/9) = \$4,888,889$ To Debentures

$\$8,800,000 \times (4/9) = \$3,911,111$ To Common

$\$352,000 \times (5/9) = \$195,556$

$\$352,000 \times (4/9) = \$156,444$

Paid-in capital in excess of par = $\$3,911,111 - \$500,000 - \$156,444$
 = $\$3,254,667$

(b) One is not better than the other. This question is presented to stimulate some thought and class discussion.

EXERCISE 15-5 (10-15 minutes)

(a) FMV of Common (500 X \$165)	\$ 82,500
FMV of Preferred (100 X \$230)	<u>23,000</u>
	<u>\$105,500</u>

Allocated to Common: $\$82,500/\$105,500 \times \$100,000$	\$ 78,199
Allocated to Preferred: $\$23,000/\$105,500 \times \$100,000$	<u>21,801</u>
Total allocation (rounded to whole dollars)	<u>\$100,000</u>

EXERCISE 15-5 (Continued)

Cash	100,000
Common Stock (500 X \$10)	5,000
Paid-in Capital in Excess of Par—	
Common (\$78,199 – \$5,000).....	73,199
Preferred Stock (100 X \$100).....	10,000
Paid-in Capital in Excess of Par—	
Preferred (\$21,801 – \$10,000).....	11,801
 (b) Lump-sum receipt	\$100,000
Allocated to common (500 X \$170)	85,000
Balance allocated to preferred	<u>\$ 15,000</u>

Cash	100,000
Common Stock	5,000
Paid-in Capital in Excess of Par—	
Common (\$85,000 – \$5,000).....	80,000
Preferred Stock.....	10,000
Paid-in Capital in Excess of Par—	
Preferred (\$15,000 – \$10,000)	5,000

EXERCISE 15-6 (25-30 minutes)

(a) Cash [(5,000 X \$45) – \$7,000]	218,000
Common Stock (5,000 X \$5).....	25,000
Paid-in Capital in Excess of Par	193,000
 (b) Land (1,000 X \$46).....	46,000
Common Stock (1,000 X \$5).....	5,000
Paid-in Capital in Excess of Par	41,000
(\$46,000 – \$5,000)	

Note: The market value of the stock (\$46,000) is used to value the exchange because it is a more objective measure than the appraised value of the land (\$50,000).

(c) Treasury Stock (500 X \$43)	21,500
Cash.....	21,500

EXERCISE 15-7 (15-20 minutes)

#	Assets	Liabilities	Stockholders' Equity	Paid-in Capital	Retained Earnings	Net Income
1	D	NE	D	NE	NE	NE
2	I	NE	I	I	NE	NE
3	I	NE	I	D	NE	NE

EXERCISE 15-8 (15-20 minutes)

(a) $\$1,000,000 \times 8\% = \$80,000$; $\$80,000 \times 3 = \$240,000$. The cumulative dividend is disclosed in a note to the stockholders' equity section; it is not reported as a liability.

(b)

Preferred Stock (4,000 X \$100)	400,000	
Common Stock (4,000 X 7 X \$10)		280,000
Paid-in Capital in Excess of Par Value— Common		120,000

(c) Paid-in capital

Preferred stock, \$100 par 8%, 10,000 shares issued	\$1,000,000
Paid-in capital in excess of par (10,000 X \$7)	70,000

EXERCISE 15-9 (15-20 minutes)

May 2	Cash	192,000	
	Common Stock (12,000 X \$5)		60,000
	Paid-in Capital in Excess of Par— Common Stock (12,000 X \$11)		132,000
10	Cash	600,000	
	Preferred Stock (10,000 X \$30)		300,000
	Paid-in Capital in Excess of Par— Preferred Stock (10,000 X \$30)		300,000
15	Treasury Stock	15,000	
	Cash		15,000

EXERCISE 15-9 (Continued)

31	Cash.....	8,500	
	Treasury Stock* (500 X \$15).....		7,500
	Paid-in Capital from Treasury Stock (500 X \$2)		1,000

EXERCISE 15-10 (20-25 minutes)

- (a) (1) The par value is \$2.50. This amount is obtained from either of the following: 2004— $\$545 \div 218$ or 2003— $\$540 \div 216$.
- (2) The cost of treasury shares was higher in 2004. The cost at December 31, 2004 was \$46 per share ($\$1,564 \div 34$) compared to the cost at December 31, 2003 of \$34 per share ($\$918 \div 27$).

(b) Stockholders' equity (in millions of dollars)

Paid-in capital	
Common stock, \$2.50 par value, 500,000,000 shares authorized, 218,000,000 shares issued, and 184,000,000 shares outstanding	\$ 545
Additional paid-in capital	<u>931</u>
Total paid-in capital	1,476
Retained earnings	<u>7,167</u>
Total paid-in capital and retained earnings	8,643
Less: Cost of treasury stock (34,000,000 shares)	<u>(1,564)</u>
Total stockholders' equity	<u>\$7,079</u>

EXERCISE 15-11 (15-20 minutes)

Item	Assets	Liabilities	Stockholders' Equity	Paid-in Capital	Retained Earnings	Net Income
1.	I	NE	I	NE	I	I
2.	NE	I	D	NE	D	NE
3.	NE	NE	NE	NE	NE	NE
4.	NE	NE	NE	NE	NE	NE
5.	D	NE	D	NE	D	D
6.	D	D	NE	NE	NE	NE
7.	NE	I	D	NE	D	D
8.	NE	NE	NE	I	D	NE
9.	NE	NE	NE	NE	NE	NE

EXERCISE 15-12 (10-15 minutes)

(a) 6/1 Retained Earnings..... 8,000,000
 Dividends Payable 8,000,000

6/14 No entry on date of record.

6/30 Dividends Payable 8,000,000
 Cash..... 8,000,000

(b) If this were a liquidating dividend, the debit entry on the date of declaration would be to Additional Paid-in Capital rather than Retained Earnings.

(c) One may observe that paying a dividend to the corporation is rather circular. It does raise some potential for misdirection. However, this scenario would simplify the routine cash disbursement to the registrar which acts as the dividend disbursing agent. The dividend is not income, rather it is a correction.

Cash 240,000
 Retained Earnings..... 240,000

EXERCISE 15-13 (10-15 minutes)

(a) No entry—simply a memorandum indicating the number of shares has increased to 18 million and par value has been reduced from \$10 to \$5 per share.

(b)	Retained Earnings	90,000,000	
	Common Stock Dividend Distributable		90,000,000
	Common Stock Dividend Distributable	90,000,000	
	Common Stock		90,000,000

(c) Stock dividends and splits serve the same function with regard to the securities markets. Both techniques allow the board of directors to increase the quantity of shares and channel share prices into the “popular trading range.”

For accounting purposes the 20%-25% rule reasonably views large stock dividends as substantive stock splits. It is necessary to capitalize par value with a stock dividend because the number of shares is increased and the par value remains the same. Earnings are capitalized for purely procedural reasons.

EXERCISE 15-14 (10-12 minutes)

(a)	Retained Earnings (15,000 X \$37)	555,000	
	Common Stock Dividend Distributable		150,000
	Paid-in Capital in Excess of Par		405,000
	Common Stock Dividend Distributable	150,000	
	Common Stock		150,000

(b)	Retained Earnings (300,000 X \$10)	3,000,000	
	Common Stock Dividend Distributable		3,000,000
	Common Stock Dividend Distributable	3,000,000	
	Common Stock		3,000,000

(c) No entry, the par value becomes \$5.00 and the number of shares outstanding increases to 600,000.

EXERCISE 15-15 (10-15 minutes)

(a)	Retained Earnings	97,500	
	Common Stock Dividend		
	Distributable.....		25,000
	Paid-in Capital in Excess of Par.....		72,500
	(50,000 shares X 5% X \$39 = \$97,500)		
	 Common Stock Dividend Distributable.....	 25,000	
	Common Stock		25,000

(b) No entry, memorandum note to indicate that par value is reduced to \$2 and shares outstanding are now 250,000 (50,000 X 5).

	January 5, 2004		
(c)	Investments (Bonds)	35,000	
	Gain on Appreciation of Investments		
	(Bonds)		35,000
	 Retained Earnings	 135,000	
	Property Dividends Payable.....		135,000
	January 25, 2004		
	Property Dividends Payable.....	135,000	
	Investments (Bonds).....		135,000

EXERCISE 15-16 (5-10 minutes)

Total income since incorporation		\$317,000
Less: Total cash dividends paid	\$60,000	
Total value of stock dividends	<u>30,000</u>	<u>90,000</u>
Current balance of retained earnings		<u>\$227,000</u>

EXERCISE 15-17 (20-25 minutes)

**Bruno Corporation
Stockholders' Equity
December 31, 2003**

Capital stock	
Preferred stock, \$4 cumulative, par value \$50 per share; authorized 60,000 shares, issued and outstanding 10,000 shares	\$ 500,000
Common stock, par value \$1 per share; authorized 600,000 shares, issued 200,000 shares, and outstanding 190,000 shares	<u>200,000</u>
Total capital stock	700,000
Additional paid-in capital—	
In excess of par value	1,300,000
From sale of treasury stock	<u>160,000</u>
Total paid-in capital	2,160,000
Retained earnings	<u>301,000</u>
Total paid-in capital and retained earnings	2,461,000
Less treasury stock, 10,000 shares at cost	<u>170,000</u>
Total stockholders' equity	<u>\$2,291,000</u>

EXERCISE 15-18 (30-35 minutes)

(a)	1.	Dividends Payable—Preferred (2,000 X \$10)	20,000	
		Dividends Payable—Common (20,000 X \$2)	40,000	
		Cash		60,000
	2.	Treasury Stock	68,000	
		Cash (1,700 X \$40)		68,000
	3.	Land	30,000	
		Treasury Stock (700 X \$40)		28,000
		Paid-in Capital From Treasury Stock.....		2,000

EXERCISE 15-18 (Continued)

4. Cash (500 X \$105)	52,500	
Preferred Stock (500 X \$100)		50,000
Paid-in Capital in Excess of Par— Preferred		2,500
5. Retained Earnings (1,900 X \$45)	85,500	
Common Stock Dividend Distributable (1,900 X \$5)		9,500
Paid-in Capital in Excess of Par— Common		76,000
6. Common Stock Dividend Distributable	9,500	
Common Stock		9,500
7. Retained Earnings	66,800	
Dividends Payable—Preferred (2,500 X \$10)		25,000
Dividends Payable—Common (20,900 X \$2)		41,800

**(b) Anne Cleves Company
Stockholders' Equity—12/31/03**

Capital stock

Preferred stock, 10%, \$100 par, 10,000 shares authorized, 2,500 shares issued and outstanding		\$250,000
Common stock, \$5 par, 100,000 shares authorized, 21,900 shares issued, 20,900 shares outstanding		<u>109,500</u>
Total capital stock		359,500
Additional paid-in capital		<u>205,500</u>
Total paid-in capital		565,000
<u>Retained earnings</u>	_____	<u>627,700</u>

EXERCISE 15-18 (Continued)

Total paid-in capital and retained earnings	1,192,700
Less cost of treasury stock (1,000 shares common)	<u>40,000</u>
Total stockholders' equity	<u>\$1,152,700</u>

Computations:

$$\text{Preferred stock } \$200,000 + \$50,000 = \underline{\$250,000}$$

$$\text{Common stock } \$100,000 + \$9,500 = \underline{\$109,500}$$

$$\text{Additional paid-in capital: } \$125,000 + \$2,000 + \$2,500 + \$76,000 = \underline{\$205,500}$$

$$\text{Retained earnings: } \$450,000 - \$85,500 - \$66,800 + \$330,000 = \underline{\$627,700}$$

$$\text{Treasury stock } \$68,000 - \$28,000 = \underline{\$40,000}$$

EXERCISE 15-19 (20-25 minutes)

(a) Mary Ann Benson Company is the more profitable in terms of rate of return on total assets. This may be shown as follows:

$$\text{Benson Company } \frac{\$660,000}{\$4,200,000} = 15.71\%$$

$$\text{Kingston Company } \frac{\$594,000}{\$4,200,000} = 14.14\%$$

It should be noted that these returns are based on net income related to total assets, where the ending amount of total assets is considered representative. If the rate of return on total assets uses net income before interest but after taxes in the numerator, the rates of return on total assets are the same as shown below:

$$\text{Benson Company } \frac{\$660,000}{\$4,200,000} = 15.71\%$$

$$\text{Kingston Company } \frac{\$594,000 + \$120,000 - \$54,000}{\$4,200,000} = \frac{\$660,000}{\$4,200,000} = 15.71\%$$

EXERCISE 15-19 (Continued)

(b) Kingston Company is the more profitable in terms of return on stockholder' equity. This may be shown as follows:

$$\text{Kingston Company} \quad \frac{\$594,000}{\$2,700,000} = 22\%$$

$$\text{Benson Company} \quad \frac{\$660,000}{\$3,600,000} = 18.33\%$$

(Note to instructor: To explain why the difference in rate of return on assets and rate of return on stockholders' equity occurs, the following schedule might be provided to the student.)

Kingston Company				
Fund Supplies	Funds Supplied	Rate of Return on Funds at 15.71%*	Cost of Funds	Accruing to Common Stock
Current liabilities	\$ 300,000	\$ 47,130	\$ 0	\$ 47,130
Long-term debt	1,200,000	188,520	66,000 **	122,520
Common stock	2,000,000	314,200	0	314,200
Retained earnings	700,000	109,970	0	109,970
	<u>\$4,200,000</u>	<u>\$659,820</u>	<u>\$66,000</u>	<u>\$593,820</u>

*Determined in part (a), 15.71%

**The cost of funds is the interest of \$120,000 (\$1,200,000 X 10%). This interest cost must be reduced by the tax savings (45%) related to the interest.

The schedule indicates that the income earned on the total assets (before interest cost) was \$659,820. The interest cost (net of tax) of this income was \$66,000, which indicates a net return to the common equity of \$593,820.

(c) The Kingston Company earned a net income per share of \$5.94 (\$594,000 ÷ 100,000) while Benson Company had an income per share of \$4.55 (\$660,000 ÷ 145,000). Kingston Company has borrowed a substantial portion of its assets at a cost of 10% and has used these assets to earn a return in excess of 10%. The excess earned on the borrowed assets represents additional income for the stockholders and has resulted in the higher income per share. Due to the debt financing, Kingston has fewer shares of stock outstanding.

EXERCISE 15-19 (Continued)

- (d) Yes, from the point of view of income it is advantageous for the stockholders of the Kingston Company to have long-term debt outstanding. The assets obtained from incurrence of this debt are earning a higher return than their cost to the Kingston Company.
- (e) Book value per share.

$$\text{Kingston Company} \quad \frac{\$2,000,000 + \$700,000}{100,000} = \$27.00$$

$$\text{Benson Company} \quad \frac{\$2,900,000 + \$700,000}{145,000} = \$24.83$$

EXERCISE 15-20 (15 minutes)

Rate of return on common stock equity:

$$\frac{\$213,718}{\$875,000 + \$375,000} = \frac{\$213,718}{\$1,250,000} = 17.1\%$$

$$\text{Rate of interest paid on bonds payable: } \frac{\$135,000}{\$1,000,000} = 13.5\%$$

Emporia Plastics, Inc. is trading on the equity successfully, since its return on common stock equity is greater than interest paid on bonds.

*EXERCISE 15-21 (10-15 minutes)

	<u>Preferred</u>	<u>Common</u>	<u>Total</u>
(a) Preferred stock is noncumulative, non-participating	<u>\$16,000</u>	<u>\$74,000</u>	<u>\$90,000</u>
(b) Preferred stock is cumulative, nonparticipating	<u>\$48,000</u>	<u>\$42,000</u>	<u>\$90,000</u>

EXERCISE 15-21 (Continued)

(c) Preferred stock is cumulative, participating	<u>\$57,778</u>	<u>\$32,222</u>	<u>\$90,000*</u>
*Dividends in arrears	\$32,000		\$32,000
Current dividend	16,000		16,000
Pro rata share to common (\$250,000 X 8%)		\$20,000	20,000
Balance dividend pro rata 20/45 X \$22,000**	9,778		9,778
25/45 X \$22,000**		<u>12,222</u>	<u>12,222</u>
	<u>\$57,778</u>	<u>\$32,222</u>	<u>\$90,000</u>

****4.89% (\$22,000/\$450,000) of par value.**

***EXERCISE 15-22 (10-15 minutes)**

	<u>Preferred</u>	<u>Common</u>	<u>Total</u>
(a) One year in arrears	\$14,000		\$ 14,000
Current year	14,000	\$210,000	224,000
Participating (4%)	<u>8,000</u>	<u>120,000</u>	<u>128,000</u>
(4% $\frac{\\$366,000 - \\$238,000}{\\$3,200,000}$)	<u>\$36,000</u>	<u>\$330,000</u>	<u>\$366,000</u>
(b)	<u>\$14,000</u>	<u>\$352,000</u>	<u>\$366,000</u>
(c) Current year	\$14,000	\$210,000	\$224,000
Additional 3% to common		90,000	90,000
Participating (1.625%)	<u>3,250</u>	<u>48,750</u>	<u>52,000</u>
(1.625% $\frac{\\$366,000 - \\$314,000}{\\$3,200,000}$)	<u>\$17,250</u>	<u>\$348,750</u>	<u>\$366,000</u>

***EXERCISE 15-23 (10-15 minutes)**

Assumptions

Year	Paid-out	(a) Preferred, noncumulative and nonparticipating		(b) Preferred, cumulative and fully participating	
		Preferred	Common	Preferred	Common
2002	\$13,000	\$5.20	-0-	\$ 5.20	-0-
2003	\$26,000	\$6.00	\$.73 ^a	\$ 6.80 ^b	\$.60 ^c
2004	\$57,000	\$6.00	\$2.80 ^d	\$14.25 ^e	\$1.43 ^e
2005	\$76,000	\$6.00	\$4.07 ^f	\$19.00 ^g	\$1.90 ^g

$$^a\$0.73 = \frac{\$26,000 - \$15,000^*}{15,000}$$

$$^c\$0.60 = \frac{\$26,000 - \$17,000^{**}}{15,000}$$

*(\$15,000 = \$6 X 2,500)

**(\$17,000 = \$6.80 X 2,500)

^b\$6 + \$.80 (for 2002)

$$^d\$2.80 = \frac{\$57,000 - \$15,000}{15,000}$$

^e

	Total	Per Share	
		Preferred	Common
Total amount to be distributed	\$57,000		
Preferred dividend (\$6 X 2,500)	<u>(15,000)</u>	\$6.00	
Available for common and participation	42,000		
Ratable dividend to common (6% X \$150,000)	<u>(9,000)</u>		\$.60
Available for participation	33,000		
Preferred (.0825 X \$100)		<u>8.25</u>	
Common (.0825 X \$10)			<u>.83</u>

$$(.0825 = \frac{\$33,000}{\$250,000 + \$150,000})$$

Totals

\$14.25

\$1.43

$$^f\$4.07 = \frac{\$76,000 - \$15,000}{15,000}$$

EXERCISE 15-23 (Continued)

9

	<u>Total</u>	<u>Per Share</u>	
		<u>Preferred</u>	<u>Common</u>
Total amount to be distributed	\$76,000		
Preferred dividend (\$6 X 2,500)	<u>(15,000)</u>	\$ 6.00	
Available for common and participation	61,000		
Ratable dividend to common (6% X \$150,000)	<u>(9,000)</u>		\$.60
Available for participation	\$52,000		
Preferred (.13 X \$100)		13.00	
Common (.13 X \$10)			1.30
(.13 = $\frac{\$52,000}{\$250,000 + \$150,000}$)			
Totals		<u>\$19.00</u>	<u>\$1.90</u>

*EXERCISE 15-24 (10-15 minutes)

(a)	<u>Common</u>	<u>Preferred</u>
Stockholders' equity		
Preferred stock		\$500,000
Common stock	\$ 750,000	
Retained earnings		
Dividends in arrears (3 years at 8%)		120,000
Remainder to common*	<u>380,000</u>	
	<u>\$1,130,000</u>	<u>\$620,000</u>
Shares outstanding	750,000	
Book value per share (\$1,130,000 ÷ 750,000)	<u>\$1.51</u>	
*Balance in retained earnings		
(\$800,000 – \$40,000 – \$260,000)		\$500,000
Less dividends to preferred		<u>(120,000)</u>
Available to common		<u>\$380,000</u>

EXERCISE 15-24 (Continued)

(b) Stockholders' equity

Preferred stock		\$500,000
Liquidating premium		30,000
Common stock	\$ 750,000	
Retained earnings		
Dividends in arrears (3 years at 8%)		\$120,000
Remainder to common*	<u>350,000</u>	<u> </u>
	<u>\$1,100,000</u>	<u>\$650,000</u>

Shares outstanding	750,000
Book value per share ($\$1,100,000 \div 750,000$)	<u>\$1.47</u>

*Balance in retained earnings	
(\$800,000 – \$40,000 – \$260,000)	\$500,000
Less: Liquidating premium to preferred	(30,000)
Dividends to preferred	<u>(120,000)</u>
Available to common	<u>\$350,000</u>

TIME AND PURPOSE OF PROBLEMS

Problem 15-1 (Time 50-60 minutes)

Purpose—to provide the student with an understanding of the necessary entries to properly account for a corporation's stock transactions. This problem involves such concepts as stock sold for cash, noncash stock transactions, and declaration and distribution of stock dividends. The student is required to prepare the respective journal entries and the stockholders' equity section of the balance sheet to reflect these transactions.

Problem 15-2 (Time 25-35 minutes)

Purpose—to provide the student with an opportunity to record the acquisition of treasury stock and its sale at three different prices. In addition, a stockholders' equity section of the balance sheet must be prepared.

Problem 15-3 (Time 25-30 minutes)

Purpose—to provide the student with an opportunity to record seven different transactions involving stock issuances, reacquisitions, and dividend payments. Throughout the problem the student needs to keep track of the shares outstanding.

Problem 15-4 (Time 20-30 minutes)

Purpose—to provide the student with an understanding of the necessary entries to properly account for a corporation's stock transactions. This problem involves such concepts as a capital stock assessment, lump-sum sales of capital stock, and a noncash stock exchange. The student is required to prepare the journal entries to reflect these transactions.

Problem 15-5 (Time 30-40 minutes)

Purpose—to provide the student with an understanding of the proper entries to reflect the reacquisition, reissuance, and retirement of a corporation's shares of stock. The student is required to record these treasury stock transactions under the cost method, assuming the FIFO method for purchase and sale purposes.

Problem 15-6 (Time 30-40 minutes)

Purpose—to provide the student with an understanding of the necessary entries to properly account for a corporation's stock transactions. This problem involves such concepts as the reacquisition, reissuance, and retirement of shares of stock; plus a declaration and payment of a cash dividend. The student is required to prepare the respective journal entries and the stockholders' equity section of the balance sheet to reflect these transactions.

Problem 15-7 (Time 15-20 minutes)

Purpose—to provide the student with an understanding of the proper accounting for the declaration and payment of cash dividends on both preferred and common stock. This problem also involves a dividend arrearage on preferred stock, which will be satisfied by the issuance of shares of treasury stock. The student is required to prepare the necessary journal entries for the dividend declaration and payment, assuming that they occur simultaneously.

Problem 15-8 (Time 20-25 minutes)

Purpose—to provide the student with an understanding of the accounting effects related to the stock dividends and stock splits. The student is required to analyze their effect on total assets, common stock, paid in capital, retained earnings, and total stockholders' equity.

Problem 15-9 (Time 20-25 minutes)

Purpose—to provide the student with an understanding of the effect which a series of transactions involving such items as the issuance and reacquisition of common and preferred stock, the donation of a block of preferred stock which was immediately resold, and a retained earnings appropriation, have on the company's equity accounts. The student is required to prepare the stockholders' equity section of the balance sheet in proper form reflecting the above transactions.

Time and Purpose of Problems (Continued)

Problem 15-10 (Time 35-45 minutes)

Purpose—to provide the student with an understanding of the differences between a stock dividend and a stock split. Acting as a financial advisor to the Board of Directors, the student must report on each option and make a recommendation.

Problem 15-11 (Time 25-35 minutes)

Purpose—to provide the student with an understanding of the proper accounting for the declaration and payment of both a cash and stock dividend. The student is required to prepare both the necessary journal entries to record cash and stock dividends and the stockholders' equity section of the balance sheet, including a note to the financial statements setting forth the basis of the accounting for the stock dividend.

Problem 15-12 (Time 35-45 minutes)

Purpose—to provide the student a comprehensive problem involving all facets of the stockholders' equity section. The student must prepare the stockholders' equity section of the balance sheet, analyzing and classifying a dozen different transactions to come up with proper accounts and amounts. A good review of Chapter 15.

SOLUTIONS TO PROBLEMS

PROBLEM 15-1

(a)	January 11		
	Cash (20,000 X \$16)	320,000	
	Common Stock (\$20,000 X \$5)		100,000
	Paid-in Capital in Excess of Par—Common....		220,000
	February 1		
	Machinery	50,000	
	Factory Building	110,000	
	Land	270,000	
	Preferred Stock (\$4,000 X \$100)		400,000
	Paid-in Capital in Excess of Par—Preferred ...		30,000
	July 29		
	Treasury Stock (1,800 X \$19)	34,200	
	Cash		34,200
	August 10		
	Cash (1,800 X \$14)	25,200*	
	Retained Earnings (1,800 X \$5)	9,000*	
	Treasury Stock		34,200

*(The debit is made to Retained Earnings because no Paid-in Capital from Treasury Stock exists.)

PROBLEM 15-1 (Continued)

	December 31	
Retained Earnings	37,000	
Cash Dividend Payable—Common		5,000*
Cash Dividend Payable—Preferred		32,000**
*Common Stock Cash Dividend:		
Common shares outstanding	20,000	
Common cash dividend	<u>X \$.25</u>	
		<u>\$5,000</u>

** $(4,000 \times 100 \times 8\%)$

	December 31	
Income Summary	175,700	
Retained Earnings.....		175,700

(b) Stockholders' equity:

Preferred stock—par value \$100 per share, 8% cumulative and nonparticipating, 5,000 shares authorized, 4,000 shares issued and outstanding	\$400,000
Common stock—par value \$5 per share, 50,000 shares authorized, 20,000 issued and outstanding	100,000
Paid-in capital in excess of par—preferred	30,000
Paid-in capital in excess of par—common	<u>220,000</u>
Total paid-in capital	750,000
Retained earnings	<u>129,700*</u>
Total stockholders' equity	<u>\$879,700</u>

* $(\$175,700 - \$9,000 - \$37,000)$

PROBLEM 15-2

(a)	Feb.1	Treasury Stock (\$18 X 2,000).....	36,000	
		Cash		36,000
	Mar.1	Cash (\$17 X 800).....	13,600	
		Retained Earnings (\$1 X 800).....	800	
		Treasury Stock (\$18 X 800)		14,400
	Mar.18	Cash (\$14 X 500).....	7,000	
		Retained Earnings (\$4 X 500).....	2,000	
		Treasury Stock (\$18 X 500)		9,000
	Apr.22	Cash (\$20 X 600).....	12,000	
		Treasury Stock (\$18 X 600)		10,800
		Paid-in Capital from Treasury Stock		1,200

(b) **JODZ COMPANY**
Stockholders' Equity

Common stock, \$5 par value, 20,000 shares issued, 19,900 outstanding	\$100,000
Paid-in capital in excess of par—common	300,000
Paid-in capital from treasury stock	<u>1,200</u>
Total paid-in capital	401,200
Retained earnings	<u>427,200</u>
	828,400
Less: Treasury stock (100 shares)	<u>1,800</u>
Total stockholders' equity	<u>\$826,600</u>
Retained earnings (beginning balance)	\$320,000
March 1 reissuance	(800)
March 18 reissuance	(2,000)
Net income for period	<u>110,000</u>
Retained earnings (ending balance)	<u>\$427,200</u>
Treasury stock (beginning balance)	\$ 0
February 1 purchase (2,000 shares)	36,000
March 1 sale (800 shares)	(14,400)
March 18 sale (500 shares)	(9,000)
April 12 sale (600 shares)	<u>(10,800)</u>
Treasury stock (ending balance)	<u>\$ 1,800</u>

PROBLEM 15-3

AMADO COMPANY
Stockholders' Equity
December 31, 2003

Capital Stock

Preferred stock, \$20 par, 8%, 175,000 shares issued and outstanding	\$ 3,500,000
Common stock, \$2.50 par, 4,080,000 shares issued, 4,060,000 shares outstanding	<u>10,200,000</u>
Total capital stock	<u>13,700,000</u>

Additional paid-in capital

Excess over par—preferred	\$ 250,000	
Excess over par—common	27,600,000	
From treasury stock transactions	<u>20,000</u>	<u>27,870,000</u>
Total paid-in capital		41,570,000
Retained earnings		<u>4,290,000</u>
Total paid-in capital and retained earnings		45,860,000
Less cost of treasury stock (20,000 shares common)		<u>(180,000)</u>
Total stockholders' equity		<u>\$45,680,000</u>

Preferred Stock

	Bal.	3,000,000	
	1.	500,000	
		<u>3,500,000</u>	

Paid-in Capital—Common

	Bal.	27,000,000	
	4.	600,000	
		<u>27,600,000</u>	

PROBLEM 15-3 (Continued)

Common Stock

	Bal.	10,000,000
	3.	200,000
		<u>10,200,000</u>

Retained Earnings

	Bal.	4,500,000
9.	280,000	8. 2,100,000
10.	2,030,000	
		<u>4,290,000</u>

Paid-in Capital—Preferred

	Bal.	200,000
	2.	50,000
		<u>250,000</u>

Treasury Stock

5.	270,000	6.	90,000
	<u>180,000</u>		

Paid-in Capital—Treasury Stock

	7.	20,000
		<u>20,000</u>

1. Jan. 1 25,000 X \$20
2. Jan. 1 25,000 X \$2
3. Feb. 1 40,000 X \$5
4. Feb. 1 40,000 X \$15
5. July 1 30,000 X \$9
6. Sept. 15 10,000 X \$9
7. Sept. 15 10,000 X \$2
8. Dec. 31 Net income
9. Dec. 31 3,500,000 X 8%
10. Dec. 31 4,060,000 X 50¢

PROBLEM 15-4

-1-

Cash	10,000	
Discount on Bonds Payable	106	
Bonds Payable		10,000
Preferred Stock		50
Paid-in Capital in Excess of Par—Preferred Stock (\$106 – \$50).....		56

-2-

Machinery	7,500	
Common Stock.....		5,000
Paid-in Capital in Excess of Par—Common Stock		2,500

(Assuming the stock is regularly traded, the value of the stock would be used.)

-3-

Cash	11,300	
Preferred Stock		5,000
Paid-in Capital in Excess of Par—Preferred Stock (\$6,251 – \$5,000).....		1,251
Common Stock.....		3,750
Paid-in Capital in Excess of Par—Common Stock (\$5,049 – \$3,750).....		1,299
Fair market value of common (375 X \$14)	\$ 5,250	
Fair market value of preferred (100 X \$65)	<u>6,500</u>	
Aggregate	<u>\$11,750</u>	

Allocated to common: $\frac{\$5,250}{\$11,750} \times \$11,300 = \$ 5,049$

Allocated to preferred: $\frac{\$6,500}{\$11,750} \times \$11,300 = \underline{\underline{6,251}}$

Total allocation \$11,300

PROBLEM 15-4 (Continued)

-4-

Furniture and Fixtures	6,200	
Preferred Stock		2,500
Paid-in Capital in Excess of Par—Preferred Stock (\$3,000 – \$2,500).....		500
Common Stock		2,000
Paid-in Capital in Excess of Par—Common Stock (\$3,200 – \$2,000).....		1,200
Fair market value of furniture and equipment	\$6,200	
Less: Market value of common stock	<u>3,200</u>	
Total value assigned to preferred stock	<u>\$3,000</u>	

PROBLEM 15-5

(a)	Treasury Stock (380 X \$39).....	14,820	
	Cash.....		14,820
(b)	Treasury Stock (300 X \$43).....	12,900	
	Cash.....		12,900
(c)	Cash (350 X \$42).....	14,700	
	Treasury Stock (350 X \$39)		13,650
	Paid-in Capital from Treasury Stock		1,050
	(350 X \$3)		
(d)	Cash (120 X \$38).....	4,560	
	Paid-in Capital from Treasury Stock	480	
	Treasury Stock		5,040
	(30 shares purchased at \$39 = \$1,170		
	90 shares purchased at \$43 = <u>3,870</u>		
	Cost of treasury shares		
	 sold using FIFO	= <u>(\$5,040)</u>	

PROBLEM 15-6

(a)		-1-	
	Treasury Stock (240 X \$97).....		23,280
	Cash.....		23,280
		-2-	
	Retained Earnings.....		91,200
	Dividends Payable.....		91,200
	[(4,800 – 240) X \$20 = \$91,200]		
		-3-	
	Dividends Payable.....		91,200
	Cash		91,200
		-4-	
	Cash (240 X \$102)		24,480
	Treasury Stock.....		23,280
	Paid-in Capital from Treasury Stock (240 X \$5).		1,200
		-5-	
	Treasury Stock (500 X \$96).....		51,500
	Cash		51,500
		-6-	
	Cash (330 X \$96)		31,680
	Paid-in Capital from Treasury Stock.....		1,200
	Retained Earnings		1,110
	Treasury Stock (330 X \$103).....		33,990
(b)	Stockholders' equity		
	Common stock, \$100 par value, authorized 8,000 shares; issued 4,800 shares, 4,630 shares outstanding		\$480,000
	Retained earnings (restricted in the amount of \$17,510 by the acquisition of treasury stock)		<u>295,690</u>
			775,690
	Less: Treasury stock (170 shares)		<u>17,510</u>
	Total stockholders' equity		<u>\$758,180</u>

PROBLEM 15-7

(a) For Preferred dividends in arrears:

Retained Earnings	12,000	
Treasury Stock		12,000*

	<u>Shares</u>	
*Preferred stock outstanding—\$50 par	15,000	
$15,000 \div 10 = 1,500$ shares of treasury stock issued as dividend		
$\$33,600 \div 4,200$ shares = \$8		
$1,500 \times \$8 = \$12,000$		

For 6% preferred current year dividend:

Retained Earnings	45,000	
Cash		45,000*
*(6% X \$750,000)		

For \$.30 per share common dividend:

Retained Earnings	89,190	
Cash		89,190*

*Since all preferred dividends must be paid before the common dividend, outstanding common shares include—

As of Dec. 31, 2003 (300,000 – 4,200)	295,800	shares
Preferred distribution—1 common share for every 10 preferred shares	<u>1,500</u>	shares
	297,300	shares
Common dividend	<u>.30</u>	/share
Amount of common cash dividend	<u>\$ 89,190</u>	

(b) The suggested cash dividend could be paid only if state law did not restrict the retained earnings balance in the amount of the cost of treasury stock. Total dividends would be \$178,740,* which is adequately covered by the cash balance. The retained earnings balance, after adding the 2004 net income (estimated at \$77,000), is sufficient to cover the dividends.**

PROBLEM 15-7 (Continued)

*Preferred dividends in arrears (6% X \$750,000)	\$ 45,000
Current preferred dividend (6% X \$750,000)	45,000
Common dividend (\$.30 X 295,800)	<u>88,740</u>
Total cash dividend	<u>\$178,740</u>
**Beginning balance	\$105,000
Estimated net income	<u>77,000</u>
Total balance available	182,000
If restricted by cost of treasury shares	<u>(33,600)</u>
Available to pay dividends	<u>\$148,400</u>

PROBLEM 15-8

Transactions:

- (a) Assuming Gutsy Co. declares and pays a \$.50 per share cash dividend.
- (1) Total assets—decrease \$5,000 [$(\$20,000 \div \$2) \times .50$]
 - (2) Common stock—no effect
 - (3) Paid-in capital in excess of par—no effect
 - (4) Retained earnings—decrease \$5,000
 - (5) Total stockholders' equity—decrease \$5,000
- (b) Gutsy declares and issues a 10% stock dividend when the market price of the stock is \$14.
- (1) Total assets—no effect
 - (2) Common stock—increase \$2,000 $(10,000 \times 10\%) \times \2
 - (3) Paid-in capital in excess of par—increase \$12,000 $(1,000 \times \$14) - \$2,000$
 - (4) Retained earnings—decrease \$14,000 $(\$14 \times 1,000)$
 - (5) Total stockholders' equity—no effect
- (c) Gutsy declares and issues a 40% stock dividend when the market price of the stock is \$15 per share.
- (1) Total assets—no effect
 - (2) Common stock—increase \$8,000 $(10,000 \times 40\%) \times \2
 - (3) Paid-in capital in excess of par—no effect
 - (4) Retained earnings—decrease \$8,000
 - (5) Total stockholders' equity—no effect
- (d) Gutsy declares and distributes a property dividend
- (1) Total assets—decrease \$30,000 $(5,000 \times \$6)$
 - (2) Common stock—no effect
 - (3) Paid-in capital in excess of par—no effect
 - (4) Retained earnings—decrease \$30,000
 - (5) Total stockholders' equity—decrease \$30,000

PROBLEM 15-8 (Continued)

Note:

The journal entries made for the above transaction are:

Investments in ABC stock (\$10 – \$6) X 5,000	20,000	
Gain in appreciation of securities		20,000
(To record increase in value of securities to be issued)		

Retained Earnings (\$10 X 5,000)	50,000	
Investment in ABC stock.....		50,000
(To record distribution of property dividend)		

(e) Gutsy declares a 2-for-1 stock split

- (1) Total assets—no effect
- (2) Common stock—no effect
- (3) Paid-in capital in excess of par—no effect
- (4) Retained earnings—no effect
- (5) Total stockholders' equity—no effect

PROBLEM 15-9

Jadzia Dax Corporation
STOCKHOLDERS' EQUITY
December 31, 2003

Paid-in Capital:

Preferred stock, \$100 par value

**10,000 shares authorized, 4,000 shares
issued & outstanding** **\$400,000**

Common stock, \$50 par value

**15,000 shares authorized,
8,000 shares issued 7,700 shares
outstanding** **400,000 \$ 800,000**

Additional Paid-in Capital:

**Paid-in capital in excess of par—
preferred** **52,000**

**Paid-in capital in excess of par—
common** **61,000**

**Paid-in capital from treasury stock—
preferred** **4,700 117,700**

Total Paid-in Capital **917,700**

Retained Earnings: **235,400***

1,153,100

Less cost of treasury stock

(300 shares—common) **19,800**

Total Stockholders' Equity **\$1,133,300**

***\$610,000 – \$312,600 – (\$62 X 1,000 shares)**

PROBLEM 15-10

To: Jenny Durdil Board of Directors
From: Good Student, Financial Advisor
Date: Today
Subject: Report on the effects of a stock dividend and a stock split

INTRODUCTION

As financial advisor to the Board of Directors for Jenny Durdil, I have been asked to report on the effects of the following options for creating interest in Jenny Durdil stock: a 20% stock dividend, a 100% stock dividend, and a 2-for-1 stock split. The board wishes to maintain stockholders' equity as it presently appears on the most recent balance sheet. The Board also wishes to generate interest in stock purchases, and the current market value of the stock (\$120 per share) may be discouraging potential investors. Finally, the Board thinks that a cash dividend at this point would be unwise.

RECOMMENDATION

In order to meet the needs of Jenny Durdil Inc., the board should choose a 2-for-1 stock split. The stock split is the only option which would not change the stockholders' equity section of the company's balance sheet.

DISCUSSION OF OPTIONS

The three above-mentioned options would all result in an increased number of common shares outstanding. Because the shares would be distributed on a pro rata basis to current stockholders, each stockholder of record would maintain his/her proportion of ownership after the declaration. All three options would probably generate significant interest in the stock.

PROBLEM 15-10 (Continued)

A 20% STOCK DIVIDEND

This option would increase the shares outstanding by 20 percent, which translates into 1,000,000 additional shares of \$10 par value common stock.

The problem with this type of stock dividend is that GAAP requires these shares to be accounted for at their current market value if it significantly exceeds par.

The following journal entry must be made to record this dividend.

Retained Earnings (\$120 X 1,000,000)	120,000,000	
Common Stock Dividend Distributable		10,000,000
Paid in Capital in Excess of Par		110,000,000

Although the Common Stock Dividend Distributable and the Paid in Capital accounts increase, Retained Earnings decreases dramatically. This reduction in Retained Earnings may hinder Jenny Durdil's success with the subsequent stock offer.

A 100% STOCK DIVIDEND

This option would double the number of \$10 par value common stock currently issued and outstanding. Because this type of dividend is considered, in substance, a stock split, the shares do not have to be accounted for at market value. Instead, Retained Earnings is reduced only by the par value of the additional shares, while Common Stock Dividend Distributable and, later, Common Stock are increased for that same amount. However, when 5,000,000 shares are already issued and outstanding, the reduction in Retained Earnings reflecting the stock dividend is still great: \$50,000,000. In addition, no increase in any Paid in Capital account occurs.

The following journal entry would be made to record the declaration of this dividend:

Retained Earnings (\$10 X 5,000,000).....	50,000,000	
Common Stock Dividend Distributable		50,000,000

PROBLEM 15-10 (Continued)

A 2-FOR-1 STOCK SPLIT

This option doubles the number of shares issued and outstanding; however, it also cuts the par value per share in half. No accounting treatment beyond a memorandum entry is required for the split because the effect of splitting the par value cancels out the effect of doubling the number of shares. Therefore, Retained Earnings remains unchanged as does the Common Stock and Paid in Capital Accounts. In addition, the lower par value along with the decreased market value will encourage investors who might otherwise consider the stock too expensive.

CONCLUSION

To generate the greatest interest in Jenny Durdil stock while maintaining the present Stockholders' Equity section of the balance sheet, you should opt for the 2-for-1 stock split.

PROBLEM 15-11

(a)	Retained Earnings	1,200,000	
	Cash		1,200,000
	(Cash dividend of \$.60 per share on 2,000,000 shares)		
(b)	Retained Earnings	4,200,000	
	Common Stock (120,000 X \$10).....		1,200,000
	Additional Paid-in Capital in Excess of Par ...		3,000,000
	(Stock dividend of 6%, 120,000 shares, at \$35 per share)		
(c)	STOCKHOLDERS' EQUITY		
	Common stock—\$10 par value		
	Issued 2,120,000 shares	\$21,200,000	
	Additional paid-in capital	8,000,000	
	Retained earnings	<u>24,300,000</u>	
	Total stockholders' equity		<u>\$53,500,000</u>

**Statement of Retained Earnings
For the Year Ended December 31, 2003**

Balance, January 1, 2003		\$24,000,000
Net income for 2003		<u>5,700,000</u>
		29,700,000
Deduct dividends on common stock:		
Cash	\$1,200,000	
Stock (see note)	<u>4,200,000</u>	<u>5,400,000</u>
Balance December 31, 2003		<u>\$24,300,000</u>

**Schedule of Additional Paid-in Capital
For the Year Ended December 31, 2003**

Balance January 1, 2003		\$5,000,000
Excess of fair value over par value of 120,000 shares of common stock distributed as a dividend (see note)		<u>3,000,000</u>
Balance December 31, 2003		<u>\$8,000,000</u>

PROBLEM 15-11 (Continued)

Note: The 6% stock dividend (120,000 shares) was distributed to stockholders of record at the close of business on December 31, 2003. For the purposes of the dividend, the stock was assigned an average price of \$35 per share based upon the average quoted market price over a short period preceding the dividend date. The par value of \$10 per share (\$1,200,000) was credited to Common Stock and the excess of \$25 (\$35 – \$10) per share (\$3,000,000) to Additional Paid-in Capital.

Average market price has been chosen to eliminate the chance that any one day's market price might have been affected by some unusual circumstances.

The use of the average market price is a judgment call. The problem does provide an opportunity to emphasize to students that some flexibility exists in GAAP rules, and that judgment often plays an important part in the final answer.

PROBLEM 15-12

The requirement is to prepare the stockholders' equity section of Ohio Company's June 30, 2003, balance sheet.

Note that the Ohio Company is authorized to issue 300,000 shares of \$10 par value common and 100,000 shares of \$25 par value, cumulative and nonparticipating preferred.

At the beginning of the year, Ohio had 110,000 common shares outstanding, of which 95,000 shares were issued at \$31 per share, resulting in \$950,000 (95,000 shares at \$10) of common stock and \$1,995,000 of additional paid-in capital on common stock (95,000 shares at \$21). The 5,000 shares exchanged for a plot of land would be recorded at \$50,000 of common stock and \$170,000 of paid-in capital (use the current market value of the land on July 24 to value the stock issuance). The 10,000 shares issued in 2000 at \$42 a share resulted in \$100,000 of common stock and \$320,000 of paid-in capital.

The 2,000 shares of treasury stock purchased resulted in a debit balance of treasury stock of \$78,000. Later, 500 shares were sold at \$21,000, which brings the balance down to \$58,500 (1,500 shares at \$39 per share).

The gain on treasury shares (\$21,000 minus \$19,500 cost) is recorded in a separate paid-in capital amount. The 5% stock dividend on January 15 resulted in an increase of 5,400 shares. Recall that there were 110,000 shares outstanding at the beginning of the year. The purchase of 2,000 treasury shares occurred before the stock dividend, bringing the number of shares outstanding at the time of the dividend (December 2002) to 108,000 shares. The resale of 500 treasury shares occurred after the stock dividend.

The issuance of 50,000 shares of preferred at \$44 resulted in \$1,250,000 (50,000 shares at \$25) of preferred stock outstanding and \$950,000 (50,000 shares at \$19) of paid-in capital on preferred. The cash dividends only affect the retained earnings. Note that the preferred stock is in arrears for the dividends that should have been declared in June, 2003. Ending retained earnings is the beginning balance of \$690,000 plus net income of \$40,000, less the preferred dividend of \$50,000 and the common stock dividend of \$280,800 (5,400 shares at \$52), resulting in an ending balance of \$399,200.

PROBLEM 15-12 (Continued)

**Ohio Company
Stockholders' Equity
June 30, 2003**

Capital stock

**8% preferred stock, \$25 par value,
cumulative and nonparticipating,
100,000 shares authorized, 50,000
shares issued and outstanding—Note A** **\$1,250,000**

**Common stock, \$10 par value, 200,000
shares authorized, 115,400 shares
issued with 1,500 shares held in the
treasury** **\$1,154,000**

Additional paid-in capital

On preferred stock	950,000	
On common stock	2,711,800*	
On treasury stock	<u>1,500</u>	<u>3,663,300</u>

Total paid-in capital **6,067,300**

Retained earnings **399,200**

Total paid-in capital and retained earnings **6,466,500**

Less: Treasury stock, 1,500 shares at cost **58,500**

Total stockholders' equity **\$6,408,000**

Note A: Ohio Company is in arrears on the preferred stock in the amount of \$50,000.

***Additional Paid-In Capital on Common Stock:**

Issue of 95,000 shares X (\$31 – \$10)	\$1,995,000	
Plot of land	170,000	
Issue of 10,000 shares (3/1/00) [10,000 X (\$42 – \$10)]	320,000	
5,400 shares as dividend [5,400 X (\$52 – \$10)]	<u>226,800</u>	
	<u>\$2,711,800</u>	

TIME AND PURPOSE OF CASES

Case 15-1 (Time 10-20 minutes)

Purpose—to provide the student with some familiarity with the applications of the capital stock share system. This case requires the student to analyze the concept dealing with the dilution of ownership interest and the establishment of any necessary corrective actions to compensate an existing stockholder for this dilution effect.

Case 15-2 (Time 15-20 minutes)

Purpose—to provide the student with an opportunity to discuss the bases for recording the issuance of stock in exchange for nonmonetary assets.

Case 15-3 (Time 25-30 minutes)

Purpose—to provide a five-part theory case on equity based on Statement of Financial Accounting Concepts No. 6. It requires defining terms and analyzing the effects of equity transactions on financial statement elements.

Case 15-4 (Time 25-30 minutes)

Purpose—to provide the student with an understanding of the conceptual framework which underlies a stock dividend and a stock split. The student is required to explain what a stock dividend is, the amount of retained earnings to be capitalized in connection with a stock dividend, and how it differs from a stock split both from a legal standpoint and an accounting standpoint. This case also requires an explanation of the various reasons why a corporation declares a stock dividend or a stock split.

Case 15-5 (Time 15-20 minutes)

Purpose—to provide the student with an understanding of the theoretical concepts and implications that underlie the issuance of a stock dividend. The student is required to discuss the arguments against either considering the stock dividend as income to the recipient or issuing stock dividends on treasury shares.

Case 15-6 (Time 20-25 minutes)

Purpose—to provide the student with a situation containing a cash dividend declaration, a stock dividend, and a reacquisition and reissuance of shares requiring the student to explain the accounting treatment.

Case 15-7 (Time 10-15 minutes)

Purpose—to provide an opportunity for the student to consider and discuss the ethical issues involved when the control of a corporation is at stake. The student should recognize the potential conflict between the CEO's personal will and the responsibility and accountability the CEO has to the stockholders.

SOLUTIONS TO CASES

CASE 15-1

- (a) To share proportionately in any new issues of stock of the same class (the preemptive right).
- (b) Eduardo Alvarado bought an additional \$100,000 par value stock. His original ownership was \$200,000 ($\$250,000 \times 80\%$). Thus he increased his ownership by $100/200$ (50%). This imbalance can be corrected by issuing to Ms. Jones, at par, shares equal to 50% of her present holdings of \$25,000 or stock with a par value of \$12,500. Other stockholders should also be offered the right to purchase shares equal to 50% of their holdings in order that all stockholders may retain the same proportionate interest as before the issuance of additional shares.
- (c) Because no information is given with respect to the market value of the stock and with respect to the future earning power of the stock, the book value necessarily will have to be used for the computation of the amount of the cash settlement.

Book value of Ms. Jones' capital stock, June 30, 2003, before issuance of additional shares, $25/250 \times \$422,000$	\$42,200
Book value after issuance of additional shares to Eduardo Alvarado, $25/350 \times \$522,000$	<u>37,286</u>
Loss in book value and amount of cash settlement	<u>\$ 4,914</u>

CASE 15-2

- (a) The general rule to be applied when stock is issued for services or property other than cash is that the property or services be recorded at either their fair market value or the fair market value of the stock issued, whichever is more clearly determinable.
- (b) If the fair market value of the land is readily determinable, it is used as a basis for recording the exchange. The fair market value could be determined by observing the cash sales price of similar pieces of property or through independent appraisals.
- (c) If the fair market value of the land is not readily determinable, but the fair market value of the stock issued is determinable, the fair market value of the stock is used as a basis for recording the exchange. If the stock is traded on a stock exchange, the fair market value can be determined from that day's cash sales of the stock. If the stock is traded over the counter, recent sales or bids can be used to estimate fair market value.
- (d) If the Corporation intentionally records this transaction at an amount greater than fair market value, both assets and stockholders' equity will be overstated. This overvaluation of stockholders' equity from the inflated asset value is referred to as watered stock. This excess can be eliminated by writing down the overvalued assets with a corresponding charge to the appropriate paid-in capital accounts.

CASE 15-3

- (a) Equity, or net assets, is the owners' residual interest in the assets of an entity that remains after deducting liabilities; in other words, equity equals assets less liabilities. Assets are probable future economic benefits controlled by a particular entity as the result of past transactions or events, and liabilities are probable future sacrifices of economic benefits arising from present obligations of a particular entity which result from past transactions or events; therefore equity can be defined as future economic benefits which will **not** be sacrificed to satisfy present obligations.

CASE 15-3 (Continued)

(b) Transactions or events that change owners' equity include revenues and expenses, gains and losses, investments by owners, distributions to owners, and changes within owners' equity.

(c) Investments by owners are increases in net assets resulting from transfers by other entities of something of value to obtain ownership. Examples of investments by owners are issuance of preferred or common stock, conversion of convertible bonds, reissuance of treasury stock, assessments on stock, and issuance of stock warrants. Generally, investments by owners cause an increase in assets in addition to the increase in equity.

(d) Distribution to owners are decreases in net assets resulting from transferring assets to owners, rendering services for owners or incurring liabilities to owners. Examples of distributions to owners are cash or property dividends and purchase of treasury stock. Dividends generally initially cause an increase in liabilities but eventually cause a decrease in assets in addition to the decrease in equity. The purchase of treasury stock causes a decrease in assets in addition to the decrease in equity.

(e) Some examples of changes within owners' equity that do not change the total amount of owners' equity are retirement of treasury stock, quasi-reorganization (except revaluing of assets), conversion of preferred stock into common stock, stock dividends, and retained earnings appropriations.

CASE 15-4

(a) A stock dividend is the issuance by a corporation of its own stock to its stockholders on a prorata basis without receiving payment therefor. The stock dividend results in an increase in the amount of the legal or stated capital of the enterprise. The dividend may be charged to retained earnings or to any other capital account that is not a part of legal capital.

- (1) From the legal standpoint a stock split is distinguished from a stock dividend in that a split results in an increase in the number of shares outstanding and a corresponding decrease in the par or stated value per share. A stock dividend, though it results in an increase in the number of shares outstanding, does not result in a decrease in the par or stated value of the shares.
- (2) The major distinction is that a stock dividend requires a journal entry to decrease retained earnings and increase paid-in capital, while there is no entry for a stock split. Also, from the accounting standpoint the distinction between a stock dividend and a stock split is dependent upon the intent of the board of directors in making the declaration. If the intent is to give to stockholders some separate evidence of a part of their prorata interests in accumulated corporate earnings, the action results in a stock dividend. If the intent is to issue enough shares to reduce the market price per share of the stock, the action results in a stock split, regardless of the form it may take. In other words, if the action takes the form of a stock dividend but reduces the market price markedly, it should be considered a stock split. Such reduction will seldom occur unless the number of shares issued is at least 20% to 25% of the number previously outstanding.

(b) The usual reason for issuing a stock dividend is to give the stockholders something on a dividend date and yet conserve working capital.

A stock dividend that is charged to retained earnings reduces the total accumulated earnings, and all stock dividends reduce the per share earnings. Issuing a stock dividend to achieve these ends would be a public relations gesture in that the public would be less likely to criticize the corporation for high profits or undue retention of earnings.

A stock dividend also may be issued for the purpose of obtaining a wider distribution of the stock. Although this is the main consideration in a stock split, it may be a secondary consideration in the issuance of a stock dividend. The issuance of a series of stock dividends will accomplish the same objective as a stock split.

CASE 15-4 (Continued)

A stock split is intended to obtain wider distribution and improved marketability of shares by means of a reduction in the market value of the company's shares.

(c) The amount of retained earnings to be capitalized in connection with a stock dividend (in the accounting sense) might be (1) the legal minimum (usually par or stated value), (2) the average paid-in capital per outstanding share, or (3) the market value of the shares.

The third basis is generally recommended on the grounds that recipients tend to regard the market value of the stock received as a dividend as the amount of earnings distributed to them. If the corporation in such cases does not capitalize an amount equal to the fair value of the shares distributed as a dividend, there is left in the corporation's retained earnings account an amount of earnings that the stockholders believe has been distributed to them. This amount would be subject to further stock dividends or to cash dividends. The recipients might thus be misled into believing that the company's distributions—and earnings—are greater than they actually are.

If the per share market value of the stock is materially reduced as a result of a distribution (usually 20%-25% of shares outstanding or more), no matter what form the distribution takes, the action is in substance a stock split and should be so designated and treated to the extent required by legal considerations.

CASE 15-5

(a) The case against treating an ordinary stock dividend as income is supported by a majority of accounting authorities. It is based upon "entity" and "proprietary" interpretations.

If the corporation is considered an entity separate from stockholders, the income of the corporation is corporate income and not income to stockholders, although the equity of the stockholders in the corporation increases as income to the corporation increases. This position is consistent with the interpretation that a dividend is not income to the recipient until it is realized as a result of a division, distribution, or severance of corporate assets. The stock dividend received merely redistributes each stockholder's equity over a large number of shares. Selling the stock dividend under this interpretation has the effect of reducing the recipient's proportionate share of the corporation's equity.

A similar position is based upon a "proprietary" interpretation. Income of the corporation is considered income to the owners and, hence, stock dividends represent only a reclassification of equity since there is no increase in total proprietorship.

(b) The case against issuing stock dividends on treasury stock rests principally upon the argument that stock reacquired by the corporation is a "reduction of capital" through the payment of cash to reduce the number of outstanding shares. According to this view, the corporation cannot obtain a proprietary interest in itself when it reacquires its own stock. The retained earnings are considered divisible only among the owners of outstanding shares and only the outstanding shares are entitled to a stock dividend. In those states that permit treasury shares to participate in the distribution accompanying a stock dividend or stock split, practice is influenced by the planned use of the treasury shares (such as, the issuance of treasury shares in connection with employee stock options). Unless there are specific uses for the treasury stock, no useful purpose is served by issuing additional shares to treasury.

CASE 15-6

(a) Hsuchou Company should account for the purchase of the treasury stock on August 15, 2003, by debiting Treasury Stock and crediting Cash for the cost of the purchase (1,000 shares X \$16 per share). Hsuchou should account for the sale of the treasury stock on September 14, 2003, by debiting

CASE 15-6 (Continued)

Cash for the selling price (500 shares X \$20 per share), crediting Treasury Stock for cost (500 shares X \$16 per share), and crediting additional Paid-in Capital from Treasury Stock Transactions for the excess of the selling price over the cost (500 shares X \$4 per share). The remaining treasury stock (500 shares X \$16 per share) should be presented separately in the stockholders' equity section of Hsuchou's December 31, 2003, balance sheet as an unallocated reduction of stockholders' equity. These shares are considered issued but not part of common stock outstanding.

(b) Hsuchou should account for the stock dividend by debiting Retained Earnings for \$21 per share (the market value of the stock in October 2003, the date of the stock dividend) multiplied by the 1,950 shares distributed. Hsuchou should then credit Common Stock for the par value of the common stock (\$10 per share) multiplied by the 1,950 shares distributed, and credit Additional Paid-In Capital for the excess of the market value (\$21 per share) over the par value (\$10 per share) multiplied by the 1,950 shares distributed. Total stockholders' equity does not change, but, because this is considered a small stock dividend, recognition has been made of capitalization of retained earnings equivalent to the market value of the additional shares resulting from the stock dividend.

(c) Hsuchou should account for the cash dividend on December 20, 2003, the declaration date, by debiting Retained Earnings and crediting Cash Dividends payable for \$1 per share multiplied by the number of shares outstanding 21,450. A cash dividend is a distribution to the corporation's stockholders. The liability for this distribution is incurred on the declaration date, and it is a current liability because it is payable within one year (January 10, 2004). The effect of the cash dividend on Hsuchou's balance sheet at December 31, 2003, is an increase in current liabilities and a decrease in retained earnings.

CASE 15-7

- (a) The stakeholders are the dissident stockholders, the other stockholders, potential investors, and Loptien.
- (b) The ethical issues are honesty, job security, and personal responsibility to others.
- (c) It is important for Loptien to consider what is good for the corporation, not just for her (in finance terminology, an *agency issue*). Loptien should consider the following questions: (1) Are there better uses for the cash? (2) Can she possibly win over the dissidents in some other way? (3) Would this buyout be in the long-term best interest of all parties?

FINANCIAL REPORTING PROBLEM

- (a) 3M has no preferred stock at December 31, 2001.
- (b) 3M's common stock has par value of \$.01 per share. Like many companies, the par value of 3M's common stock is small relative to its market value.
- (c) At the end of 2001, 3M had 472,016,528 shares of common stock issued. This represents 31.47 percent ($472,016,528/1.5$ billion) of 3M's authorized common stock.
- (d) At December 31, 2001 and December 31, 2000, 3M had 391,303,636 and 396,085,348 shares of common stock outstanding, respectively.
- (e) 3M declared a cash dividend of \$2.40 per share in 2001. This cash dividend caused 3M's Retained Earnings to decrease by \$948,000,000.
- (f) Return on common stock equity:
- 2001: $\$1,430/[\$6,289 + \$6,531]/2] = 22.3\%$
- 2000: $\$1,782/[\$6,531 + \$6,086]/2] = 28.2\%$
- (g) Payout ratio:
- 2001: $\$948/\$1,430 = 66.3\%$
- 2000: $\$918/\$1,782 = 51.5\%$
- (h) Price range for the quarter ended December 31, 2001:
- High—\$121.90
Low—\$95.20

FINANCIAL STATEMENT ANALYSIS CASES

CASE 1

- (a) Management might purchase treasury stock to provide to stockholders a tax-efficient method for receiving cash from the corporation. In addition, it might have to repurchase shares to have them available to issue to people exercising options to purchase stock, or management might purchase treasury stock because it feels that its stock price is too low. It may believe that by purchasing shares it is signalling to the market that the price is too low. Management might also use excess cash to purchase stock to ward off a hostile takeover. Finally, management might purchase stock in an effort to change its capital structure. If it purchases stock and issues debt (or at least does not retire debt), it will increase the percentage of debt in its capital structure.
- (b) Earnings per share is calculated by dividing net income by the weighted average number of shares outstanding during the year.

If shares are reduced by treasury stock purchases, the denominator (weighted average number of shares outstanding) is reduced. As a result, earnings per share is often increased.

- (c) One measure of solvency is the ratio of debt divided by total assets. This ratio shows how many dollars of assets are backing up each dollar of debt, should the company become financially troubled. For 2001 and 2000, this can be calculated as follows:

<u>2001</u>	<u>2000</u>
$(\$9,497 \div \$10,369) = .92$	$(\$4,349 \div \$4,886) = .89$

This represents an increase in the ratio of debt to assets. It may be determined that Kellogg's solvency is still at an acceptable level, but it should definitely be watched. A ratio of debt to assets ratio of 92% means that Kellogg is highly leveraged and that its financial flexibility is lessened.

FINANCIAL STATEMENT ANALYSIS CASES

CASE 2

- (a) The date of record marks the time when ownership of the outstanding shares is determined for dividend purposes. This date is also used when a stock split occurs. The date of distribution is when the additional shares are distributed to stockholders.**
- (b) The purpose of a stock split is to increase the marketability of the stock by lowering its market value per share. This in turn makes it easier for the corporation to issue additional shares of stock.**
- (c) The effects are (1) no effect, (2) no effect, (3) increase, and (4) decrease.**

COMPARATIVE ANALYSIS CASE

(a) Par value:

Coca-Cola, \$.25 per share.

PepsiCo, $1\frac{2}{3}\text{¢}$ per share.

(b) Percentage of authorized shares issued:

Coca-Cola, $3,491,465,016 \div 5,600,000,000 = 62.35\%$.

PepsiCo, $1,782,000,000 \div 3,600,000,000 = 49.5\%$.

(c) Treasury shares, year-end 2001:

Coca-Cola, 1,005,237,693 shares.

PepsiCo, 26,000,000 shares.

(d) Common or capital stock shares outstanding, year-end 2001:

Coca-Cola, $3,491,465,016 - 1,005,237,693 = 2,486,227,323$.

PepsiCo, $1,782,000,000 - 26,000,000 = 1,756,000,000$.

(e) Coca-Cola declared cash dividends of \$.72 per share in 2001. This dividend reduced retained earnings by \$1,791,000,000.

PepsiCo declared cash dividends of \$.575 per share in 2001. This dividend reduced retained earnings by \$1,005,000,000.

(f) Rate of return on common stock equity.

2001:

$$\text{Coca-Cola, } \frac{\$3,969}{\frac{\$11,366 + \$9,316}{2}} = 38.4\%$$

$$\text{PepsiCo, } \frac{\$2,662}{\frac{\$8,648 + \$7,604}{2}} = 32.8\%$$

COMPARATIVE ANALYSIS CASE (Continued)

2000:

$$\text{Coca-Cola, } \frac{\$2,177}{\frac{\$9,316 + \$9,513}{2}} = 23.1\%$$

$$\text{PepsiCo, } \frac{\$2,543}{\frac{\$7,604 + \$7,078}{2}} = 34.6\%$$

During 2001, Coca-Cola earned a higher return on its stockholders' equity, but in 2000, PepsiCo earned a higher return on its stockholders' equity.

(g) Payout ratios for 2001.

$$\text{Coca-Cola, } \frac{\$1,791}{\$3,969} = 45.1\%$$

$$\text{PepsiCo, } \frac{\$1,005}{\$2,662 - \$4^*} = 37.8\%$$

*Preferred dividends.

(h) Market price range of stock during the fourth quarter of 2001:

Coca-Cola, High \$50.45
 Low \$44.01

PepsiCo, High \$50.46
 Low \$45.76

2001 stock price decrease:

Coca-Cola (from \$60.94 to \$47.15) –22.63%

PepsiCo (from \$49.56 to \$49.05) –1.03%

RESEARCH CASE

- (a) **AT&T is doing a reverse stock split to increase its stock price. In 1999 its stock was at \$60, and recently has dropped to \$15. There is concern that it will drop into single digits. The reason the company is employing a reverse stock split is to attract investors who often don't like to invest in companies with a single-digit stock price. Also AT&T does not want to be thought of as a \$5 stock. In addition, its stock outstanding has ballooned to 3.5 billion and it believes a lower amount outstanding would be more appropriate.**
- (b) **Reverse stock splits are seen as a sign of weakness because they are often used to artificially increase the price of the stock. However, total capitalization does not change. Some analysts, for example, indicate the company is looking to financial engineering to help achieve what its own management team cannot: a healthy stock price.**

A reverse stock split is not recorded formally with accounts. Common stock, paid in capital or retained earnings is not affected by the reverse stock split.

- (c) **Share buybacks are considered a sign of strength because the company has decided that its shares are undervalued and therefore it makes sense to purchase their own shares. In addition, the purchasing of the company's own stock creates a more active market for the company's stock. In addition, the purchase of treasury stock reduces shares outstanding which may lead to an increase in earnings per share. Share buybacks are recorded as a debit to Treasury Stock and a credit to Cash. The treasury stock is reported in the stockholders' equity section as a deduction from total stockholders' equity.**
- (d) **While AT&T's move may prove successful, history shows that reverse stock splits are not always the panacea they appear. Webvan and Maxicare, for instance, both have since filed for bankruptcy-court protection. One disadvantage of a reverse stock split is that if a dividend were presently being paid, it is possible that dividends may decline because less shares are outstanding. Overall, however, as a stockholder, you probably would accept the argument that a higher price might increase interest in the stock.**

PROFESSIONAL SIMULATION

Explanation

- (a) Common stock represents an owner's claim against a portion of the total assets of the corporation. As a result, it is a residual interest. It therefore is part of stockholders' equity.
- (b) Treasury stock is not an asset. When treasury stock is purchased, a reduction occurs in both assets and stockholders' equity. It is inappropriate to imply that a corporation can own part of itself. Treasury stock may be sold to obtain funds, but that possibility does not make it an asset. When a corporation buys back some of its own outstanding stock, it has reduced its capitalization, but it has not acquired an asset.
- (c) "Accumulated other comprehensive loss" is the sum of all previous "other comprehensive income and loss" amounts. A number of items may be included in the accumulated other comprehensive loss. Among these items are foreign currency translation adjustments, unrealized holding gains and losses for available-for-sale securities, excess of additional pension liability over unrecognized prior service cost and others.
- (d) Retained earnings may be smaller in 2001 because AMR reported a net loss for the period and/or declared a cash dividend during 2001.

Analysis

$$\$5,373 \div 154.484^* = \$34.78$$

*(182,278,766 – 27,794,380 treasury stock)

CHAPTER 16

Dilutive Securities and Earnings Per Share

ASSIGNMENT CLASSIFICATION TABLE

Topics	Questions	Brief Exercises	Exercises	Problems	Cases
1. Convertible debt and preferred stock.	1, 2, 3, 4, 5, 6, 7	1, 2, 3	1, 2, 3, 4, 5, 6, 7, 8, 24, 25	2	1
2. Warrants and debt.	2, 3, 8, 9	4, 5	2, 7, 8, 9, 28	1	1, 3
3. Stock options.	1, 10, 11, 12, 13, 14	6, 7	10, 11, 12, 13, 14	1, 3, 4	2, 4, 5
4. Earnings Per Share (EPS)—terminology.	17, 22, 23, 25	14			7
5. EPS—Determining potentially dilutive securities.	17, 18, 19, 20	11, 12, 13	22, 23, 27	4	6, 8
6. EPS—Treasury stock method.	21		26	5	6, 8
7. EPS—Weighted average computation.	15, 16	9, 10	15, 16, 17, 18, 21	4, 5, 6, 7, 8, 9	
8. EPS—General objectives.	24	8, 14			6, 7, 8
9. EPS—Comprehensive calculations.			19, 20, 21, 22, 23, 24, 25, 26, 28	6, 7, 8	
10. EPS—Contingent shares.			27		
*11. Stock appreciation rights.		15	13, 14		4

*This material is dealt with in an Appendix to the chapter.

ASSIGNMENT CHARACTERISTICS TABLE

Item	Description	Level of Difficulty	Time (minutes)
E16-1	Issuance and conversion of bonds.	Simple	15-20
E16-2	Conversion of bonds.	Simple	15-20
E16-3	Conversion of bonds.	Simple	10-20
E16-4	Conversion of bonds.	Moderate	15-20
E16-5	Conversion of bonds.	Simple	10-20
E16-6	Conversion of bonds.	Moderate	25-35
E16-7	Issuance of bonds with warrants.	Simple	10-15
E16-8	Issuance of bonds with detachable warrants.	Simple	10-15
E16-9	Issuance of bonds with warrants.	Moderate	15-20
E16-10	Issuance and exercise of stock options.	Moderate	15-25
E16-11	Issuance, exercise, and termination of stock options.	Moderate	15-25
E16-12	Issuance, exercise, and termination of stock options.	Moderate	20-30
*E16-13	Stock appreciation rights.	Moderate	15-25
*E16-14	Stock appreciation rights.	Moderate	15-25
E16-15	Weighted average number of shares.	Moderate	15-25
E16-16	EPS: Simple capital structure.	Simple	10-15
E16-17	EPS: Simple capital structure.	Simple	12-15
E16-18	EPS: Simple capital structure.	Simple	10-15
E16-19	EPS: Simple capital structure.	Simple	20-25
E16-20	EPS: Simple capital structure.	Simple	25-30
E16-21	EPS: Simple capital structure.	Simple	10-15
E16-22	EPS with convertible bonds, various situations.	Complex	20-25
E16-23	EPS with convertible bonds.	Moderate	15-20
E16-24	EPS with convertible bonds and preferred stock.	Moderate	20-25
E16-25	EPS with convertible bonds and preferred stock.	Moderate	10-15
E16-26	EPS with options, various situations.	Moderate	20-25
E16-27	EPS with contingent issuance agreement.	Simple	10-15
E16-28	EPS with warrants.	Moderate	15-20
P16-1	Entries for various dilutive securities.	Moderate	35-40
P16-2	Entries for conversion, amortization, and interest of bonds.	Moderate	45-50
P16-3	Stock option plan.	Moderate	30-35
P16-4	EPS with complex capital structure.	Moderate	40-45
P16-5	Basic EPS: Two-year presentation.	Moderate	30-35
P16-6	EPS computation of basic and diluted EPS.	Moderate	35-45
P16-7	Computation of basic and diluted EPS.	Moderate	25-35
P16-8	EPS with stock dividend and extraordinary item.	Complex	30-40
C16-1	Warrants issued with bonds and convertible bonds.	Moderate	20-25
C16-2	Ethical issues—compensation plan.	Simple	15-20
C16-3	Stock warrants—various types.	Moderate	15-20
*C16-4	Stock options and stock appreciation rights—intrinsic value model.	Moderate	25-30
C16-5	Stock compensation plans.	Moderate	25-30
C16-6	EPS: Preferred dividends, options, and convertible debt.	Moderate	25-30
C16-7	EPS concepts and effect of transactions on EPS.	Moderate	25-35
C16-8	Concepts related to options and antidilution.	Moderate	25-35

ANSWERS TO QUESTIONS

1. Securities such as convertible debt or stock options are dilutive because their features indicate that the holders of the securities can become common shareholders. When the common shares are issued, there will be a reduction—dilution—in earnings per share.
2. Corporations issue convertible securities for two reasons. One is to raise equity capital without giving up more ownership control than necessary. A second reason is to obtain common stock financing at cheaper rates. The conversion privilege attracts investors willing to accept a lower interest rate than on a straight debt issue.
3. Convertible debt and debt with stock warrants are similar in that: (1) both allow the issuer to issue debt at a lower interest cost than would generally be available for nonconvertible debt; (2) both allow the holders to purchase the issuer's stock at less than market value if the stock appreciates sufficiently in the future; (3) both provide the holder the protection of a debt security if the value of the stock does not appreciate; and (4) both are complex securities which contain elements of debt and equity at the time of issue.

Convertible debt and debt with stock warrants are different in that: (1) if the market price of the stock increases sufficiently, the issuer can force conversion of convertible debt into common stock by calling the issue for redemption, but the issuer cannot force exercise of the warrants; (2) convertible debt may be essentially equity capital, whereas debt with stock warrants is debt with the additional right to acquire equity; and (3) the conversion option and the convertible debt are inseparable and, in the absence of separate transferability, do not have separate values established in the market; whereas debt with detachable stock warrants can be separated into debt and the right to purchase stock, each having separate values established by the transactions in the market.

4. The accounting treatment of the \$160,000 "sweetener" to induce conversion of the bonds into common shares represents a departure from GAAP because the FASB views the transaction as the retirement of debt. Therefore, the FASB requires that the "sweetener" of \$160,000 be reported as an expense. It is not an extraordinary loss because it is simply a payment to induce conversion.
5. (a) From the point of view of the issuer, the conversion feature of convertible debt results in a lower cash interest cost than in the case of nonconvertible debt. In addition, the issuer in planning its long-range financing may view the convertible debt as a means of raising equity capital over the long term. Thus, if the market value of the underlying common stock increases sufficiently after the issue of the debt, the issuer will usually be able to force conversion of the convertible debt into common stock by calling the issue for redemption. Under the market conditions, the issuer can effectively eliminate the debt. On the other hand, if the market value of the common stock does not increase sufficiently to result in the conversion of the debt, the issuer will have received the benefit of the cash proceeds to the scheduled maturity dates at a relatively low cash interest cost.

(b) The purchaser obtains an option to receive either the face amount of the debt upon maturity or the specified number of common shares upon conversion. If the market value of the underlying common stock increases above the conversion price, the purchaser (either through conversion or through holding the convertible debt containing the conversion option) receives the benefits of appreciation. On the other hand, should the value of the underlying company stock not increase, the purchaser could nevertheless expect to receive the principal and (lower) interest.

Questions Chapter 16 (Continued)

6. The view that separate accounting recognition should be accorded the conversion feature of convertible debt is based on the premise that there is an economic value inherent in the conversion feature or call on the common stock and that the value of this feature should be recognized for accounting purposes by the issuer. It may be argued that the call is not significantly different in nature from the call contained in an option or warrant and its issue is thus a type of capital transaction. The fact that the conversion feature coexists with certain senior security characteristics in a complex security and cannot be physically separated from these elements or from the instrument does not constitute a logical or compelling reason why the values of the various elements should not receive separate accounting recognition. The fact that the eventual outcome of the option granted the purchaser of the convertible debt cannot be determined at date of issuance is not relevant to the question of effectively reflecting in the accounting records the various elements of the complex document at the date of issuance. The conversion feature has a value at date of issuance and should be recognized. Moreover, the difficulties of implementation are not insurmountable and should not be relied upon to govern the conclusion.

7. The method used by the company to record the exchange of convertible debentures for common stock can be supported on the grounds that when the company issued the convertible debentures, the proceeds could represent consideration received for the stock. Therefore, when conversion occurs, the book value of the obligation is simply transferred to the stock exchanged for it. Further justification is that conversion represents a transaction with stockholders which should not give rise to a gain or loss.

On the other hand, recording the issue of the common stock at the book value of the debentures is open to question. It may be argued that the exchange of the stock for the debentures completes the transaction cycle for the debentures and begins a new cycle for the stock. The consideration or value used for this new transaction cycle should then be the amount which would be received if the debentures were sold rather than exchanged, or the amount which would be received if the related stock were sold, whichever is more clearly determinable at the time of the exchange. This method recognizes changes in values which have occurred and subordinates a consideration determined at the time the debentures were issued.

8.	Cash	3,000,000	
	Discount on Bonds Payable.....	200,000	
	Bonds Payable		3,000,000
	Paid-in Capital—Stock Warrants		200,000
	Value of bonds with warrants	\$3,000,000	
	Value of warrants	<u>200,000</u>	
	Value of bonds without warrants	<u>\$2,800,000</u>	

In this case, the incremental method is used since no separate value is given for the bonds without the warrants.

9. If a corporation decides to issue new shares of stock, the old stockholders generally have the right, referred to as a stock right, to purchase newly issued shares in proportion to their holdings. No entry is required when rights are issued to existing stockholders. Only a memorandum entry is needed to indicate that the rights have been issued. If exercised, the corporation simply debits Cash for the proceeds received, credits Common Stock for the par value, and any difference is recorded with a credit to Paid-in Capital in Excess of Par.

10. Under SFAS No. 123, companies are encouraged but are not required to use the fair value method to recognize compensation cost. If the fair value method is not adopted, companies are required to disclose in a note to the financial statements pro forma net income and earnings per share (if presented), as if they had used the fair value method.

Questions Chapter 16 (Continued)

11. This plan would not be considered compensatory since it meets the conditions of a noncompensatory plan; i.e., (1) all full-time employees may participate on an equitable basis, (2) the discount from market price is small, and (3) the plan offers no substantive option feature.

12. The profession recommends that the fair value of a stock option be determined on the date on which the option is granted to a specific individual.

At the date the option is granted, the corporation foregoes the alternative of selling the shares at the then prevailing price. The market price on the date of grant may be presumed to be the value which the employer had in mind. It is the value of the option at the date of grant, rather than the grantor's ultimate gain or loss on the transaction, which for accounting purposes constitutes whatever compensation the grantor intends to pay.

13. Statement of Financial Accounting Standards No.123 requires that compensation expense be recognized over the service period. Unless otherwise specified, the service period is the vesting period—the time between the grant date and the vesting date.

14. Using the fair value approach, total compensation expense is computed based on the fair value of the options on the date the options are granted to the employees. Fair value is estimated using an acceptable option pricing model (such as the Black-Scholes option pricing model).

15. Weighted average shares outstanding

Outstanding shares (all year) =	400,000
October 1 to December 31 (200,000 X 1/4) =	<u>50,000</u>
Weighted average	<u>450,000</u>
Earnings.....	\$3,000,000
Preferred dividends	<u>400,000</u>
Earnings available to common stockholders.....	<u><u>\$2,600,000</u></u>

$$\text{Earnings per share} = \frac{\$2,600,000}{450,000} = \$5.78$$

16. The computation of the weighted average number of shares requires restatement of the shares outstanding before the stock dividend or split. The additional shares outstanding as a result of a stock dividend or split are assumed to have been outstanding since the beginning of the year. Shares outstanding prior to the stock dividend or split are adjusted so that these shares are stated on the same basis as shares issued after the stock dividend/split.

17. (a) Basic earnings per share is the amount of earnings for the period available to each share of common stock outstanding during the reporting period.

(b) A potentially dilutive security is a security which can be exchanged for or converted into common stock and therefore upon conversion or exercise could dilute (or decrease) earnings per share. Included in this category are convertible securities, options, warrants, and other rights.

(c) Diluted earnings per share is the amount of earnings for the period available to each share of common stock outstanding and to each share that would have been outstanding assuming the issuance of common shares for all dilutive potential common shares outstanding during the reporting period.

(d) A complex capital structure exists whenever a company's capital structure includes dilutive securities.

(e) Potential common stock is not common stock in form but does enable its holders to obtain common stock upon exercise or conversion.

Questions Chapter 16 (Continued)

- 18. Convertible securities are potentially dilutive securities and part of diluted earnings per share if their conversion increases the EPS numerator less than it increases the EPS denominator; i.e., the EPS with conversion is less than the basic EPS.

- 19. The concept that a security may be the equivalent of common stock has evolved to meet the reporting needs of investors in corporations that have issued certain types of convertible securities, options, and warrants. A potentially dilutive security is a security which is not, in form, common stock but which enables its holder to obtain common stock upon exercise or conversion. The holders of these securities can expect to participate in the appreciation of the value of the common stock resulting principally from the earnings and earnings potential of the issuing corporation. This participation is essentially the same as that of a common stockholder except that the security may carry a specified dividend yielding a return different from that received by a common stockholder. The attractiveness to investors of this type of security is often based principally upon this potential right to share in increases in the earnings potential of the issuing corporation rather than upon its fixed return or upon other senior security characteristics. In addition, the call characteristic of the stock options and warrants gives the investor potential control over a far greater number of shares per dollar of investment than if the investor owned the shares outright.

- 20. Convertible securities are considered to be potentially dilutive securities whenever their conversion causes a greater percentage increase in the EPS numerator than in the EPS denominator. If this situation does not result, conversion is not assumed and only basic EPS is reported.

- 21. Under the treasury stock method, diluted earnings per share should be determined as if outstanding options and warrants were exercised at the beginning of year (or date of issue if later) and the funds obtained thereby were used to purchase common stock at the average market price for the period. For example, if a corporation has 10,000 warrants outstanding exercisable at \$54, and the average market price of the common stock during the reported period is \$60, the \$540,000 which would be realized from exercise of warrants and issuance of 10,000 shares would be an amount sufficient to acquire 9,000 shares; thus, 1,000 shares would be added to the outstanding common shares in computing diluted earnings per share for the period. However, to avoid an incremental positive effect upon earnings per share, options and warrants should enter into the computation only when the average market price of the common stock exceeds the exercise price of the option or warrant.

- 22. Yes, if warrants or options are present, an increase in the market price of the common stock can increase the number of potentially dilutive common shares by decreasing the number of shares repurchasable. In addition, an increase in the market price of common stock can increase the compensation expense reported in a stock appreciation rights plan. This would decrease net income and, consequently, earnings per share.

- 23. Antidilution is an increase in earnings per share resulting from the assumption that convertible securities have been converted or that options and warrants have been exercised, or other shares have been issued upon the fulfillment of certain conditions. For example, an antidilutive condition would exist when the dividend or interest requirement (net of tax) of a convertible security exceeds the current EPS multiplied by the number of common shares issuable upon conversion of the security. This may be illustrated by assuming a company in the following situation:

Net income.....	\$ 10,000
Outstanding shares of common stock	20,000
6% Bonds payable (convertible into 5,000 shares of common stock).....	\$100,000
Tax rate	40%

Basic earnings per share = \$10,000/20,000 shares = \$50

Questions Chapter 16 (Continued)

Earnings per share assuming conversion of the bonds:

Net income	\$10,000
Bond interest (net of tax) = (1 - .40) (\$100,000 X .06)	<u>3,600</u>
Adjusted net income	<u>\$13,600</u>

$$\text{Earnings per share assuming conversion} = \frac{\$13,600}{20,000 + 5,000} = \underline{\underline{\$.54}}$$

This antidilutive effect occurs because the bond interest (net of tax) of \$3,600 is greater than the current EPS of \$.50 multiplied by the number of shares issuable upon conversion of the bonds (5,000 shares).

24. Both basic earnings per share and diluted earnings per share must be presented in a complex capital structure. When irregular items are reported, per share amounts should be shown for income from continuing operations, income before extraordinary items and accounting change, and net income.
- *25. Antidilution when multiple securities are involved is determined by ranking the securities for maximum possible dilution in terms of per share effect. Starting with the most dilutive, earnings per share is reduced until one of the securities maintains or increases earnings per share. When an increase in earnings per share occurs, the security that causes the increase in earnings per share is excluded. The previous computation therefore provided the maximum dilution.

SOLUTIONS TO BRIEF EXERCISES

BRIEF EXERCISE 16-1

Cash	4,950,000	
Discount on Bonds Payable	50,000	
Bonds Payable		5,000,000

BRIEF EXERCISE 16-2

Bonds Payable	1,000,000	
Discount on Bonds Payable		30,000
Common Stock (1,000 X 50 X \$10)		500,000
Paid-in Capital in Excess of Par		470,000

BRIEF EXERCISE 16-3

Preferred Stock	50,000	
Paid-in Capital in Excess of Par—Preferred		
Stock (\$55 – \$50) X 1,000	5,000	
Common Stock		20,000
Paid-in Capital in Excess of Par—		
Common Stock		
(\$55 X 1,000) – (2,000 X \$10)		35,000

BRIEF EXERCISE 16-4

Cash	1,010,000	
Discount on Bonds Payable		
(\$1,000,000 – \$970,392)	29,608	
Bonds Payable		1,000,000
Paid-in Capital—Stock Warrants		39,608
FMV of bonds (1,000 X \$1,000 X .98)		\$ 980,000
FMV of warrants (1,000 X \$40)		<u>40,000</u>
Aggregate FMV		<u>\$1,020,000</u>
Allocated to bonds (\$980/\$1,020 X \$1,010,000)		\$ 970,392
Allocated to warrants (\$40/\$1,020 X \$1,010,000)		<u>39,608</u>
		<u>\$1,010,000</u>

BRIEF EXERCISE 16-5

Cash	1,010,000	
Discount on Bonds Payable		
[\$1,000,000 X (1 – .98)].....	20,000	
Bonds Payable		1,000,000
Paid-in Capital—Stock Warrants.....		30,000*

*\$1,000,000 X (1.01 – .98)

BRIEF EXERCISE 16-6

1/1/05 No entry

12/31/05	Compensation Expense.....	37,500	
	Paid-in Capital—Stock		
	Options		37,500

12/31/05	Compensation Expense.....	37,500	
	Paid-in Capital—Stock		
	Options		37,500

[\$37,500 = (5,000 X \$15) X 1/2]

BRIEF EXERCISE 16-7

1/1/05 No entry

12/31/05	Compensation Expense.....	70,000	
	Paid-in Capital—Stock		
	Options		70,000

12/31/06	Compensation Expense.....	70,000	
	Paid-in Capital—Stock		
	Options		70,000

[\$70,000 = \$140,000 X 1/2]

BRIEF EXERCISE 16-8

$$\frac{\$1,200,000 - (100,000 \times \$2)}{250,000 \text{ shares}} = \underline{\$4.00 \text{ per share}}$$

BRIEF EXERCISE 16-9

Dates Outstanding	Shares Outstanding	Fraction of Year	Weighted Shares
1/1–5/1	120,000	4/12	40,000
5/1–7/1	165,000	2/12	27,500
7/1–10/1	155,000	3/12	38,750
10/1–12/31	165,000	3/12	<u>41,250</u>
			<u>147,500</u>

BRIEF EXERCISE 16-10

(a) $(200,000 \times 4/12) + (230,000 \times 8/12) = \underline{220,000}$

(b) 230,000 (The 30,000 shares issued in the stock dividend are assumed outstanding from the beginning of the year.)

BRIEF EXERCISE 16-11

Net income	\$300,000
Adjustment for interest, net of tax [$\$40,000 \times (1 - .40)$]	<u>24,000</u>
Adjusted net income	\$324,000
Weighted average number of shares adjusted for dilutive securities (100,000 + 16,000)	<u>÷ 116,000</u>
Diluted EPS	<u>\$2.79</u>

BRIEF EXERCISE 16-12

Net income	\$400,000
Weighted average number of shares adjusted for dilutive securities (50,000 + 10,000)	<u>÷ 60,000</u>
Diluted EPS	<u>\$6.67</u>

BRIEF EXERCISE 16-13

Proceeds from assumed exercise of 30,000 options (30,000 X \$10)	<u>\$300,000</u>
Shares issued upon exercise	<u>30,000</u>
Treasury shares purchasable (\$300,000 ÷ \$15)	<u>20,000</u>
Incremental shares	<u>10,000</u>

$$\text{Diluted EPS} = \frac{\$300,000}{200,000 + 10,000} = \underline{\underline{\$1.43}}$$

BRIEF EXERCISE 16-14

Earnings per share	
Income before extraordinary loss (\$600,000/50,000)	\$12.00
Extraordinary loss (\$120,000/50,000)	<u>(2.40)</u>
Net income (\$480,000/50,000)	<u>\$ 9.60</u>

*BRIEF EXERCISE 16-15

$$2004: [5,000 \times (\$22 - \$20)] \times 50\% = \underline{\underline{\$5,000}}$$

$$2005: [5,000 \times (\$29 - \$20)] - \$5,000 = \underline{\underline{\$40,000}}$$

SOLUTIONS TO EXERCISES

EXERCISE 16-1 (15-20 minutes)

1.	Cash (\$20,000,000 X .99)	19,800,000	
	Discount on Bonds Payable	200,000	
	Bonds Payable		20,000,000
	Unamortized Bond Issue Costs	70,000	
	Cash		70,000
2.	Cash	19,600,000	
	Discount on Bonds Payable	1,200,000	
	Bonds Payable		20,000,000
	Paid-in Capital—Stock Warrants.....		800,000
	Value of bonds plus warrants (\$20,000,000 X .98)	\$19,600,000	
	Value of warrants (200,000 X \$4)	<u>800,000</u>	
	Value of bonds	<u>\$18,800,000</u>	
3.	Debt Conversion Expense	75,000	
	Bonds Payable	10,000,000	
	Discount on Bonds Payable		55,000
	Common Stock		1,000,000
	Paid-in Capital in Excess of Par.....		8,945,000*
	Cash		75,000

*[(\$10,000,000 – \$55,000) – \$1,000,000]

EXERCISE 16-2 (15-20 minutes)

(a)	Interest Payable (\$200,000 X 2/6)	66,667	
	Interest Expense (\$200,000 X 4/6) + \$2,712..	136,045	
	Discount on Bonds Payable		2,712
	Cash (\$4,000,000 X 10% ÷ 2).....		200,000

Calculations:

Par value	\$4,000,000
Issuance price	<u>3,920,000</u>
Total discount	<u>\$ 80,000</u>

EXERCISE 16-2 (Continued)

Months remaining	118
Discount per month (\$80,000 ÷ 118)	\$678
Discount amortized (4 X \$678)	\$2,712

(b) Bonds Payable	1,500,000	
Discount on Bonds Payable		27,458
Common Stock (30,000 X \$20)		600,000
Paid-in Capital in Excess of Par.....		872,542*

*(\$1,500,000 – \$27,458) – \$600,000

Calculations:

Discount related to 3/8 of the bonds (\$80,000 X 3/8)	\$30,000
Less discount amortized [((\$30,000 ÷ 118) X 10)]	<u>2,542</u>
Unamortized bond discount	\$27,458

EXERCISE 16-3 (10-20 minutes)

Conversion recorded at book value of the bonds:

Bonds Payable	500,000	
Premium on Bonds Payable	7,500	
Preferred Stock (500 X 20 X \$50).....		500,000
Paid-in Capital in Excess of Par (Preferred Stock).....		7,500

EXERCISE 16-4 (15-20 minutes)

(a) Cash	10,800,000	
Bonds Payable		10,000,000
Premium on Bonds Payable.....		800,000
(To record issuance of \$10,000,000 of 8% convertible debentures for \$10,800,000. The bonds mature in twenty years, and each \$1,000 bond is convertible into five shares of \$30 par value common stock)		

EXERCISE 16-4 (Continued)

(b) Bonds Payable	3,000,000	
Premium on Bonds Payable		
(Schedule 1)	216,000	
Common Stock, \$15 par		
(Schedule 2)		450,000
Paid-in Capital in Excess of Par		2,766,000
(To record conversion of 30% of the outstanding 8% convertible debentures after giving effect to the 2-for-1 stock split)		

Schedule 1
Computation of Unamortized Premium on Bonds Converted

Premium on bonds payable on January 1, 2003		\$800,000
Amortization for 2003 (\$800,000 ÷ 20)	\$40,000	
Amortization for 2004 (\$800,000 ÷ 20)	+40,000	80,000
Premium on bonds payable on January 1, 2005		720,000
Bonds converted		30%
Unamortized premium on bonds converted		<u>\$216,000</u>

Schedule 2
Computation of Common Stock Resulting from Conversion

Number of shares convertible on January 1, 2003:		
Number of bonds (\$10,000,000 ÷ \$1,000)	10,000	
Number of shares for each bond	X 5	50,000
Stock split on January 1, 2004		X 2
Number of shares convertible after the stock split		100,000
% of bonds converted		X 30%
Number of shares issued		30,000
Par value/per share		\$15
Total par value		<u>\$450,000</u>

EXERCISE 16-5 (10-20 minutes)

Interest Expense	25,640	
Discount on Bonds Payable		640
[$\$10,240 \div 64 = \160 ; $\$160 \times 4$]		
Cash ($10\% \times \$500,000 \times 1/2$).....		25,000
(Assumed that the interest accrual was reversed as of January 1, 2005; if the interest accrual was not reversed, interest expense would be \$17,307 and interest payable would be debited for \$8,333)		
Bonds Payable	500,000	
Discount on Bonds Payable ($\$10,240 - \640).....		9,600
Common Stock ($\$25 \times 6 \times 500$)		75,000
Paid-in Capital in Excess of Par		415,400*

*($\$500,000 - \$9,600$) - $\$75,000$

EXERCISE 16-6 (25-35 minutes)

(a) December 31, 2005

Bond Interest Expense	156,000	
Premium on Bonds Payable	4,000	
($\$80,000 \times 1/20$)		
Cash ($\$4,000,000 \times 8\% \times 6/12$).....		160,000

(b) January 1, 2006

Bonds Payable	400,000	
Premium on Bonds Payable	6,400	
Common Stock.....		320,000
[$8 \times \$100 \times (\$400,000/\$1,000)$]		
Paid-in Capital in Excess of Par		86,400

Total premium	
($\$4,000,000 \times .02$)	\$80,000
Premium amortized	
($\$80,000 \times 2/10$)	16,000
Balance	<u>\$64,000</u>

Bonds converted	
($\$400,000 \div \$4,000,000$)	10%
Related premium	
($\$64,000 \times 10\%$)	6,400

EXERCISE 16-6 (Continued)

(c)	March 31, 2006		
	Bond Interest Expense.....	7,800	
	Premium on Bonds Payable	200	
	(\$6,400 ÷ 8 years) X 3/12		
	Bond Interest Payable		8,000
	(\$400,000 X 8% X 3/12)		

	March 31, 2006		
	Bonds Payable.....	400,000	
	Premium on Bonds Payable	6,200	
	Common Stock.....		320,000
	Paid-in Capital in Excess of Par		86,200

Premium as of January 1, 2006		
for \$400,000 of bonds	\$6,400	
\$6,400 ÷ 8 years remaining		
X 3/12	<u>(200)</u>	
Premium as of March 31, 2006		
for \$400,000 of bonds	<u>\$6,200</u>	

(d)	June 30, 2006		
	Bond Interest Expense.....	124,800	
	Premium on Bonds Payable	3,200	
	Bond Interest Payable	8,000	
	(\$400,000 X 8% X 1/4)***		
	Cash		136,000*

[Premium to be amortized:
(\$80,000 X 80%) X 1/20 = \$3,200, or
\$51,200** ÷ 16 (remaining interest and
amortization periods) = \$3,200]

*Total to be paid: (\$3,200,000 X 8% ÷ 2) + \$8,000 = \$136,000

**Original premium	\$80,000
2004 amortization	(8,000)
2005 amortization	(8,000)
Jan. 1, 2006 write-off	(6,400)
Mar. 31, 2006 amortization	(200)
Mar. 31, 2006 write-off	<u>(6,200)</u>
	<u>\$51,200</u>

*** Assumes interest accrued on March 31. If not, debit Bond Interest Expense for \$132,800.

EXERCISE 16-7 (10-15 minutes)

(a) **Basic formulas:**

$$\frac{\text{Value of bonds without warrants}}{\text{Value of bonds without warrants} + \text{Value of warrants}} \times \text{Issue price} = \text{Value assigned to bonds}$$

$$\frac{\text{Value of warrants}}{\text{Value of bonds without warrants} + \text{Value of warrants}} \times \text{Issue price} = \text{Value assigned to warrants}$$

$$\frac{\$136,000}{\$136,000 + \$24,000} \times \$152,000 = \$129,200 \quad \text{Value assigned to bonds}$$

$$\frac{\$24,000}{\$136,000 + \$24,000} \times \$152,000 = \frac{22,800}{\$152,000} \quad \text{Value assigned to warrants Total}$$

Cash	152,000	
Discount on Bonds Payable	40,800	
(\$170,000 – \$129,200)		
Bonds Payable		170,000
Paid-in Capital—Stock Warrants		22,800

(b) **When the warrants are non-detachable, separate recognition is not given to the warrants. The accounting treatment parallels that given convertible debt because the debt and equity element cannot be separated.**

The entry if warrants were non-detachable is:

Cash	152,000	
Discount on Bonds Payable	18,000	
Bonds Payable		170,000

EXERCISE 16-8 (10-15 minutes)

**SANDS COMPANY
Journal Entry
September 1, 2004**

Cash	4,220,000	
Unamortized Bond Issue Costs	30,000	
Bonds Payable (4,000 X \$1,000)		4,000,000
Premium on Bonds Payable—Schedule 1		136,000
Paid-in Capital—Stock Warrants— Schedule 1		24,000
Bond Interest Expense—Schedule 2		90,000
(To record the issuance of the bonds)		

**Schedule 1
Premium on Bonds Payable and Value of Stock Warrants**

Sales price (4,000 X \$1,040)	\$4,160,000
Face value of bonds	<u>4,000,000</u>
	160,000
Deduct value assigned to stock warrants (4,000 X 2 = 8,000; 8,000 X \$3)	<u>24,000</u>
Premium on bonds payable	<u>\$ 136,000</u>

**Schedule 2
Accrued Bond Interest to Date of Sale**

Face value of bonds	\$4,000,000
Interest rate	<u>9%</u>
Annual interest	<u>\$ 360,000</u>
Accrued interest for 3 months – (\$360,000 X 3/12)	<u>\$ 90,000</u>

EXERCISE 16-9 (10-15 minutes)

(a) Cash (\$2,000,000 X 1.02)	2,040,000	
Discount on Bonds Payable	40,000	
[(1 – .98) X \$2,000,000]		
Bonds Payable		2,000,000
Paid-in Capital—Stock Warrants.....		80,000*

*\$2,040,000 – (\$2,000,000 X .98)

EXERCISE 16-9 (Continued)

(b) Market value of bonds without warrants (\$2,000,000 X .98)	\$1,960,000
Market value of warrants (2,000 X \$30)	<u>60,000</u>
Total market value	<u>\$2,020,000</u>

$$\frac{\$1,960,000}{\$2,020,000} \times \$2,040,000 = \$1,979,406 \quad \text{Value assigned to bonds}$$

$$\frac{\$60,000}{\$2,020,000} \times \$2,040,000 = \$60,594 \quad \text{Value assigned to warrants}$$

Cash	2,040,000	
Discount on Bonds Payable	20,594	
Bonds Payable		2,000,000
Paid-in Capital—Stock Warrants.....		60,594

EXERCISE 16-10 (15-25 minutes)

1/2/05 No entry (total compensation cost is \$450,000)

12/31/05	Compensation Expense	225,000	
	Paid-in Capital—Stock Options.....		225,000
	[To record compensation expense for 2005 (1/2 X \$450,000)]		

12/31/06	Compensation Expense.....	225,000	
	Paid-in Capital—Stock Options		225,000
	[To record compensation expense for 2006 (1/2 X \$450,000)]		

1/3/07	Cash (20,000 X \$40)	800,000	
	Paid-in Capital—Stock Options	300,000	
	(\$450,000 X 20,000/30,000)		
	Common Stock (20,000 X \$10)		200,000
	Paid-in Capital in Excess of Par.....		900,000
	(To record issuance of 20,000 shares of \$10 par value stock upon exercise of options at option price of \$40)		

EXERCISE 16-10 (Continued)

(Note to instructor: The market price of the stock has no relevance in the prior entry and the following one.)

5/1/07	Cash (10,000 X \$40).....	400,000	
	Paid-in Capital—Stock Options	150,000	
	(\$450,000 X 10,000/30,000)		
	Common Stock		100,000
	Paid-in Capital in Excess of Par.....		450,000
	(To record issuance of 10,000 shares of \$10 par value stock upon exercise of options at option price of \$40)		

EXERCISE 16-11 (15-25 minutes)

1/1/05	No entry		
12/31/05	Compensation Expense.....	175,000	
	Paid-in Capital—Stock Options		175,000
	(\$350,000 X 1/2) (To recognize compensation expense for 2005)		
4/1/06	Paid-in Capital—Stock Options	35,000	
	Compensation Expense		35,000
	(\$350,000 X 2,000/20,000) (To record termination of stock op- tions held by resigned employees)		
12/31/06	Compensation Expense.....	175,000	
	Paid-in Capital—Stock Options		175,000
	(\$350,000 X 1/2) (To recognize compensation expense for 2006)		
3/31/07	Cash (12,000 X \$25).....	300,000	
	Paid-in Capital—Stock Options	210,000	
	(\$350,000 X 12,000/20,000)		
	Common Stock.....		120,000
	Paid-in Capital in Excess of Par		390,000
	(To record exercise of stock options)		

EXERCISE 16-12 (15-25 minutes)

1/1/03	No entry		
12/31/03	Compensation Expense.....	200,000	
	 Paid-in Capital—Stock Options.....		200,000
	 (\$400,000 X 1/2)		
12/31/04	Compensation Expense.....	200,000	
	 Paid-in Capital—Stock Options.....		200,000
5/1/05	Cash (8,000 X \$20).....	160,000	
	 Paid-in Capital—Stock Options	320,000*	
	 Common Stock (8,000 X \$5)		40,000
	 Paid-in Capital in Excess of Par.....		440,000
	 *(\$400,000 X 8,000/10,000)		
1/1/07	Paid-in Capital—Stock Options	80,000	
	 Paid-in Capital from Expired Stock		
	 Options (\$400,000 – \$320,000).....		
	80,000		

***EXERCISE 16-13 (15-25 minutes)**

(a) Schedule of Compensation Expense Stock Appreciation Rights (150,000)

Date	Market Price	Preestablished Price	Cumulative Compensation Recognizable	Percentage Accrued	Compensation Accrued to Date	Expense 2001	Expense 2002	Expense 2003	Expense 2004
12/31/01	\$14	\$10	\$ 600,000	25%	\$ 150,000	\$150,000			
12/31/02	8	10	0	50%	<u>(150,000)</u>		\$(150,000)		
12/31/03	20	10	1,500,000	75%	1,125,000		\$1,125,000		
12/31/04	19	10	1,350,000	100%	<u>225,000</u>				\$225,000
					<u>\$1,350,000</u>				

- (b) Compensation Expense** **225,000**
- Liability Under Stock Appreciation Plan** **225,000**
-
- (c) Liability Under Stock Appreciation Plan** **1,350,000**
- Cash [150,000 X (\$19 – \$10)]** **1,350,000**

***EXERCISE 16-14 (15-25 minutes)**

(a) Schedule of Compensation Expense Stock Appreciation Rights (30,000)

Date	Market Price	Preestablished Price	Cumulative Compensation Recognizable	Percentage Accrued	Compensation Accrued to Date	Expense 2002	Expense 2003	Expense 2004	Expense 2005	Expense 2006
12/31/02	\$36	\$30	\$180,000	25%	\$45,000	\$45,000				
12/31/03	39	30	270,000	50%	90,000		\$90,000			
12/31/04	45	30	450,000	75%	202,500			\$202,500		
12/31/05	36	30	180,000	100%	337,500				\$(157,500)	
12/31/06	48	30	540,000	—	(157,500)					\$360,000
					<u>360,000</u>					
					<u>\$540,000</u>					

(b)

<u>2002</u>	Compensation Expense.....	45,000	
	Liability Under Stock Appreciation Plan		45,000
<u>2005</u>	Liability Under Stock Appreciation Plan	157,500	
	Compensation Expense		157,500
<u>2006</u>	Compensation Expense.....	360,000	
	Liability Under Stock Appreciation Plan		360,000

EXERCISE 16-15 (15-25 minutes)

(a)	2,220,000 shares	
	Jan. 1, 2003–Sept. 30, 2003 (2,000,000 X 9/12)	1,500,000
	Retroactive adjustment for stock dividend	<u>X 1.10</u>
	Jan. 1, 2003–Sept. 30, 2003, as adjusted	1,650,000
	Oct. 1, 2003–Dec. 31, 2003 (2,200,000 X 3/12)	<u>550,000</u>
		<u><u>2,200,000</u></u>

Another way to view this transaction is that the 2,000,000 shares at the beginning of the year must be restated for the stock dividend regardless of where in the year the stock dividend occurs.

(b)	3,700,000 shares	
	Jan. 1, 2004–Mar. 31, 2004 (2,200,000 X 3/12)	550,000
	Apr. 1, 2004–Dec. 31, 2004 (4,200,000 X 9/12)	<u>3,150,000</u>
		<u><u>3,700,000</u></u>

(c)	7,400,000 shares	
	2004 weighted average number of shares previously computed	3,700,000
	Retroactive adjustment for stock split	<u>X 2</u>
		<u><u>7,400,000</u></u>

(d)	8,400,000 shares	
	Jan. 1, 2005–Mar. 31, 2005 (4,200,000 X 3/12)	1,050,000
	Retroactive adjustment for stock split	<u>X 2</u>
	Jan. 1, 2005–Mar. 31, 2005, as adjusted	2,100,000
	Apr. 1, 2005–Dec. 31, 2005 (8,400,000 X 9/12)	<u>6,300,000</u>
		<u><u>8,400,000</u></u>

Another way to view this transaction is that the 4,200,000 shares at the beginning of the year must be restated for the stock split regardless of where in the year the stock split occurs.

EXERCISE 16-16 (10-15 minutes)

(a)

Event	Dates Outstanding	Shares Outstanding	Restatement	Fraction of Year	Weighted Shares
Beginning balance	Jan. 1–Feb. 1	480,000	1.1 X 3.0	1/12	132,000
Issued shares	Feb. 1–Mar. 1	600,000	1.1 X 3.0	1/12	165,000
Stock dividend	Mar. 1–May 1	660,000	3.0	2/12	330,000
Reacquired shares	May 1–June 1	560,000	3.0	1/12	140,000
Stock split	June 1–Oct. 1	1,680,000		4/12	560,000
Reissued shares	Oct. 1–Dec. 31	1,740,000		3/12	<u>435,000</u>
Weighted average number of shares outstanding					1,762,000

(b) Earnings Per Share = $\frac{\$3,456,000 \text{ (Net Income)}}{1,762,000 \text{ (Weighted Average Shares)}} = \1.96

(c) Earnings Per Share = $\frac{\$3,456,000 - \$900,000}{1,762,000} = \$1.45$

(d) Income from continuing operations ^a	\$1.72
Loss from discontinued operations ^b	<u>(.25)</u>
Income before extraordinary item	1.47
Extraordinary gain ^c	<u>.49</u>
Net income	<u>\$1.96</u>

^a Net income	\$3,456,000
Deduct extraordinary gain	(864,000)
Add loss from discontinued operations	<u>432,000</u>
Income from continuing operations	<u>\$3,024,000</u>

$\frac{\text{^a\$3,024,000}}{1,762,000} = \1.72

$\frac{\text{^b\$(432,000)}}{1,762,000} = \$(.25)$

$\frac{\text{^c\$864,000}}{1,762,000} = \$.49$

EXERCISE 16-17 (12-15 minutes)

Event	Dates Outstanding	Shares Outstanding	Fraction of Year	Weighted Shares
Beginning balance	Jan. 1–May 1	200,000	4/12	66,667
Issued shares	May 1–Oct. 31	208,000	6/12	104,000
Reacquired shares	Oct. 31–Dec. 31	194,000	2/12	<u>32,333</u>
Weighted average number of shares outstanding				<u>203,000</u>

Income per share before extraordinary item

(\$249,690 + \$40,600 = \$290,290;
\$290,290 ÷ 203,000 shares)

\$1.43

Extraordinary loss per share, net of tax

(\$40,600 ÷ 203,000)

.20

Net income per share (\$249,690 ÷ 203,000)

\$1.23

EXERCISE 16-18 (10-15 minutes)

Event	Dates Outstanding	Shares Outstanding	Restatement	Fraction of Year	Weighted Shares
Beginning balance	Jan. 1–May 1	750,000	2	4/12	500,000
Issued shares	May 1–Aug. 1	1,050,000	2	3/12	525,000
Reacquired shares	Aug. 1–Dec. 31	900,000	2	5/12	<u>750,000</u>
Weighted average number of shares outstanding					<u>1,775,000</u>

Net income

\$2,500,000

Preferred dividend (50,000 X \$100 X 8%)

(400,000)

\$2,100,000

Net income applicable to common stock

= $\frac{\$2,100,000}{1,775,000}$ = \$1.18

Weighted average number of shares outstanding

1,775,000

EXERCISE 16-19 (20-25 minutes)**Earnings per share of common stock:**

Income before extraordinary loss*	\$1.78
Extraordinary loss, net of tax**	<u>(.16)</u>
Net income***	<u>\$1.62</u>

Income data:

Income before extraordinary item	\$15,000,000
Deduct 6% dividend on preferred stock	<u>300,000</u>
Common stock income before extraordinary item	14,700,000
Deduct extraordinary loss, net of tax	<u>1,340,000</u>
Net income available for common stockholders	<u>\$13,360,000</u>

Dates Outstanding	Shares Outstanding	Fraction of Year	Weighted Shares
January 1–April 1	7,500,000	3/12	1,875,000
April 1–December 31	8,500,000	9/12	<u>6,375,000</u>
Weighted average number of shares outstanding			<u>8,250,000</u>

*\$14,700,000 ÷ 8,250,000 shares = \$1.78 per share
(income before extraordinary loss)

**\$1,340,000 ÷ 8,250,000 shares = \$.16 per share
(extraordinary loss net of tax)

***\$13,360,000 ÷ 8,250,000 shares = \$1.62 per share
(net income)

EXERCISE 16-20 (10-15 minutes)

Income before income tax and extraordinary items	\$300,000
Income taxes	<u>150,000</u>
Income before extraordinary item	150,000
Extraordinary gain, net of applicable income tax of \$45,000	<u>45,000</u>
Net income	<u>\$195,000</u>

Per share of common stock:

Income before extraordinary item*	\$.32
Extraordinary gain net of tax**	<u>.16</u>
Net income***	<u>\$.48</u>

EXERCISE 16-20 (Continued)

Dates Outstanding	Shares Outstanding	Fraction of Year	Weighted Shares
January 1–April 1	200,000	3/12	50,000
April 1–July 1	250,000	3/12	62,500
July 1–Oct. 1	330,000	3/12	82,500
Oct. 1–Dec 31.	360,000	3/12	<u>90,000</u>
Weighted average number of shares outstanding			<u>285,000</u>

**\$300,000 – income tax of \$150,000 – preferred dividends of \$60,000
(6% of \$1,000,000) = \$90,000 (income available to common stockholders)**

*\$90,000 ÷ 285,000 shares = \$.32 per share (income before extraordinary gain)

**\$45,000 ÷ 285,000 shares = \$.16 per share (extraordinary gain, net of tax)

***\$135,000 ÷ 285,000 shares = \$.48 per share (net income)—(rounded up)

EXERCISE 16-21 (10-15 minutes)

Event	Dates Outstanding	Shares Outstanding	Fraction of Year	Weighted Shares
Beginning balance	Jan. 1–April 1	900,000	3/12	225,000
Issued shares	April 1–Oct. 31	1,350,000	6/12	675,000
Reacquired shares	Oct. 31–Dec. 31	1,240,000	3/12	<u>310,000</u>
Weighted average number of shares outstanding— unadjusted				1,210,000
Stock dividend, 2/15/06				<u>1.05</u>
Weighted average number of shares outstanding— adjusted				<u>1,270,500</u>

Net income	\$2,530,000
Preferred dividend (280,000 X \$50 X 7%)	<u>(980,000)</u>
	<u>\$1,550,000</u>

Earnings per share for 2005:

$$\frac{\text{Net income applicable to common stock}}{\text{Weighted average number of common shares outstanding}} = \frac{\$1,550,000}{1,270,500} = \$1.22$$

EXERCISE 16-22 (20-25 minutes)

(a) Revenues		\$17,500
Expenses:		
Other than interest	\$8,400	
Bond interest (60 X \$1,000 X .08)	<u>4,800</u>	<u>13,200</u>
Income before income taxes		4,300
Income taxes (40%)		<u>1,720</u>
Net income		<u>\$ 2,580</u>

Diluted earnings per share:

$$\frac{\$2,580 + (1-.40)(\$4,800)}{2,000 + 6,000} = \frac{\$5,460}{8,000} = \underline{\underline{\$.68}}$$

(b) Revenues		\$17,500
Expenses:		
Other than interest	\$8,400	
Bond interest (60 X \$1,000 X .08 X 4/12)	<u>1,600</u>	<u>10,000</u>
Income before income taxes		7,500
Income taxes (40%)		<u>3,000</u>
Net income		<u>\$ 4,500</u>

Diluted earnings per share:

$$\frac{\$4,500 + (1-.40)(\$1,600)}{2,000 + (6,000 \times 1/3 \text{ yr.})} = \frac{\$5,460}{4,000} = \underline{\underline{\$1.37}}$$

(c) Revenues		\$17,500
Expenses:		
Other than interest	\$8,400	
Bond interest (60 X \$1,000 X .08 X 1/2)	2,400	
Bond interest (40 X \$1,000 X .08 X 1/2)	<u>1,600</u>	<u>12,400</u>
Income before income taxes		5,100
Income taxes (40%)		<u>2,040</u>
Net income		<u>\$ 3,060</u>

Diluted earnings per share (see note):

$$\frac{\$3,060 + (1-.40)(\$4,000)}{2,000 + (2,000 \times 1/2 \text{ yr.}) + 4,000 + (2,000 \times 1/2)} = \frac{\$5,460}{8,000} = \underline{\underline{\$.68}}$$

Note: The answer is the same as (a). In both (a) and (c), the bonds are assumed converted for the entire year.

EXERCISE 16-23 (15-20 minutes)

(a) (1) Number of shares for basic earnings per share.

Dates Outstanding	Shares Outstanding	Fraction of Year	Weighted Shares
Jan. 1–April 1	800,000	3/12	200,000
April 1–Dec. 1	1,200,000	9/12	<u>900,000</u>
Weighted average number of shares outstanding			<u>1,100,000</u>

OR

Number of shares for basic earnings per share:

Initial issue of stock	800,000 shares
April 1, 2004 issue (3/4 X 400,000)	<u>300,000 shares</u>
Total	<u>1,100,000 shares</u>

(2) Number of shares for diluted earnings per share:

Dates Outstanding	Shares Outstanding	Fraction of Year	Weighted Shares
Jan. 1–April 1	800,000	3/12	200,000
April 1–July 1	1,200,000	3/12	300,000
July 1–Dec. 31	1,224,000*	6/12	<u>612,000</u>
Weighted average number of shares outstanding			<u>1,112,000</u>

*1,200,000 + [(\$600,000 ÷ 1,000) X 40]

(b) (1) Earnings for basic earnings per share:

After tax net income	<u>\$1,540,000</u>
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(2) Earnings for diluted earnings per share:

After tax net income		\$1,540,000
Add back interest on convertible bonds (net of tax):		
Interest (\$600,000 X .08 X 1/2)	\$24,000	
Less income taxes (40%)	<u>9,600</u>	14,400
Total		<u>\$1,554,400</u>

[Note to instructor: In this problem, the earnings per share computed for basic earnings per share is \$1.40 (\$1,540,000 ÷ 1,100,000) and the diluted earnings per share is \$1.40 (technically \$1.39784). As a result, only one earnings per share number would be presented.]

EXERCISE 16-24 (20-25 minutes)

(a) Net income for year	\$9,500,000
Add: Adjustment for interest (net of tax)	<u>234,000*</u>
	\$9,734,000

*Maturity value	\$5,000,000
Stated rate	X 7%
Cash interest	350,000
Discount amortization [(1.00 – .98) X \$5,000,000 X 1/10]	<u>10,000</u>
Interest expense	360,000
1 – tax rate (35%)	X .65
After-tax interest	<u>\$ 234,000</u>

$\$5,000,000 / \$1,000 = 5,000$ debentures

Increase in diluted earnings per share denominator:

5,000
X 18
<u>90,000</u>

Earnings per share:

Basic EPS	$\$9,500,000 \div 2,000,000 = \4.75
Diluted EPS	$\$9,734,000 \div 2,090,000 = \4.66

- (b) If the convertible security were preferred stock, basic EPS would be the same assuming there were no preferred dividends declared or the preferred was noncumulative. For diluted EPS, the numerator would be the net income amount and the denominator would be 2,090,000.

EXERCISE 16-25 (10-15 minutes)

(a) Net income	\$300,000
Add: Interest savings (net of tax)	
[\$120,000 X (1 – .40)]	<u>72,000</u>
Adjusted net income	<u>\$372,000</u>

$\$2,000,000 \div \$1,000 = 2,000$ bonds

X 15
30,000 shares

Diluted EPS: $\$372,000 \div (100,000 + 30,000) = \underline{\underline{\$2.86}}$

EXERCISE 16-25 (Continued)

(b) Shares outstanding	100,000
Add: Shares assumed to be issued (10,000* X 5)	<u>50,000</u>
Shares outstanding adjusted for dilutive securities	<u>150,000</u>

*\$1,000,000 ÷ \$100

Diluted EPS: (\$300,000 – \$0) ÷ 150,000 = \$2.00

Note: Preferred dividends are not deducted since preferred stock was assumed converted into common stock.

EXERCISE 16-26 (20-25 minutes)

(a)	Diluted
Shares assumed issued on exercise	1,000
Proceeds (1,000 X \$6 = \$6,000)	
Less: Treasury shares purchased (\$6,000/\$20)	<u>300</u>
Incremental shares	<u>700</u>

Diluted EPS = $\frac{\$50,000}{10,000 + 700} = \4.67 (rounded)

(b)	Diluted
Shares assumed issued on exercise	1,000
Proceeds = \$6,000	
Less: Treasury shares purchased (\$6,000/\$20)	<u>300</u>
	700
	<u>X 3/12</u>
Incremental shares	<u>175</u>

Diluted EPS = $\frac{\$50,000}{10,000 + 175} = \4.91 (rounded)

EXERCISE 16-27 (10-15 minutes)

- (a) The contingent shares would have to be reflected in diluted earnings per share because the earnings level is currently being attained.
- (b) Because the earnings level is not being currently attained, contingent shares are not included in the computation of diluted earnings per share.

EXERCISE 16-28 (15-20 minutes)

- (a) Diluted
The warrants are dilutive because the option price (\$10) is less than the average market price (\$15).

$$\text{Incremental shares} = \frac{\$15 - \$10}{\$15} \times 15,000 = \underline{5,000}$$

OR

Proceeds from assumed exercise: (15,000 warrants X \$10 exercise price)	\$150,000
Treasury shares purchasable with proceeds: (\$150,000 ÷ \$15 average market price)	<u>10,000</u>
Incremental shares issued: (15,000 shares issued less 10,000 purchased)	<u>5,000</u>

- (b) Basic EPS = \$3.60
(\$360,000 ÷ 100,000 shares)
- (c) Diluted EPS = \$3.43
(\$360,000 ÷ 105,000 shares)

TIME AND PURPOSE OF PROBLEMS

Problem 16-1 (Time 35-40 minutes)

Purpose—to provide the student with an opportunity to prepare entries to properly account for a series of transactions involving the issuance and exercise of common stock rights and detachable stock warrants, plus the granting and exercise of stock options. The student is required to prepare the necessary journal entries to record these transactions and the stockholders' equity section of the balance sheet as of the end of the year.

Problem 16-2 (Time 45-50 minutes)

Purpose—to provide the student with an understanding of the entries to properly account for convertible debt. The student is required to prepare the journal entries to record the conversion, amortization, and interest in connection with these bonds on specified dates.

Problem 16-3 (Time 30-35 minutes)

Purpose—to provide the student with an understanding of the entries to properly account for a stock option plan over a period of years. The student is required to prepare the journal entries when the stock option plan was adopted, when the options were granted, when the options were exercised, and when the options expired.

Problem 16-4 (Time 30-35 minutes)

Purpose—to provide the student with an understanding of the effect options and convertible bonds have on the computation of the weighted average number of shares outstanding with regard to basic EPS and diluted EPS. Preferred stock dividends must also be computed.

Problem 16-5 (Time 30-35 minutes)

Purpose—to provide the student with an understanding of the proper computation of the weighted average number of shares outstanding for two consecutive years. The student is also asked to determine whether the capital structure presented is simple or complex. A two-year comparative income statement with appropriate EPS presentation is also required.

Problem 16-6 (Time 35-45 minutes)

Purpose—the calculation of the number of shares used to compute basic and diluted earnings per share is complicated by a stock dividend, a stock split, and several issues of common stock during the year. To be determined are the number of shares to compute basic EPS, the number of shares to compute diluted EPS, and the numerator for computing basic EPS.

Problem 16-7 (Time 25-35 minutes)

Purpose—to provide the student a problem with multiple dilutive securities which must be analyzed to compute basic and diluted EPS.

Problem 16-8 (Time 30-40 minutes)

Purpose—the student calculates the weighted average number of common shares for computing earnings per share and prepares a comparative income statement including earnings per share data. In addition, the student explains a simple capital structure and the earnings per share presentation for a complex capital structure.

SOLUTIONS TO PROBLEMS

PROBLEM 16-1

(a) 1. Memorandum entry made to indicate the number of rights issued.

2.	Cash	200,000	
	Discount on Bonds Payable*	15,385	
	Bonds Payable		200,000
	Paid-in Capital—Stock Warrants**		15,385

***Allocated to Bonds:**

$$\begin{array}{r} \underline{\$96} \\ \$96 + \$8 \end{array} \times \$200,000 = \$184,615;$$

$$\text{Discount} = \$200,000 - \$184,615 = \$15,385$$

****Allocated to Warrants:**

$$\begin{array}{r} \underline{\$8} \\ \$96 + \$8 \end{array} \times \$200,000 = \$15,385$$

3.	Cash*	288,000	
	Common Stock (9,000 X \$10)		90,000
	Paid-in Capital in Excess of Par		198,000

$$\begin{array}{l} *[(100,000 - 10,000) \text{ rights exercised}] \div \\ (10 \text{ rights/share}) \times \$32 = \$288,000 \end{array}$$

4.	Paid-in Capital—Stock Warrants	12,308	
	(15,385 X 80%)		
	Cash*	48,000	
	Common Stock (1,600 X \$10)		16,000
	Paid-in Capital in Excess of Par		44,308

$$\begin{array}{l} *.80 \times \$200,000 / \$100 \text{ per bond} = 1,600 \\ \text{warrants exercised; } 1,600 \times \$30 = \$48,000 \end{array}$$

PROBLEM 16-1 (Continued)

5. Compensation Expense*	50,000	
Paid-in Capital—Stock Options.....		50,000

*\$10 X 5,000 options = \$50,000

6. <u>For options exercised:</u>		
Cash (4,000 X \$30)	120,000	
Paid-in Capital—Stock Options.....	40,000	
(80% X \$50,000)		
Common Stock (4,000 X \$10).....		40,000
Paid-in Capital in Excess of Par		120,000

For options lapsed:

Paid-in Capital—Stock Options.....	10,000	
Compensation Expense*		10,000

*(Note to instructor: This entry provides an opportunity to indicate that a credit to Compensation Expense occurs when the employee fails to fulfill an obligation, such as remaining in the employ of the company, performing certain job functions, etc. Conversely, if a stock option lapses because the stock price is lower than the exercise price, then a credit to Paid-in Capital—Expired Stock Options occurs.)

(b) Stockholders' Equity:

Paid-in Capital:

Common Stock, \$10 par value, authorized 1,000,000 shares, 314,600 shares issued and outstanding		\$3,146,000	
Paid-in Capital in Excess of Par*		962,308	
Paid-in Capital—Stock Warrants*		<u>3,077</u>	\$4,111,385
Retained Earnings			<u>750,000</u>
Total Stockholders' Equity			<u>\$4,861,385</u>

*These two accounts often are combined into one category called Additional Paid-in Capital, for financial reporting purposes.

PROBLEM 16-1 (Continued)

Calculations:

	Common Stock	Paid-in Capital in Excess of Par
At beginning of year	300,000 shares	\$600,000
From stock rights (entry #3 above)	9,000 shares	198,000
From stock warrants (entry #4 above)	1,600 shares	44,308
From stock options (entry #6 above)	<u>4,000 shares</u>	<u>120,000</u>
Total	<u>314,600 shares</u>	<u>\$962,308</u>

PROBLEM 16-2

(a) **Entries at August 1, 2005**

Bonds Payable	150,000	
Discount on Bonds Payable (Schedule 1).....		3,032*
Common Stock (8 X 150 X \$100)		120,000
Paid-in Capital in Excess of Par		26,968**
(To record the issuance of 1,200 shares of common stock in exchange for \$150,000 of bonds and the write-off of the discount on bonds payable)		

*(\$34,000 X 1/10) X (107/120)
 **(\$150,000 – \$3,032) – \$120,000

Interest Payable	1,500	
Cash (\$150,000 X 12% X 1/12).....		1,500
(To record payment in cash of interest accrued on bonds converted as of August 1, 2005)		

(b) **Entries at August 31, 2005**

Bond Interest Expense	255*	
Discount on Bonds Payable (Schedule 1).....		255
(To record amortization of one month's discount on \$1,350,000 of bonds)		

*(\$34,000 X 90%) X (1/120)

Bond Interest Expense	13,500	
Interest Payable (\$1,350,000 X 12% X 1/12)....		13,500
(To record accrual of interest for August on \$1,350,000 of bonds at 12%)		

(c) **Entries at December 31, 2005**
 (Same as August 31, 2005, and the following closing entry)

Income Summary	175,756	
Bond Interest Expense*		175,756
(To close expense account)		

*(\$3,256 + \$172,500)

PROBLEM 16-2 (Continued)

Schedule 1
Monthly Amortization Schedule

Unamortized discount on bonds payable:

Amount to be amortized over 120 months	<u>\$34,000</u>
Amount of monthly amortization ($\$34,000 \div 120$)	<u>\$283</u>
Amortization for 13 months to July 31, 2005 ($\$283 \times 13$)	<u>\$3,679</u>
Balance unamortized 7/31/05 ($\$34,000 - \$3,679$)	<u>\$30,321</u>
10% applicable to debentures converted	<u>3,032</u>
Balance August 1, 2005	<u>\$27,289</u>
Remaining monthly amortization over remaining 107 months	<u>\$255</u>

Schedule 2
Interest Expense Schedule

Amortization of bond discount charged to bond interest expense in 2005 would be as follows:

7 months X \$283.00	\$1,981
5 months X \$255.00	1,275
Total	<u>\$3,256</u>

Interest on Bonds:

12% on \$1,500,000	<u>\$180,000</u>
Amount per month ($\$180,000 \div 12$)	<u>\$15,000</u>
12% on \$1,350,000	<u>\$162,000</u>
Amount per month ($\$162,000 \div 12$)	<u>\$13,500</u>
Interest for 2005 would be as follows:	
7 months X \$15,000	\$105,000
5 months X \$13,500	<u>67,500</u>
Total	<u>\$172,500</u>

Total interest

Amortization of discount	\$ 3,256
Cash interest paid	<u>172,500</u>
Bond interest expense	<u>\$175,756</u>

PROBLEM 16-3

2002. No journal entry would be recorded at the time the stock option plan was adopted. However, a memorandum entry in the journal might be made on November 30, 2002, indicating that a stock option plan had authorized the future granting to officers of options to buy 70,000 shares of \$5 par value common stock at \$8 a share.

<u>2003</u>	January 2		
	No entry		
	December 31		
	Compensation Expense	132,000	
	Paid-in Capital—Stock Options		132,000
	(To record compensation expense attributable to 2003—22,000 options at \$6 (\$14 – \$8))		

<u>2004</u>	December 31		
	Compensation Expense	120,000	
	Paid-in Capital—Stock Options		120,000
	(To record compensation expense attributable to 2004—20,000 options at \$6 (\$14 – \$8))		
	Paid-in Capital—Stock Options	132,000	
	Paid-in Capital from Expired Stock Options.....		132,000
	(To record lapse of president’s and vice president’s options to buy 22,000 shares)		

(Note to instructor: This entry provides an opportunity to indicate when a credit to compensation expense might result. APB Opinion No. 25, as well as SFAS No. 123, states that if a stock option is not exercised because an employee fails to fulfill an obligation, the estimate of compensation expense recorded in previous periods should be adjusted (as a change in estimate) by decreasing compensation expense in the period of forfeiture and debiting the paid-in capital account.)

PROBLEM 16-3 (Continued)

2005

December 31

Cash (20,000 X \$8)	160,000	
Paid-in Capital—Stock Options	120,000	
(20,000 X \$6)		
Common Stock (20,000 X \$5)		100,000
Paid-in Capital in Excess of Par		180,000
(To record issuance of 20,000 shares of \$5 par value stock upon exercise of options at option price of \$8 and a market price of \$14 at date of grant)		

PROBLEM 16-4

The computation of Dewey Yaeger Pharmaceutical Industries' basic earnings per share and the diluted earnings per share for the fiscal year ended June 30, 2005, are shown below.

$$\begin{aligned}
 \text{(a) Basic earnings per share} &= \frac{\text{Net income} - \text{Preferred dividends}}{\text{Average common shares outstanding}} \\
 &= \frac{\$1,500,000 - \$106,250^1}{1,000,000} \\
 &= \frac{\$1,393,750}{1,000,000} \\
 &= \underline{\$1.3937} \text{ or } \underline{\$1.39} \text{ per share}
 \end{aligned}$$

$$\begin{aligned}
 ^1\text{Preferred dividend} &= .085 \times \$1,250,000 \\
 &= \$106,250
 \end{aligned}$$

$$\begin{aligned}
 \text{(b) Diluted earnings per share} &= \frac{\text{Net income} - \text{Preferred dividends} + \text{Interest (net of tax)}}{\text{Average common shares} + \text{Potentially dilutive common shares}} \\
 &= \frac{\$1,500,000 - \$106,250 + \$210,000^2}{1,000,000 + 250,000^3 + 25,000^4} \\
 &= \frac{\$1,603,750}{1,275,000} \\
 &= \underline{\$1.2578} \text{ or } \underline{\$1.26} \text{ per share}
 \end{aligned}$$

$$\begin{aligned}
 ^2\text{Use "if converted" method for 7\% bonds} \\
 \text{Adjustment for interest expense (net of tax)} \\
 (\$5,000,000 \times .07 \times .6)
 \end{aligned}$$

\$210,000

$$\begin{aligned}
 ^3\text{Shares assumed to be issued if converted} \\
 \$5,000,000 \div \$1,000/\text{bond} \times 50 \text{ shares}
 \end{aligned}$$

250,000

PROBLEM 16-4 (Continued)

⁴Use treasury stock method to determine incremental shares outstanding

Proceeds from exercise of options (100,000 X \$15)	<u>\$1,500,000</u>
Shares issued upon exercise of options	100,000
Shares purchasable with proceeds (Proceeds ÷ Average market price) (\$1,500,000 ÷ \$20)	<u>75,000</u>
Incremental shares outstanding	<u>25,000</u>

PROBLEM 16-5

- (a) Hillel Corporation has a simple capital structure since it does not have any potentially dilutive securities.
- (b) The weighted average number of shares that Hillel Corporation would use in calculating earnings per share for the fiscal years ended May 31, 2003, and May 31, 2004, is 2,800,000 and 3,400,000 respectively, calculated as follows:

Event	Dates Outstanding	Shares Outstanding	Restatement	Fraction of Year	Weighted Shares
Beginning balance	June 1–Oct. 1	2,000,000	1.20	4/12	800,000
New Issue	Oct. 1–May 31	2,500,000	1.20	8/12	<u>2,000,000</u>
					<u>2,800,000</u>

Event	Dates Outstanding	Shares Outstanding	Restatement	Fraction of Year	Weighted Shares
Beginning balance	June 1–Dec. 1	3,000,000		6/12	1,500,000
New Issue	Dec. 1–May 31	3,800,000		6/12	<u>1,900,000</u>
					<u>3,400,000</u>

(c) **HILLEL CORPORATION**
Comparative Income Statement
For Fiscal Years Ended May 31, 2003 and 2004

	2003	2004
Income from operations	\$1,800,000	\$2,500,000
Interest expense ¹	<u>240,000</u>	<u>240,000</u>
Income before taxes	1,560,000	2,260,000
Income taxes at 40%	<u>624,000</u>	<u>904,000</u>
Income before extraordinary item	936,000	1,356,000
Extraordinary loss, net of income taxes of \$200,000		<u>300,000</u>
Net income	<u>\$936,000</u>	<u>\$1,056,000</u>
Earnings per share:		
Income before extraordinary loss	\$.31 ²	\$.38 ³
Extraordinary loss		<u>.09⁴</u>
Net income	<u>\$.31</u>	<u>\$.29⁵</u>

PROBLEM 16-5 (Continued)

$$\begin{aligned} {}^1\text{Interest expense} &= \$2,400,000 \times .10 \\ &= \$240,000 \end{aligned}$$

$$\begin{aligned} {}^2\text{Earnings per share} &= \frac{(\text{Net income} - \text{Preferred dividends})}{\text{Weighted Average Number of Common Shares}} \\ &= \frac{(\$936,000 - \$80,000^*)}{2,800,000} \\ &= \underline{\$.31} \text{ per share} \end{aligned}$$

$$\begin{aligned} {}^*\text{Preferred dividends} &= (\text{No. of Shares} \times \text{Par Value} \times \text{Dividend \%}) \\ &= (20,000 \times \$50 \times .08) \\ &= \$80,000 \text{ per year} \end{aligned}$$

$$\begin{aligned} {}^3\text{Earnings per share} &= \frac{(\$1,356,000 - \$80,000)}{3,400,000} \\ &= \underline{\$.38} \text{ per share} \end{aligned}$$

$$\begin{aligned} {}^4\text{Earnings per share} &= \frac{\text{Extraordinary Item}}{\text{Weighted Average Common Shares}} \\ &= \frac{\$300,000}{3,400,000} \\ &= \underline{\$.09} \text{ per share} \end{aligned}$$

$$\begin{aligned} {}^5\text{Earnings per share} &= \frac{\text{Net Income} - \text{Preferred Dividends}}{\text{Weighted Average Common Shares}} \\ &= \frac{\$1,056,000 - \$80,000}{3,400,000} \\ &= \underline{\$.29} \end{aligned}$$

PROBLEM 16-6

- (a) The number of shares used to compute basic earnings per share is 6,736,000, as calculated below.

Event	Dates Outstanding	Shares Outstanding	Restatement	Fraction of Year	Weighted Shares
Beginning Balance, including 5% stock dividend	Jan. 1–Apr. 1	3,150,000	2.0	3/12	1,575,000
Conversion of preferred stock	Apr. 1–July 1	3,360,000	2.0	3/12	1,680,000
Stock split	July 1–Aug. 1	6,720,000		1/12	560,000
Issued shares for building	Aug. 1–Nov. 1	7,020,000		3/12	1,755,000
Purchase of Treasury stock	Nov. 1–Dec. 31	6,996,000		2/12	<u>1,166,000</u>
Total number of common shares to compute basic earnings per share					<u><u>6,736,000</u></u>

- (b) The number of shares used to compute diluted earnings per share is 7,891,000, as shown below.

Number of shares to compute basic earnings per share	6,736,000
Convertible preferred stock—still outstanding (500,000 X 2 X 1.05)	1,050,000
Convertible preferred stock—converted (200,000 X 2 X 1.05 X 3/12)	<u>105,000</u>
Number of shares to compute diluted earnings per share	<u><u>7,891,000</u></u>

- (c) The adjusted net income to be used as the numerator in the basic earnings per share calculation for the year ended December 31, 2004, is \$11,900,000, as computed below.

After-tax net income	\$13,550,000
Preferred stock dividends	
March 31 (700,000 X \$.75)	\$ 525,000
June 30, September 30, and December 31 (500,000 X \$.75 X 3)	<u>1,125,000</u>
Adjusted net income	<u><u>\$11,900,000</u></u>

PROBLEM 16-7

$$(a) \text{ Basic EPS} = \frac{\$1,200,000 - (\$3,000,000 \times .06)}{600,000^*}$$

$$= \underline{\$1.70} \text{ per share}$$

*\$6,000,000 ÷ \$10

$$(b) \text{ Diluted EPS} = \frac{(\text{Net income} - \text{Preferred dividends}) + \text{Interest savings (net of tax)}}{\text{Average common shares} + \text{Potentially dilutive common shares}}$$

$$= \frac{\$1,200,000 - \$180,000^a + \$96,000^b}{600,000 + 10,000^c + 80,000^d}$$

$$= \frac{\$1,116,000}{690,000}$$

$$= \underline{\$1.62} \text{ per share}$$

^a\$3,000,000 X .06; Preferred stock is not assumed converted since conversion would be antidilutive.

^b\$2,000,000 X .08 X (1 - .40)

$$\frac{m - o}{m} \times \# \text{ of options} = \text{incremental shares}$$

$$\frac{\$25 - \$20}{\$25} \times 50,000 = 10,000$$

^d(\$2,000,000 ÷ \$1,000) X 40 shares/bond

PROBLEM 16-8

(a)	Weighted Average Shares	
	Before Stock Dividend	After Stock Dividend
Total as of June 1, 2002	1,500,000	1,800,000
Issue of September 1, 2002	<u>400,000</u>	<u>480,000</u>
Total as of May 31, 2004	<u>1,900,000</u>	<u>2,280,000</u>
1. 1,800,000 X 3/12 =		450,000
2,280,000 X 9/12 =		<u>1,710,000</u>
Total		<u>2,160,000</u>
2. 2,280,000 X 12/12		<u>2,280,000</u>

(b) **CORDELIA CORPORATION**
Comparative Income Statement
For the Years Ended May 31, 2004 and 2003

	2004	2003
Income from operations before income taxes	\$1,400,000	\$660,000
Income taxes	<u>560,000</u>	<u>264,000</u>
Income before extraordinary item	840,000	396,000
Extraordinary item—loss from earthquake, less applicable income taxes of \$200,000	<u>300,000</u>	<u> </u>
Net income	<u>\$ 540,000</u>	<u>\$ 396,000</u>
Per share of common stock		
Income before extraordinary item	\$.24 ¹	\$.04 ³
Extraordinary loss, net of tax	<u>(.13)⁴</u>	
Net income	<u>\$.11²</u>	<u>\$.04</u>

PROBLEM 16-8 (Continued)

$$\text{EPS calculations} = \frac{\text{Net income} - \text{Preferred dividends}}{\text{Weighted average common shares}}$$

$$\text{Preferred dividends} = 50,000 \times \$100 \times .06 = \$300,000$$

$$\text{Extraordinary loss per share calculation} = \frac{\text{Loss}}{\text{Weighted average common shares}}$$

$$^1(\$840,000 - \$300,000) \div 2,280,000 = \$.24$$

$$^2(\$540,000 - \$300,000) \div 2,280,000 = \$.11$$

$$^3(\$396,000 - \$300,000) \div 2,160,000 = \$.04$$

$$^4\$300,000 \div 2,280,000 = \$.13$$

- (c) 1. A corporation's capital structure is regarded as simple if it consists only of common stock or includes no potentially dilutive securities. Cordelia Corporation has a simple capital structure because it has not issued any convertible securities, warrants, or stock options, and there are no existing rights or securities that are potentially dilutive of its earnings per common share.
2. A corporation having a complex capital structure would be required to make a dual presentation of earnings per share; i.e., both basic earnings per share and diluted earnings per share. This assumes that the potentially dilutive securities are not antidilutive.

The basic earnings per share computation uses only the weighted average of the common stock outstanding. The diluted earnings per share computation assumes the conversion or exercise of all potentially dilutive securities that are not antidilutive.

TIME AND PURPOSE OF CASES

Case 16-1 (Time 20-25 minutes)

Purpose—to provide the student with an understanding of the underlying rationale behind the accounting treatments for the issuance of convertible bonds versus the situation when the debt instrument and the warrants are separable. The student is required to describe the differences that exist in accounting for the original proceeds of these two types of issuances, and the arguments which have been presented in support of these differences. This case also requires the interpretation of a situation involving an issuance of long-term notes and warrants, and the preparation of the necessary journal entry.

Case 16-2 (Time 15-20 minutes)

Purpose—the student discusses the ethical issues related to an earnings-based compensation plan.

Case 16-3 (Time 15-20 minutes)

Purpose—to provide the student with an understanding of the proper accounting and conceptual merits for the issuance of stock warrants to three different groups: existing stockholders, key employees, and purchasers of the company's bonds. This problem requires the student to explain and discuss the reasons for using warrants, the significance of the price at which the warrants are issued (or granted) in relation to the current market price of the company's stock, and the necessary information that should be disclosed in the financial statements when stock warrants are outstanding for each of the groups.

***Case 16-4** (Time 25-30 minutes)

Purpose—to provide the student with an understanding of the concepts surrounding a plan adopted by a company to give additional incentive compensation to its dealers and a stock appreciation rights (SAR) plan. The student is required to compute the amount of selling expense which should be reported in each of the years covered by the incentive compensation program. This case also requires an explanation of what a stock appreciation rights plan is and the potential disadvantages of an SAR plan from the viewpoint of the company.

Case 16-5 (Time 25-30 minutes)

Purpose—to provide the student with an opportunity to respond to a contrary view of the FASB's standard on "Accounting for Stock-Based Compensation," and to defend the concept of neutrality in financial accounting and reporting.

Case 16-6 (Time 25-35 minutes)

Purpose—to provide the student with an understanding of how earnings per share is affected by preferred dividends and convertible debt. The student is required to explain how preferred dividends and convertible debt are handled for EPS computations. The student is also required to explain when the "treasury stock method" is applicable in EPS computations.

Case 16-7 (Time 25-35 minutes)

Purpose—to provide the student with some familiarity with the applications of **APB Opinion No. 15** dealing with earnings per share. The student is required to explain the general concepts of EPS in regard to a specific capitalization structure, and to discuss the proper treatment, if any, that should be given to a list of items in computing earnings per share of common stock for financial statement reporting.

Case 16-8 (Time 25-35 minutes)

Purpose—to provide the student with an opportunity to articulate the concepts and procedures related to antidilution. Responses are provided in a written memorandum.

SOLUTIONS TO CASES

CASE 16-1

- (a) 1. When the debt instrument and the option to acquire common stock are inseparable, as in the case of convertible bonds, the entire proceeds of the bond issue should be allocated to the debt and the related premium or discount accounts.

When the debt and the warrants are separable, the proceeds of their sale should be allocated between them. The basis of allocation is their relative fair values. As a practical matter, these relative values are usually determined by reference to the price at which the respective instruments are traded in the open market.

Thus, if the debt alone would bring six times as much as would the stock warrants if sold separately, one-seventh of the total proceeds should be apportioned to the warrants and six-sevenths to the debt securities. That portion of the proceeds assigned to the warrants should be accounted for as paid-in capital. The result may be that the debt is issued at a reduced premium or at a discount.

2. In the case of convertible debt there are two principal reasons why all the proceeds should be ascribed to the debt. First, the option is inseparable from the debt. The investor in such securities has two mutually exclusive choices: be a creditor and later receive cash for the security; or give up all rights as a creditor and become a stockholder. There is no way to retain one right while selling the other. Second, the valuation of the conversion option or the debt security without the conversion option presents practical problems. For example, in the absence of separate transferability, no separate market values are established and the only values which could be assigned to each would be subjective.

Separability of the debt and the warrants and the establishment of a market value for each results in an objective basis for allocating proceeds to the two different equities—creditors' and stockholders'—involved.

3. Arguments have been advanced that accounting for convertible debt should be the same as for debt issued with detachable stock purchase warrants. Convertible debt has features of debt and stockholders' equity, and separate recognition should be given to those characteristics at the time of issuance. Difficulties encountered in separating the relative values of the features are not insurmountable and, in any case, should not result in a solution which ignores the problem. In effect, the company is selling a debt instrument and a call on its stock. Coexistence of the two features in one instrument is no reason why each cannot receive its proper accounting recognition. The practical difficulties of estimation of the relative values may be overcome with reliable professional advice. Allocation is a well-recognized accounting technique and could be applied in this case once reliable estimates of the relative values are known. If the convertible feature was added in order to sell the security at an acceptable price, the value of the convertible option is obviously material and recognition is essential. The question of whether or not the purchaser will exercise the option is not relevant to reflecting the separate elements at the time of issuance.

(b)	Cash	20,040,000	
	Discount on Bonds Payable (\$18,000,000 X 22%)	3,960,000	
	Bonds Payable		18,000,000
	Paid-in Capital—Stock Warrants (\$23 – \$18) X 1,200,000		6,000,000

To record issuance of bonds at 22% discount with options to buy 1,200,000 shares of the company's \$10 par common stock at a price of \$5 a share below the current market value. Debt matures in ten years in equal annual installments of \$1,800,000 and warrants, if not exercised, lapse as bonds mature.

CASE 16-2

- (a) Becker recognizes that altering the estimate will benefit Reiser and other executive officers of the company. Current stockholders and investors will be forced to pay out the bonuses, with the altered estimate as a critical factor.
- (b) The accountant's decision should not be based on the existence of the compensation plan.
- (c) Reiser's request should be denied.

CASE 16-3

- (a)
 1. The objective of issuing warrants to existing stockholders on a pro-rata basis is to raise new equity capital. This method of raising equity capital may be used because of preemptive rights on the part of a company's stockholders and also because it is likely to be less expensive than a public offering.
 2. The purpose of issuing stock warrants to certain key employees, usually in the form of a non-qualified stock option plan, is to increase their interest in the long-term growth and income of the company and to attract new management talent. Also, this issuance of stock warrants to key employees under a stock option plan frequently constitutes an important element in a company's executive compensation program. Though such plans result in some dilution of the stockholders' equity when shares are issued, the plans provide an additional incentive to the key employees to operate the company efficiently.
 3. Warrants to purchase shares of its common stock may be issued to purchasers of a company's bonds in order to stimulate the sale of the bonds by increasing their speculative appeal and aiding in overcoming the objection that rising price levels cause money invested for long periods in bonds to lose purchasing power. The use of warrants in this connection may also permit the sale of the bonds at a lower interest cost.
- (b)
 1. Because the purpose of issuing warrants to existing stockholders is to raise new equity capital, the price specified in the warrants must be sufficiently below the current market price to reasonably assure that they will be exercised. Because the success of the offering depends entirely on the current market price of the company's stock in relation to the exercise price of the warrants, and because the objective is to raise capital, the length of time over which the warrants can be exercised is very short, frequently 60 days.
 2. Warrants may be offered to key employees below, at, or above the market price of the stock on the day the rights are granted except for incentive stock option plans. If a stock option plan is to provide a strong incentive, warrants that can be exercised shortly after they are granted and expire, say, within two or three years, usually must be exercisable at or near the market price at the date of the grant. Warrants that cannot be exercised for a number of years after they are granted or those that do not lapse for a number of years after they become exercisable may, however, be priced somewhat above the market price of the stock at the date of the grant without eliminating the incentive feature. This does not upset the principal objective of stock option plans, heightening the interest of key employees in the long-term success of the company.
 3. Income tax laws impose no restrictions on the exercise price of warrants issued to purchasers of a company's bonds. The exercise price may be above, equal to, or below the current market price of the company's stock. The longer the period of time during which the warrant can be exercised, however, the higher the exercise price can be and still stimulate the sale of the bonds because of the increased speculation appeal. Thus, the significance of the length of time over which the warrants can be exercised depends largely on the exercise price (or prices). A low exercise price in combination with a short exercise period can be just as successful as a high exercise price in combination with a long exercise period.

CASE 16-3 (Continued)

- (c)
1. Financial statement information concerning outstanding stock warrants issued to a company's stockholders should include a description of the stock being offered for sale, the option price, the time period during which the rights may be exercised, and the number of rights needed to purchase a new share.
 2. Financial statement information concerning stock warrants issued to key employees should include the following: status of these plans at the end of each period presented, including the number of shares under option, options exercised and forfeited, the weighted average option prices for these categories, the weighted average fair value of options granted during the year, and the average remaining contractual life of the options outstanding. If APB Opinion No. 25 is used in the financial statements, these companies must still disclose the pro-forma net income and pro-forma net income per share, as if the fair value method had been used to account for the stock-based compensation cost.
 3. Financial statement disclosure of outstanding stock warrants that have been issued to purchasers of a company's bonds should include the prices at which they can be exercised, the length of time they can be exercised, and the total number of shares that can be purchased by the bondholders.

*CASE 16-4

- (a) The key to this problem is determination of the date on which the selling expense should be measured. The case presented here is analogous to a stock compensation situation explained in the chapter and it would be handled in the same manner. One may ask the question, "At what date did Sanford Co. forego its use of the shares?" Sanford gave up (granted) the 9,000 shares to the trust in 2002, not 2005, and therefore in 2002 Sanford gave up its interest in these shares irrevocably and has no further recourse. Even if the dealers do not perform satisfactorily, Sanford has forfeited its right to these shares.

In class, students will come up with many different answers (notably \$990,000 or \$110 per share), but it should be emphasized that Sanford gave up its compensation at date of grant and any increase in price subsequent to this point is a speculative gain or loss. The price that Sanford had in mind at date of grant was \$72,000. Assignment of the \$72,000 equally over the three years appears most appropriate, although some students might argue that some relationship with the change in the market price of the stock should be established. This approach has merit because the market price of the stock might be reflective of the benefits received from the dealers. However, that relationship is quite tenuous and a straight-line assignment appears the most reasonable from the information provided.

- (b) In a stock appreciation rights plan, the executive is given the right to receive share appreciation, which is defined as the excess of the market price of stock at the date of exercise over a preestablished price. This share appreciation may be paid in cash, shares, or a combination of both. The major advantage of SARs is that the executive often does not have to make a cash outlay at the date of exercise, but receives a payment for the share appreciation which may be used to pay any related income taxes.

A potential disadvantage from the viewpoint of the company is that the company has little control over the amount of compensation expense. Compensation expense to a real extent is a function of stock price changes which can lead to significant fluctuations in the amount of compensation expense recorded.

CASE 16-5

- (a) In 1995, the FASB issued SFAS No. 123, *Accounting for Stock-Based Compensation*, that requires new accounting for employee stock options and other awards which are based on the price of a corporation's stock.

Generally, the standard indicates that employee stock options be treated like all other types of compensation and that their value be included in financial statements as part of the cost of employing people. The standard encourages but does not require that all types of stock options, fixed or variable, be recognized as compensation based on the fair value of the options. Fair value for public companies would be estimated using an option-pricing model. No adjustments after the grant date would be made for changes in the stock price—either up or down. Nonpublic companies would be permitted to use a “minimum value” method to estimate the value of their options. That method does not consider the volatility of the stock for which the employee is granted an option.

For both public and nonpublic companies, the value of the award would be charged to expense over the period in which employees provide the related service, which is considered the vesting period.

The standard would change current practice to recognize expense for fixed options for which none now is recognized. The accounting, however, often would result in less expense when applied to variable option plans. The maximum amount of expense resulting from a variable plan would be determined at the date of grant, rather than varying throughout the option period with stock market swings as it does today. The standard would level the playing field for different types of plans, and companies would be able to select compensation programs that achieve their desired economic objectives without overriding concerns about accounting results.

It should be noted, however, that companies can still elect to use APB Opinion No. 25 accounting. However, the note disclosure for companies using APB Opinion No. 25 must indicate what compensation expense would be under a fair value option pricing approach.

- (b) Here is an excerpt from a presentation given by Dennis Beresford on the concept of neutrality.

The Board often hears that we should take a broader view, that we must consider the economic consequences of a new accounting standard. The FASB should not act, critics maintain, if a new accounting standard would have undesirable economic consequences. We have been told that the effects of accounting standards could cause lasting damage to American companies and their employees. Some have suggested, for example, that recording the liability for retiree health care or the costs for stock-based compensation will place U.S. companies at a competitive disadvantage. These critics suggest that because of accounting standards, companies may reduce benefits or move operations overseas to areas where workers do not demand the same benefits. These assertions are usually combined with statements about desirable goals, like providing retiree health care or creating employee incentives.

There is a common element in those assertions. The goals are desirable but the means require that the Board abandon neutrality and establish reporting standards that conceal the financial impact of certain transactions from those who use financial statements. Costs of transactions exist whether or not the FASB mandates their recognition in financial statements. For example, not requiring the recognition of the cost of stock options or ignoring the liabilities for retiree health care benefits does not alter the economics of the transactions. It only withholds information from investors, creditors, policy makers, and others who need to make informed decisions and, eventually, impairs the credibility of financial reports.

One need only look to the collapse of the thrift industry to demonstrate the consequences of abandoning neutrality. During the 1970s and 1980s, regulatory accounting principles (RAP) were altered to obscure problems in troubled institutions. Preserving the industry was considered a greater good.

CASE 16-5 (Continued)

Many observers believe that the effect was to delay action and hide the true dimensions of the problem. The public interest is best served by neutral accounting standards that inform policy rather than promote it. Stated simply, truth in accounting is always good policy.

Neutrality does not mean that accounting should not influence human behavior. We expect that changes in financial reporting will have economic consequences, just as economic consequences are inherent in existing financial reporting practices. Changes in behavior naturally follow from more complete and representationally faithful financial statements. The fundamental question, however, is whether those who measure and report on economic events should somehow screen the information before reporting it to achieve some objective. In FASB Concepts Statement No. 2, *Qualitative Characteristics of Accounting Information* (paragraph 102), the Board observed:

Indeed, most people are repelled by the notion that some “big brother,” whether government or private, would tamper with scales or speedometers surreptitiously to induce people to lose weight or obey speed limits or would slant the scoring of athletic events or examinations to enhance or decrease someone’s chances of winning or graduating. There is no more reason to abandon neutrality in accounting measurement.

The Board continues to hold that view. The Board does not set out to achieve particular economic results through accounting pronouncements. We could not if we tried. Beyond that, it is seldom clear which result we should seek because our constituents often have opposing viewpoints. Governments, and the policy goals they adopt, frequently change.

CASE 16-6

- (a) Dividends on outstanding preferred stock must be subtracted from net income or added to net loss for the period before computing EPS on the common shares. This generalization will be modified by the various features and different requirements preferred stock may have with respect to dividends. Thus, if preferred stock is cumulative, it is necessary to subtract its current dividend requirements from net income (or to add them to net loss) regardless of whether or not the preferred dividends were actually declared. Where the preferred shares are noncumulative, only preferred dividends actually declared during the current period need be subtracted from net income (or added to net loss) to arrive at the income to be used in EPS calculations.

In case the preferred shares are convertible into common stock, when assuming conversion, dividend requirements on the preferred shares are not deducted from net income. This applies when testing for potential dilution to determine whether or not the diluted EPS figures for the period are lower than earnings per common share figures.

- (b) When options and warrants to buy common stock are outstanding and their exercise price (i.e., proceeds the corporation would derive from issuance of common stock pursuant to the warrants and options) is less than the average price at which the company could acquire its outstanding shares as treasury stock, the treasury stock method is generally applicable. In these circumstances, existence of the options and warrants would be dilutive. However, if the exercise price of options and warrants exceeded the average price of the common stock, the cash proceeds from their assumed exercise would provide for repurchasing more common shares than were issued when the warrants were exercised, thereby reducing the number of shares outstanding. In these circumstances assumed exercise of the warrants would be antidilutive, so exercise would not be presumed for purposes of computing diluted EPS.
- (c) In arriving at the calculation of diluted EPS figures where convertible debentures are assumed to be converted, their interest (net of tax) is added back to net income as the numerator element of the EPS calculation while the weighted average number of shares of common stock into which they would be convertible is added to the shares outstanding to arrive at the denominator element of the calculation.

CASE 16-7

- (a) Earnings per share, as it applies to a corporation with a capitalization structure composed of only one class of common stock, is the amount of earnings applicable to each share of common stock outstanding during the period for which the earnings are reported. The computation of earnings per share should be based on a weighted average of the number of shares outstanding during the period with retroactive recognition given to stock splits or reverse splits and to stock dividends. The computation should be made for income from continuing operations, income before extraordinary items, income before accounting change, and net income. Companies that report a discontinued operation, an extraordinary item, or the cumulative effect of an accounting change should present per share amounts for those line items either on the face of the income statement or in the notes to the financial statements.
- (b) Treatments to be given to the listed items in computing earnings per share are:
1. Outstanding preferred stock with a par value liquidation right issued at a premium, although affecting the determination of book value per share, will not affect the computation of earnings per share for common stock except with respect to the dividends as discussed in (b) 4. below.
 2. The exercise of a common stock option results in an increase in the number of shares outstanding, and the computation of earnings per share should be based on the weighted average number of shares outstanding during the period. The exercise of a stock option by the grantee does not affect earnings, but any compensation to the officers from the granting of the options would reduce net income and earnings per share.
 3. The replacement of a machine immediately prior to the close of the current fiscal year will not affect the computation of earnings per share for the year in which the machine is replaced. The number of shares remains unchanged and since the old machine was sold for its book value, earnings are unaffected.
 4. Dividends declared on preferred stock should be deducted from income from continuing operations, income before extraordinary items, and net income before computing earnings per share applicable to the common stock and other residual securities. If the preferred stock is cumulative, this adjustment is appropriate whether or not the amounts of the dividends are declared or paid.
 5. Acquiring treasury shares will reduce the weighted average number of shares outstanding used in the EPS denominator.
 6. When the number of common shares outstanding increases as a result of a 2-for-1 stock split during the year, the computation should be based on twice the number of weighted average shares outstanding prior to the stock split. Retroactive recognition should be given for all prior years presented.
 7. The existence of a provision for a contingent liability on a possible lawsuit created out of retained earnings will not affect the computation of earnings per share since the appropriation of retained earnings does not affect net income or the number of shares of stock outstanding.

CASE 16-8

Dear Mr. Kacskos:

I hope that the following brief explanation helps you understand why your warrants were not included in Howat's earnings per share calculations.

Earnings per share (EPS) provides income statement users a quick assessment of the earnings that were generated for each common share outstanding over a given period. When a company issues only common and preferred stock, it has a simple capital structure; consequently, the only ratio needed to calculate EPS is the following:

$$(\text{Net Income} - \text{Preferred Dividends}) \div \text{Average Number of Common Shares Outstanding}$$

However, corporations that have outstanding a variety of other securities—convertible bonds, convertible preferred stock, stock options, and stock warrants—have a complex capital structure. Because these securities could be converted to common stock, they have a potentially “dilutive” effect on EPS.

In order not to mislead users of financial information, the accounting profession insists that EPS calculations be conservative. Thus, a security which might dilute EPS must be figured into EPS calculations as though it had been converted into common stock. Basic EPS assumes a weighted average of common stock outstanding while diluted EPS assumes that any potentially dilutive security has been converted.

Some securities, however, might actually inflate the EPS figure rather than dilute it. These securities are considered antidilutive and are excluded from the EPS computation. Take, for example, your warrants. The computations below provide a good example of how options and warrants are treated in diluted EPS. In these computations, we assume that Howat will purchase treasury stock using the proceeds from the exercise of your warrants.

When you exercise your 15,000 warrants at \$30, the company does not simply add 15,000 shares to common stock outstanding; rather, for diluted EPS, Howat is assumed to purchase and retire 18,000 $[(15,000 \times \$30) \div \$25]$ shares of treasury stock at \$25 with the proceeds. Therefore, if you add the 15,000 exercised warrants to the common stock outstanding and then subtract the 18,000 shares presumably purchased, the number of shares outstanding would be reduced to 97,000 $(100,000 + 15,000 - 18,000)$. Because the ratio's denominator would be reduced by this inclusion, it would cause the ratio to increase, which defeats the purpose of the assumed exercise. These warrants are considered antidilutive and, therefore, are not included in EPS calculations.

This explanation should address any concerns you may have had about the use of your warrants in EPS calculations. If you have any further questions, please call me.

Sincerely,

Ms. Smart Student
Accountant

FINANCIAL REPORTING PROBLEM

- (a) (1) Under 3M's General Employee Stock Purchase plan (Note 17), 15 million shares are authorized to be issued.
- (2) At year-end, 2001, 9.6 million shares were available for grant to eligible employees.
- (3) In 2001, employees purchased 998,276 shares for \$93.7 million. (998,276 X \$93.85)
- (b) (1) At December 31, 2001, the range of exercise prices for options outstanding under 3M's MSOP Plan was \$46.01 to \$122.9.
- (2) These options will expire 10 years from the date of grant.
- (3) The accounts to which the proceeds from these option exercises are credited are Common Stock and Paid-in Capital in Excess of Par Value.
- (4) The number of shares of outstanding options at December 31, 2001 under the MSOP Plan is 34.5 million at a weighted average exercise price of \$88.12.
- (5) The number of options available under the MSOP at December 31, 2001 is 27.5 million at a weighted average exercise price of \$80.98.

(c) (In millions—except per share)	2001	2000	1999
Weighted average common shares	399.9	399.9	406.5
Diluted earnings per share	3.58	4.45	4.34

(d) From note 19:	
Reported net income	\$1,430
Pro forma net income based on estimated fair value	<u>1,278</u>
Compensation Expense using Fair Value Method	<u>\$ 152</u>

FINANCIAL STATEMENT ANALYSIS CASE

Regardless of whether the intrinsic value or fair value method is used, full disclosure should be made about the status of these plans at the end of the periods presented, including the number of shares under option, options exercised and forfeited, the weighted average option prices for these categories, the weighted average fair value of options granted during the year, and the average remaining contractual life of the options outstanding. In addition to information about the status of the stock option plan, companies must also disclose the method and significant assumptions used to estimate the fair values of the stock options.

Kellogg Company, in compliance with FASB Statement No. 123, provided the following information in its Note 8 (in part):

The Company has elected to account for the stock option plans under APB #25, "Accounting for Stock Issued to Employees." Accordingly, no compensation cost has been recognized for these grants. The fair value of each option grant was estimated at the date of grant using the Black-Scholes option pricing model with the following weighted average assumptions:

	2001	2000
Risk-free interest rate	4.57%	6.59%
Dividend yield	3.3%	3.9%
Volatility	28.21%	25.43%
Average expected term (years)	3.08	3.17

For purposes of pro forma disclosures, the estimated fair value of the options is amortized to expense over the options' vesting period. The Company's net earnings and earnings per share are estimated as follows:

<i>(millions, except per share data)</i>	2001	2000
Net earnings	449.9	567.1
Net earnings per share	1.11	1.40

COMPARATIVE ANALYSIS CASE

- (a) Coca-Cola sponsors restricted stock award plans, and stock option plans.

PepsiCo grants stock options to employees under four different incentive plans—the SharePower Stock Option Plan, the Long-Term Incentive Plan, the Stock Option Incentive Plan, and the Quaker Long-Term Incentive Plan.

	Coca-Cola	PepsiCo
(b) Options outstanding at year-end 2001	141,000,000	176,922,000
(c) Options granted during 2001	45,000,000	40,432,000
(d) Options exercised during 2001	7,000,000	29,064,000
(e) Range of option prices exercised during 2001	\$20–\$86.75	\$4.25–\$49.00

(f) Weighted Average Number of Shares		
(in millions)	Coca-Cola	PepsiCo
2001	2,487	1,807
2000	2,487	1,791
1999	2,487	1,817

(g) Earnings Per Share		
(in millions)	Coca-Cola	PepsiCo
2001	\$1.60	\$1.47
2000	\$.88	\$1.42
1999	\$.98	\$1.38

RESEARCH CASES

CASE 1

- (a) SFAS 123 was adopted by the affirmative vote of 5 members. Messrs. Foster and Leisenring dissented.
- (b) The dissenters believed that the compensation associated with employee stock options should be recognized in the financial statements, not merely reflected in pro forma disclosures. Since employee stock options represent compensation and the cost can be determined with sufficient reliability, the dissenters argued that *FASB Concepts Statement No. 5*, "Recognition and Measurement in Financial Statements of Business Enterprises," mandates recognition over disclosure.
- (c) The modified grant method would have been acceptable to the dissenters if the resulting cost was recognized in the financial statements. Even though the dissenters find the modified grant method flawed, recognition of the associated amount is better than non-recognition.

CASE 2

- (a) Although not stated explicitly, the shares could come from authorized but unissued shares or AES could purchase shares in the market via treasury stock transactions.
- (b) Registering shares is a form of designation indicating that the shares may need to be issued . . . in this case to the lenders or to its subsidiaries. This does not affect the accounts but would be disclosed as part of its common stock disclosures related to shares outstanding and EPS disclosures.
- (c) Dilution refers to an increase in shares outstanding that dilutes the ownership stakes of existing shareholders, when new shares are issued. Registering shares results in an addition to shares outstanding, used to compute earnings per share. This is because shares are registered when it is likely that they will be issued to satisfy the claims of their subsidiary loans. That is, the shares are unregistered shares pledged as collateral and if the loans are not paid by the subsidiary, AES will have to issue shares equal in value to the loan payments.

RESEARCH CASES (Continued)

- (d) *Dilution* is a problem for investors because it indicates a decline in their proportionate ownership in a company. Measuring the dilution of earnings per share is a problem because it entails several estimates and assumptions to arrive at diluted earnings per share figures. For example, how high must the probability of the loan default be before shares must be registered and dilution occurs? Will this threshold be the same for all companies? If not, diluted earnings per share numbers will not be comparable.

INTERNATIONAL REPORTING CASE

- (a) In 2001, 2000, and 1999, income would have been higher under U.S. GAAP due to the accounting for incremental costs.
- (b) Clearly Canadian's comprehensive income under U.S. GAAP is a greater loss in 2001 due to unrealized losses on long-term investments and foreign currency translation adjustments.

Note to instructors: The accounting for investment securities is addressed in Chapter 17. While the accounting for foreign currency translation is beyond the scope of this text, it is one of the items reported in comprehensive income, which is not a required disclosure under Canadian GAAP.

- (c) One reason why foreign companies would not prepare their statements in accordance with U.S. GAAP is that it might make the statements *less* comparable to the statements of companies in their home country. For example, Clearly Canadian's shares also trade on Canadian exchanges with companies that do not trade on U.S. markets. In addition, some companies might be reluctant to report under U.S. GAAP because in many cases (as with Clearly Canadian in 2001) their income or equity would be lower.
- (d) Because Clearly Canadian repriced its options, it now accounts for the options using the intrinsic value approach (under U.S. GAAP). And since the exercise price of the options exceeds the market price, no expense would be recognized for the cost of the stock options under U.S. or Canadian GAAP. However, Clearly Canadian must disclose the impact on income if it would have used the fair value provisions of SFAS No. 123.

PROFESSIONAL SIMULATION

Explanation

- (a) The controller's computations were not correct in that the straight arithmetic average of the common shares outstanding at the beginning and end of the year was used.

The weighted average number of shares outstanding may be computed as follows:

Dates Outstanding	Shares Outstanding	Fraction of Year	Weighted Shares
Jan. 1–Oct. 1	1,285,000	9/12	963,750
Oct. 1–Dec. 1	1,035,000	2/12	172,500
Dec. 1–Dec. 31	1,200,000	1/12	<u>100,000</u>
Weighted average number of shares outstanding			<u><u>1,236,250</u></u>
Net income for year			\$3,374,960

$$\text{Earnings per share} = \frac{\$3,374,960}{1,236,250} = \$2.73$$

Financial Statements

$$\text{Basic earnings per share} = \frac{\$3,374,960}{1,236,250} = \$2.73$$

$$\text{Diluted earnings per share} = \frac{\$3,374,960}{1,320,250^*} = \$2.56$$

PROFESSIONAL SIMULATION (Continued)

Schedule A

*Computation of weighted average number of shares adjusted for dilutive securities

Average number of shares under options outstanding	140,000
Option price per share	X <u>\$10</u>
Proceeds upon exercise of options	\$1,400,000
Market price of common stock:	
Average	\$25
Treasury shares that could be repurchased with proceeds ($\$1,400,000 \div \25)	56,000
Excess of shares under option over treasury shares that could be repurchased ($140,000 - 56,000$)	<u>84,000</u>
Incremental shares	84,000
Average number of common shares outstanding	<u>1,236,250</u>
Weighted average number of shares adjusted for dilutive securities	<u>1,320,250</u>

CHAPTER 17

Investments

ASSIGNMENT CLASSIFICATION TABLE

Topics	Questions	Brief Exercises	Exercises	Problems	Cases
1. Debt securities.	1, 2, 3, 15		1		7
(a) Held-to-maturity.	4, 5, 7, 8, 15, 21	1, 3	2, 3, 5	1, 7	4
(b) Trading.	4, 6, 7, 8, 12, 21	4			1, 4
(c) Available-for-sale.	4, 7, 8, 9, 12, 21	2	4	1, 2, 3, 4, 7	1, 4
2. Bond amortization.	8, 9	1, 2, 3	3, 4, 5	1, 2, 3	
3. Equity securities.	1, 13, 14, 15, 16	1			7
(a) Available-for-sale.	7, 10, 11, 17, 21	4, 5, 8	6, 8, 9, 11, 13	5, 6, 8, 9, 10, 11, 12	1, 2, 3
(b) Trading.	6, 7, 8, 16, 17, 21	6	6, 7, 14, 15	6, 8	1, 3
(c) Equity method.	18, 19, 20, 21, 22	7	12, 13, 16, 17		5, 6
4. Comprehensive income.	24	9	10	10, 12	
5. Disclosures of investments.	23		8, 9	5, 9, 10, 11, 12	
6. Impairments.	26		18		3
7. Transfers between categories.	25				1, 3
*8. Derivatives	27, 28, 29, 30, 31, 32, 33, 34		19, 20, 21, 22, 23	13, 14, 15, 16, 17, 18	

*This material is dealt with in an Appendix to the chapter.

ASSIGNMENT CHARACTERISTICS TABLE

Item	Description	Level of Difficulty	Time (minutes)
E17-1	Classification of Investments.	Simple	10-15
E17-2	Entries for held-to-maturity securities.	Simple	15-20
E17-3	Entries for held to maturity.	Simple	15-20
E17-4	Entries for available-for-sale	Simple	10-15
E17-5	Amortization—bond investments.	Simple	20-30
E17-6	Available-for-sale trading securities entries.	Simple	10-15
E17-7	Trading securities entries.	Simple	10-15
E17-8	Available-for-sale securities entries and reporting.	Simple	5-10
E17-9	Available-for-sale securities entries and financial statement presentation.	Simple	10-15
E17-10	Comprehensive income disclosure.	Moderate	20-25
E17-11	Equity securities entries.	Simple	10-15
E17-12	Journal entries for fair value and equity methods.	Simple	15-20
E17-13	Equity method.	Moderate	20-25
E17-14	Equity investment—trading.	Moderate	20-25
E17-15	Securities entries—buy and sell.	Moderate	15-20
E17-16	Fair value and equity method compared.	Simple	15-20
E17-17	Equity method with extraordinary item.	Moderate	10-15
E17-18	Impairment of debt securities.	Moderate	15-20
*E17-19	Derivative transaction.	Moderate	15-20
*E17-20	Fair value hedge.	Moderate	20-25
*E17-21	Cash flow hedge	Moderate	15-20
*E17-22	Fair value hedge	Moderate	15-20
*E17-23	Fair value hedge	Moderate	15-20
P17-1	Debt securities.	Moderate	30-40
P17-2	Debt securities—available-for-sale.	Moderate	30-40
P17-3	Entries—for long-term investments.	Moderate	25-30
P17-4	Available-for-sale debt securities.	Moderate	25-35
P17-5	Equity securities entries and disclosures.	Moderate	25-35
P17-6	Trading and available-for-sale securities entries.	Simple	25-35
P17-7	Available-for-sale and held-to-maturity debt securities entries.	Moderate	25-35
P17-8	Applying fair value method.	Moderate	20-30
P17-9	Financial statement presentation of available-for-sale investments.	Simple	20-30
P17-10	Available-for-sale securities and comprehensive income.	Moderate	20-30
P17-11	Available-for-sale entries and reporting.	Complex	35-45
P17-12	Available-for-sale —statement presentation.	Moderate	20-25
*P17-13	Derivative financial instrument.	Moderate	20-25
*P17-14	Derivative financial instrument.	Moderate	20-25
*P17-15	Free-standing derivative	Moderate	30-40
*P17-16	Fair value hedge interest rate swap.	Moderate	30-40

ASSIGNMENT CHARACTERISTICS TABLE (Continued)

Item	Description	Level of Difficulty	Time (minutes)
*P17-17	Cash flow hedge.	Moderate	25-35
*P17-18	Fair value hedge.	Moderate	25-35
C17-1	Issues raised about investment securities.	Moderate	25-30
C17-2	Equity securities.	Moderate	25-30
C17-3	Financial statement effect of equity securities.	Simple	20-30
C17-4	Equity securities, current and noncurrent.	Moderate	20-25
C17-5	Investment accounted for under the equity method.	Simple	15-25
C17-6	Equity method.	Moderate	25-35
C17-7	Fair-value—Ethics.	Moderate	25-35

ANSWERS TO QUESTIONS

1. A debt security is an instrument representing a creditor relationship with an enterprise. Debt securities include U.S. government securities, municipal securities, corporate bonds, convertible debt, commercial paper, and all securitized debt instruments. Trade accounts receivable and loans receivable are not debt securities because they do not meet the definition of a security.

An equity security is described as a security representing an ownership interest such as common, preferred, or other capital stock. It also includes rights to acquire or dispose of an ownership interest at an agreed-upon or determinable price such as warrants, rights, and call options or put options. Convertible debt securities and redeemable preferred stocks are not treated as equity securities.

2. The variety in bond features along with the variability in interest rates permits investors to shop for exactly the investment that satisfies their safety, yield, and marketability desires, and permits issuers to create a debt instrument best suited to their needs.

3. Cost includes the total consideration to acquire the investment, including brokerage fees and other costs incidental to the purchase.

4. The three types of classification are:
 Held-to-maturity: Debt securities that the enterprise has the positive intent and ability to hold to maturity.
 Trading: Debt securities bought and held primarily for sale in the near term to generate income on short-term price differences.
 Available-for-sale: Debt securities not classified as held-to-maturity or trading securities.

5. A debt security should be classified as held-to-maturity only if the company has both: (1) the positive intent and (2) the ability to hold those securities to maturity.

6. Trading securities are reported at fair value, with unrealized holding gains and losses reported as part of net income. Since trading securities are held primarily for sale in the near term, any discount or premium is not amortized.

7. Trading and available-for-sale securities should be reported at fair value, whereas held-to-maturity securities should be reported at amortized cost.

8. $\$1,750,000 \times 10\% = \$175,000$; $\$175,000 \div 2 = \$87,500$.

9. Securities Fair Value Adjustment (Available-for-Sale)	44,500	
Unrealized Holding Gain or Loss—Equity.....		44,500
[\$1,802,000 – (\$1,750,000 + \$7,500)]		

10. Unrealized holding gains and losses for trading securities should be included in net income for the current period. Unrealized holding gains and losses for available-for-sale securities should be reported as other comprehensive income and as a separate component of stockholders' equity. Unrealized holding gains and losses are not recognized for held-to-maturity securities.

11.	(a) Unrealized Holding Gain or Loss—Equity.....	70,000	
	Securities Fair Value Adjustment (Available-for-Sale).....		70,000
	(b) Unrealized Holding Gain or Loss—Equity.....	80,000	
	Securities Fair Value Adjustment (Available-for-Sale).....		80,000

12. Premium or discount amortization is not required for trading securities. The time to sale is too short and therefore amortization provides little useful information.

Questions Chapter 17 (Continued)

13. Stock acquired in exchange for noncash consideration should be recorded at: (1) the fair value of the consideration given or (2) the fair value of the stock received, whichever is more clearly determinable.
14. Investments in equity securities can be classified as follows:
 1. Holdings of less than 20% (fair value method)—investor has passive interest.
 2. Holdings between 20% and 50% (equity method)—investor has significant influence.
 3. Holdings of more than 50% (consolidated statements)—investor has controlling interest.

Holdings of less than 20% are then classified into trading and available-for-sale, assuming determinable fair values.

15. Investments in stock do not have a maturity date.

16. Gross selling price of 10,000 shares at \$27.50	\$275,000
Less: Brokerage commissions	<u>(1,770)</u>
Proceeds from sale	273,230
Cost of 10,000 shares	<u>(250,000)</u>
Gain on sale of stock	<u>\$ 23,230</u>

Cash	273,230	
Trading Securities		250,000
Gain on Sale of Stock		23,230

17. Both trading and available-for-sale equity securities are reported at fair value. However, any unrealized holding gain or loss is reported in net income for trading securities but as other comprehensive income and as a separate component of stockholders' equity for available-for-sale securities.
18. Significant influence over an investee may result from representation on the board of directors, participation in policy-making processes, material intercompany transactions, interchange of managerial personnel, or technological dependency. An investment (direct or indirect) of 20% or more of the voting stock of an investee constitutes significant influence unless there exists evidence to the contrary.
19. Under the equity method, the investment is originally recorded at cost, but is adjusted for changes in the investee's net assets. The investment account is increased (decreased) by the investor's proportionate share of the earnings (losses) of the investee and decreased by all dividends received by the investor from the investee.
20. The following disclosures in the investor's financial statements are generally applicable to the equity method:
 - (1) The name of each investee and the percentage of ownership of common stock.
 - (2) The accounting policies of the investor with respect to investments in common stock.
 - (3) The difference, if any, between the amount in the investment account and the amount of underlying equity in the net assets of the investee.
 - (4) The aggregate value of each identified investment based on quoted market price (if available).
 - (5) When investments of 20% or more interest are in the aggregate material in relation to the financial position and operating results of an investor, it may be necessary to present summarized information concerning assets, liabilities, and results of operations of the investees, either individually or in groups, as appropriate.
21. Dividends in excess of earnings subsequent to acquisition should be accounted for as a reduction in the investment in common stock account.

Questions Chapter 17 (Continued)

22. Ordinarily, Elizabeth Corp. should discontinue applying the equity method and not provide for additional losses. However, if Elizabeth Corp.'s loss is not limited to its investment (due to a guarantee of Dole's obligations or other commitment to provide further financial support or if imminent return to profitable operations by Dole appears to be assured), it is appropriate for Elizabeth Corp. to provide for its entire \$248,000 share of the \$620,000 loss.
23. Trading securities should be reported at aggregate fair value as current assets. Individual held-to-maturity and available-for-sale securities are classified as current or noncurrent depending upon the circumstances. Held-to-maturity securities generally should be classified as current or noncurrent, based on the maturity date of the individual securities. Debt securities identified as available-for-sale should be classified as current or noncurrent, based on maturities and expectations as to sales and redemptions in the following year. Equity securities identified as available-for-sale should be classified as current if these securities are available for use in current operations.
24. Reclassification adjustments are necessary to insure that double counting does not result when realized gains or losses are reported as part of net income but also are shown as part of other comprehensive income in the current period or in previous periods.
25. When a security is transferred from one category to another, the transfer should be recorded at fair value, which in this case becomes the new basis for the security. Any unrealized gain or loss at the date of the transfer increases or decreases stockholders' equity. The unrealized gain or loss at the date of the transfer is recognized in income.
26. A debt security is impaired when "it is probable that the investor will be unable to collect all amounts due according to the contractual terms." When an impairment has occurred, the security is written down to its fair value, which is also the security's new cost basis. The amount of the writedown is accounted for as a realized loss.
- *27. An underlying is a special interest rate, security price, commodity price, index of prices or rates, or other market-related variable. Changes in the underlying determine changes in the value of the derivative. Payment is determined by the interaction of the underlying with the face amount and the number of shares, or other units specified in the derivative contract (these elements are referred to as notional amounts).
- *28. See illustration below:

Feature	Traditional Financial Instrument (e.g., Trading Security)	Derivative Financial Instrument (e.g., Call Option)
Payment Provision	Stock price times the number of shares.	Change in stock price (underlying) times number of shares (notional amount).
Initial Investment	Investor pays full cost.	Initial investment is less than full cost.
Settlement	Deliver stock to receive cash.	Receive cash equivalent, based on changes in stock price times the number of shares.

For a traditional financial instrument, an investor generally must pay the full cost, while derivatives require little initial investment. In addition, the holder of a traditional security is exposed to all risks of ownership, while most derivatives are not exposed to all risks associated with ownership in the underlying. For example, call options only can increase in value. Finally, unlike a traditional financial instrument, the holder of a derivative could realize a profit without ever having to take possession of the underlying. This feature is referred to as net settlement and serves to reduce the transaction costs associated with derivatives.

Questions Chapter 17 (Continued)

- *29. The purpose of a fair value hedge is to offset the exposure to changes in the fair value of a recognized asset or liability or of an unrecognized firm commitment.
- *30. The accounting for bonds payable will deviate from amortized cost in the case where the bonds are designated as a hedged item in a qualifying fair value hedge. If the hedge meets the special hedge accounting criteria (designation, documentation, and effectiveness), both the bonds payable and the hedging instrument (e.g., an interest rate swap) will be accounted for at fair value.
- *31. This is likely a setting where the company is hedging the fair value of a fixed-rate debt obligation. The fixed payments received on the swap will offset fixed payments on the debt obligation. As a result, if interest rates decline, the value of the swap contract increases (a gain), while at the same time the fixed-rate debt obligation increases (a loss). The swap is an effective risk management tool in this setting because its value is related to the same underlying (interest rates) that will affect the value of the fixed-rate bond payable. Thus, if the value of the swap goes up, it offsets the loss in the value of the debt obligation.
- *32. A cash flow hedge is used to hedge exposures to cash flow risk, which is exposure to the variability in cash flows. The cash flows received on the hedging instrument (derivative) will offset the cash flows received on the hedged item. Sometimes the hedged item is a transaction that is planned some time in the future.
- *33. Derivatives used in cash flow hedges are accounted for at fair value on the balance sheet but gains or losses are recorded in equity as part of other comprehensive income.
- *34. A hybrid security is a security that has characteristics of both debt and equity and often is a combination of traditional and derivative financial instruments. A convertible bond is a hybrid instrument because it is comprised of a debt security, referred to as the host security, combined with an option to convert the bond to shares of common stock, the embedded derivative.

SOLUTIONS TO BRIEF EXERCISES

BRIEF EXERCISE 17-1

(a) Held-to-Maturity Securities	46,304	
Cash		46,304
(b) Cash	4,500	
Held-to-Maturity Securities	593	
Interest Revenue		5,093

BRIEF EXERCISE 17-2

(a) Available-for-Sale Securities	46,304	
Cash		46,304
(b) Cash	4,500	
Available-for-Sale Securities	593	
Interest Revenue		5,093
(c) Securities Fair Value Adjustment (AFS).....	303	
Unrealized Holding Gain or Loss—Equity.....		303

BRIEF EXERCISE 17-3

(a) Held-to-Maturity Securities	43,412	
Cash		43,412
(b) Cash ($\$40,000 \times .08 \times \frac{6}{12}$)	1,600	
Held-to-Maturity Securities		298
Interest Revenue ($\$43,412 \times .06 \times \frac{6}{12}$)		1,302

BRIEF EXERCISE 17-4

(a) Trading Securities	22,500	
Cash		22,500
(b) Cash	2,000	
Interest Revenue		2,000
(c) Unrealized Holding Gain or Loss—Income.....	1,600	
Securities Fair Value Adjustment (Trading).....		1,600

BRIEF EXERCISE 17-5

(a) Available-for-Sale Securities	9,900	
Cash.....		9,900
(b) Cash	975	
Dividend Revenue		975
(c) Securities Fair Value Adjustment (AFS).....	450	
Unrealized Holding Gain or Loss—Equity.....		450

BRIEF EXERCISE 17-6

(a) Trading Securities.....	9,900	
Cash.....		9,900
(b) Cash	975	
Dividend Revenue		975
(c) Securities Fair Value Adjustment (Trading).....	450	
Unrealized Holding Gain or Loss— Income.....		450

BRIEF EXERCISE 17-7

Investment in Teller Stock	300,000	
Cash		300,000
Investment in Teller Stock	45,000	
Revenue from Investment		45,000
(25% X \$180,000)		
Cash	15,000	
Investment in Teller Stock		15,000
(25% X \$60,000)		

BRIEF EXERCISE 17-8

Securities Fair Value Adjustment (AFS)	
200	
300	
<hr/>	
500	

Securities Fair Value Adjustment (AFS)	300	
Unrealized Holding Gain or Loss-Equity		300

BRIEF EXERCISE 17-9

- (a) Other comprehensive income for 2003: \$20,000**
- (b) Comprehensive income for 2003: \$820,000 or (\$800,000 + \$20,000)**
- (c) Accumulated other comprehensive income: \$80,000 or (\$60,000 + \$20,000)**

SOLUTIONS TO EXERCISES

EXERCISE 17-1 (10-15 minutes)

a. 1 b. 2 c. 1 d. 2 e. 2 f. 3

EXERCISE 17-2 (15-20 minutes)

(a)	January 1, 2003		
	Held-to-Maturity Securities	300,000	
	Cash.....		300,000
(b)	December 31, 2003		
	Cash	36,000	
	Interest Revenue		36,000
(c)	December 31, 2004		
	Cash	36,000	
	Interest Revenue		36,000

EXERCISE 17-3 (15-20 minutes)

(a)	January 1, 2003		
	Held-to-Maturity Securities	322,744.44	
	Cash.....		322,744.44

(b) **Schedule of Interest Revenue and Bond Premium Amortization**
 Effective Interest Method
 12% Bonds Sold to Yield 10%

Date	Cash Received	Interest Revenue	Premium Amortized	Carrying Amount of Bonds
1/1/03	—	—	—	\$322,744.44
12/31/03	\$36,000	\$32,274.44	\$3,725.56	319,018.88
12/31/04	36,000	31,901.89	4,098.11	314,920.77
12/31/05	36,000	31,492.08	4,507.92	310,412.85
12/31/06	36,000	31,041.29	4,958.71	305,454.14
12/31/07	36,000	30,545.86	5,454.14*	300,000.00

*Rounded by 45¢.

EXERCISE 17-3 (Continued)

(c)	December 31, 2003		
	Cash	36,000	
	Held-to-Maturity Securities		3,725.56
	Interest Revenue		32,274.44
(d)	December 31, 2004		
	Cash	36,000	
	Held-to-Maturity Securities		4,098.11
	Interest Revenue		31,901.89

EXERCISE 17-4 (10-15 minutes)

(a)	January 1, 2003		
	Available-for-Sale Securities	322,744.44	
	Cash		322,744.44
(b)	December 31, 2003		
	Cash	36,000	
	Available-for-Sale Securities		3,725.56
	Interest Revenue		32,744.44
	Securities Fair Value Adjustment—		
	Available-for-Sale	1,481.12	
	Unrealized Holding Gain or Loss—		
	Equity (\$320,500.00 – \$319,018.88)		1,481.12
(c)	December 31, 2004		
	Unrealized Holding Gain or Loss—Equity	7,401.89	
	Securities Fair Value Adjustment—		
	Available-for-Sale		7,401.89

EXERCISE 17-4 (Continued)

	Cost	Fair Value	Unrealized Holding Gain (Loss)
Available-for-sale bonds	314,920.77	309,000.00	\$(5,920.77)
Previous securities fair value adjustment—Dr.			<u>1,481.12</u>
Securities fair value adjustment—Cr.			<u>\$(7,401.89)</u>

EXERCISE 17-5 (20-30 minutes)

- (a) **Schedule of Interest Revenue and Bond Discount Amortization
Straight-line Method
9% Bond Purchased to Yield 12%**

Date	Cash Received	Interest Revenue	Bond Discount Amortization	Carrying Amount of Bonds
1/1/03	—	—	—	\$185,589
12/31/03	\$18,000	\$22,804	\$4,804*	190,393
12/31/04	18,000	22,804	4,804	195,197
12/31/05	18,000	22,803**	4,803	200,000

* $(\$200,000 - \$185,589) \div 3 = \$4,804$

**Rounded by \$1.

- (b) **Schedule of Interest Revenue and Bond Discount Amortization
Effective Interest Method
9% Bond Purchased to Yield 12%**

Date	Cash Received	Interest Revenue	Bond Discount Amortization	Carrying Amount of Bonds
1/1/03	—	—	—	\$185,589.00
12/31/03	\$18,000	\$22,270.68*	\$4,270.68	189,859.68
12/31/04	18,000	22,783.16	4,783.16	194,642.84
12/31/05	18,000	23,357.16**	5,357.16	200,000.00

* $\$185,589 \times .12 = \$22,270.68$

**Rounded by \$.02.

EXERCISE 17-5 (Continued)

(c)	December 31, 2004		
	Cash	18,000.00	
	Held-to-Maturity Securities	4,804.00	
	Interest Revenue		22,804.00
(d)	December 31, 2004		
	Cash	18,000.00	
	Held-to-Maturity Securities	4,783.16	
	Interest Revenue		22,783.16

EXERCISE 17-6 (10-15 minutes)

(a)	Securities Fair Value Adjustment—		
	Trading	5,000	
	Unrealized Holding Gain or Loss—		
	Income		5,000
(b)	Securities Fair Value Adjustment—		
	Available-for-Sale	5,000	
	Unrealized Holding Gain or Loss—		
	Equity		5,000
(c)	The Unrealized Holding Gain or Loss—Income account is reported in the income statement under Other Revenues and Gains. The Unrealized Holding Gain or Loss—Equity account is reported as a part of other comprehensive income and as a component of stockholders' equity until realized. The Securities Fair Value Adjustment account is added to the cost of the Available-for-Sale or Trading Securities account to arrive at fair value.		

EXERCISE 17-7 (10-15 minutes)

(a)	<u>December 31, 2003</u>		
	Unrealized Holding Gain or Loss—Income	1,400	
	Securities Fair Value Adjustment (Trading)		1,400
(b)	<u>During 2004</u>		
	Cash	9,400	
	Loss on Sale of Securities	600	
	Trading Securities		10,000

EXERCISE 17-7 (Continued)

(c) December 31, 2004

Securities	Cost	Fair Value	Unrealized Gain (Loss)
Clemson Corp. stock	\$20,000	\$19,100	\$ (900)
Buffaloes Co. stock	<u>20,000</u>	<u>20,500</u>	<u>500</u>
Total of portfolio	<u>\$40,000</u>	<u>\$39,600</u>	(400)
Previous securities fair value adjustment balance—Cr.			<u>(1,400)</u>
Securities fair value adjustment—Dr.			<u>\$1,000</u>
Securities Fair Value Adjustment (Trading).....			1,000
Unrealized Holding Gain or Loss— Income.....			1,000

EXERCISE 17-8 (5-10 minutes)

The unrealized gains and losses resulting from changes in the fair value of available-for-sale securities are recorded in an unrealized holding gain or loss account that is reported as other comprehensive income and as a separate component of stockholders' equity until realized. Therefore, the following adjusting entry should be made at the year-end:

Unrealized Holding Gain or Loss—Equity	8,000
Securities Fair Value Adjustment (Available-for-Sale)	8,000

Unrealized Holding Gain or Loss—Equity is reported as other comprehensive income and as a separate component in stockholders' equity and not included in net income. The Securities Fair Value Adjustment (Available-for-Sale) account is a valuation account to the related investment account.

EXERCISE 17-9 (10-15 minutes)

- (a) The portfolio should be reported at the fair value of \$54,500. Since the cost of the portfolio is \$53,000, the unrealized holding gain is \$1,500, of which \$400 is already recognized. Therefore, the December 31, 2003 adjusting entry should be:

Securities Fair Value Adjustment		
(Available-for-Sale).....	1,100	
Unrealized Holding Gain or Loss—Equity.....		1,100

- (b) The unrealized holding gain of \$1,500 (including the previous balance of \$400) should be reported as an addition to stockholders' equity and the Securities Fair Value Adjustment (Available-for-Sale) account balance of \$1,500 should be added to the cost of the securities account.

STEFFI GRAF, INC.
Balance Sheet
As of December 31, 2003

Current assets:		
Available-for-sale securities	\$54,500	
Stockholders' equity:		
Common stock		xxx,xxx
Additional paid-in capital		xxx,xxx
Retained earnings		xxx,xxx
		xxx,xxx
Add: Accumulated other comprehensive income		1,500*
Total stockholders' equity		\$xxx,xxx

*Note: The unrealized holding gain could also be disclosed.

- (c) **Computation of realized gain or loss on sale of stock:**
- | | |
|--------------------------------------|--------------------------|
| Net proceeds from sale of security A | \$15,100 |
| Cost of security A | <u>17,500</u> |
| Loss on sale of stock | <u>(\$ 2,400)</u> |

January 20, 2004		
Cash	15,100	
Loss on Sale of Securities.....	2,400	
Available-for-Sale Securities		17,500

EXERCISE 17-10 (20-25 minutes)

(a) **STEFFI GRAF INC.**
Statement of Comprehensive Income
For the Year Ended December 31, 2003

Net income		\$120,000
Other comprehensive income		
Unrealized holding gain arising during year		<u>1,100</u>
Comprehensive net income		<u>\$121,100</u>

(b) **STEFFI GRAF INC.**
Statement of Comprehensive Income
For the Year Ended December 31, 2004

Net income			\$140,000
Other comprehensive income			
Unrealized holding gain arising during year	\$40,000		
Add: Reclassification adjustment for loss included in net income		<u>2,400</u>	<u>42,400</u>
Comprehensive net income			<u>\$182,400</u>

EXERCISE 17-11 (10-15 minutes)

- (a) The total purchase price of these investments is:
 Sanchez: $(10,000 \times \$33.50) + \$1,980 = \$336,980$
 Vicario: $(5,000 \times \$52.00) + \$3,370 = \$263,370$
 WTA: $(7,000 \times \$26.50) + \$4,910 = \$190,410$

The purchase entries will be:

January 15, 2003

Available-for-Sale Securities	336,980	
Cash.....		336,980

April 1, 2003

Available-for-Sale Securities	263,370	
Cash.....		263,370

September 10, 2003

Available-for-Sale Securities	190,410	
Cash.....		190,410

EXERCISE 17-11 (Continued)

(b) Gross selling price of 4,000 shares at \$35	\$140,000
Less: Commissions, taxes, and fees	<u>(3,850)</u>
Net proceeds from sale	136,150
Cost of 4,000 shares (\$336,980 X 0.4)	<u>(134,792)</u>
Gain on sale of stock	<u>\$ 1,358</u>

May 20, 2003

Cash	136,150	
Available-for-Sale Securities		134,792
Gain on Sale of Stock.....		1,358

(c)

Securities	Cost	Fair Value	Unrealized Gain (Loss)
Sanchez Co.	\$202,188*	\$180,000	\$(22,188)
Vicario Co.	263,370	275,000	11,630
WTA Co.	<u>190,410</u>	<u>196,000</u>	<u>5,590</u>
Total portfolio value	<u>\$655,968</u>	<u>\$651,000</u>	(4,968)
Previous securities fair value adjustment balance			<u>0</u>
Securities fair value adjustment—Cr.			<u>\$ (4,968)</u>

*\$336,980 X 0.6 = \$202,188.

December 31, 2003

Unrealized Holding Gain or Loss—Equity	4,968
Securities Fair Value Adjustment (Available-for-Sale)	4,968

EXERCISE 17-12 (15-20 minutes)

Situation 1: Journal entries by Conchita Cosmetics:

To record purchase of 20,000 shares of Martinez Fashion at a cost of \$13 per share:

March 18, 2003

Available-for-Sale Securities	260,000	
Cash		260,000

EXERCISE 17-12 (Continued)

To record the dividend revenue from Martinez Fashion:

June 30, 2003

Cash	7,500	
Dividend Revenue (\$75,000 X 10%).....		7,500

To record the investment at fair value:

December 31, 2003

Securities Fair Value Adjustment (Available-for-Sale)	40,000	
Unrealized Holding Gain or Loss—Equity.....		40,000*

*(\$15 – \$13) X 20,000 shares = \$40,000

Situation 2: Journal entries by Monica, Inc.:

To record the purchase of 30% of Seles Corporation's common stock:

January 1, 2003

Investment in Seles Corp. Stock.....	81,000	
Cash		81,000

Since Monica, Inc. obtained significant influence over Seles Corp., Monica, Inc. now employs the equity method of accounting.

To record the receipt of cash dividends from Seles Corporation:

June 15, 2003

Cash (\$36,000 X 30%)	10,800	
Investment in Seles Corp. Stock		10,800

To record Monica's share (30%) of Seles Corporation's net income of \$85,000:

December 31, 2003

Investment in Seles Corp. Stock.....	25,500	
(30% X \$85,000)		
Revenue from Investment		25,500

EXERCISE 17-13 (20-25 minutes)

- (a) \$110,000, the increase to the Investment account.
- (b) If the payout ratio is 40%, then 40% of the net income is their share of dividends = \$44,000.
- (c) Their share is 25%, so, Total Net Income x 25% = \$110,000
Total Net Income = \$110,000 ÷ 25% = \$440,000
- (d) \$44,000 ÷ 25% = \$176,000 or \$440,000 x 40% = \$176,000

EXERCISE 17-14 (10-15 minutes)

1.	Trading Securities..... (200 shares x \$40) Cash.....	8,000 8,000	 8,000
2.	Cash (100 shares x \$45) Gain on Sale of Stock Trading Securities (100 x \$40)	4,500 500 4,000	 500 4,000
3.	Unrealized Holding Gain or Loss – Income..... Securities Fair Value Adjustment (Trading Securities) (\$40–\$35) x 100....	500 500	 500

EXERCISE 17-15 (15-20 minutes)

(a)	Unrealized Holding Gain or Loss—Income..... Securities Fair Value Adjustment (Trading).....	7,900 7,900	 7,900
(b)	Cash Loss on Sale of Securities..... Trading Securities.....	66,300 7,200 73,500	 73,500
(c)	Trading Securities Cash	53,800 53,800	 53,800

EXERCISE 17-15 (Continued)

(d)	Securities	Cost	Fair Value	Unrealized Holding Gain (Loss)
	Richie Hearn Corp., Common	\$180,000	\$175,000	\$ (5,000)
	Roberto Guerrero Corp., common	53,800	50,400	(3,400)
	Alessandro Zampedri, Inc., Preferred	<u>60,000</u>	<u>58,000</u>	<u>(2,000)</u>
	Total portfolio	<u>\$293,800</u>	<u>\$283,400</u>	(10,400)
	Previous securities fair value adjustment—Cr.			<u>(7,900)</u>
	Securities fair value adjustment—Cr.			<u>\$ (2,500)</u>
	Unrealized Holding Gain or Loss—Income		2,500	
	Securities Fair Value Adjustment (Trading)			2,500

EXERCISE 17-16 (15-20 minutes)

(a)	December 31, 2002		
	Available-for-Sale Securities	1,200,000	
	Cash.....		1,200,000
	June 30, 2003		
	Cash	42,500	
	Dividend Revenue		42,500
	December 31, 2003		
	Cash	42,500	
	Dividend Revenue		42,500
	Securities Fair Value Adjustment (Available-for-Sale)	150,000	
	Unrealized Holding Gain or Loss— Equity		150,000
	\$27 X 50,000 = \$1,350,000		
	\$1,350,000 – \$1,200,000 = \$150,000		

EXERCISE 17-16 (Continued)

(b)	December 31, 2002	
Investment in Kulikowski Stock.....	1,200,000	
Cash		1,200,000
	June 30, 2003	
Cash	42,500	
Investment in Kulikowski Stock.....		42,500
	December 31, 2003	
Cash	42,500	
Investment in Kulikowski Stock.....		42,500
Investment in Kulikowski Stock.....	146,000	
Revenue from Investment.....		146,000
(20% X \$730,000)		

(c)	Fair Value Method	Equity Method
Investment amount (balance sheet)	\$1,350,000	\$1,261,000*
Dividend revenue (income statement)	85,000	0
Revenue from investment (income statement)		146,000
 *\$1,200,000 + \$146,000 – \$42,500 – \$42,500		

EXERCISE 17-17 (10-15 minutes)

Investment in Martz Co. Stock	180,000	
Cash		180,000
Cash (\$20,000 X .30)	6,000	
Investment in Martz Co. Stock.....		6,000
Investment in Martz Co. Stock	24,000	
Revenue from Investment.....		24,000
(.30 X \$80,000)		

EXERCISE 17-18 (15-20 minutes)

(a) Securities Fair Value Adjustment		
(Available-for-Sale)	80,000	
Loss on Impairment (\$800,000 – \$720,000)	80,000	
Available-for-Sale Securities.....		80,000
Unrealized Holding Gain or Loss—		
Equity		80,000

(b) The new cost basis is \$720,000. FASB No. 115 indicates that the difference between the carrying amount and the maturity value should not be recorded. If the bonds are impaired, it is inappropriate to increase the asset back up to its original maturity value.

(c) Securities Fair Value Adjustment		
(Available-for-Sale)	40,000	
Unrealized Holding Gain or Loss—		
Equity (\$760,000 – \$720,000)		40,000

***EXERCISE 17-19 (15-20 minutes)**

(a) Call Option		
	300	
Cash.....		300

(b) Unrealized Holding Gain or Loss—Income		
	100	
Call Option (\$300 – \$200).....		100

Call Option		
	3,000	
Unrealized Holding Gain or Loss—		
Income (1,000 X \$3).....		3,000

(c) Unrealized Holding Gain: \$2,900 (\$3,000 – \$100)

***EXERCISE 17-20 (20-25 minutes)**

	(a) <u>6/30/03</u>	(b) <u>12/31/03</u>
Fixed-rate debt	\$100,000	\$100,000
Fixed rate (6% ÷ 2)	<u>3%</u>	<u>3%</u>
Semiannual debt payment	\$ 3,000	\$ 3,000
Swap fixed receipt	<u>3,000</u>	<u>3,000</u>
Net income effect	<u>\$ 0</u>	<u>\$ 0</u>
Swap variable rate		
5.7% X 1/2 X \$100,000	\$ 2,850	
6.7% X 1/2 X \$100,000	<u>0</u>	<u>\$ 3,350</u>
Net interest expense	<u>\$ 2,850</u>	<u>\$ 3,350</u>

Note to instructor: An interest rate swap in which a company changes its interest payments from fixed to variable is a fair value hedge because the changes in fair value of both the derivative and the hedged liability offset one another.

***EXERCISE 17-21 (20-25 minutes)**

(a) and (b)	<u>12/31/02</u>	<u>12/31/03</u>
Variable-rate debt	\$10,000,000	\$10,000,000
Variable rate	<u>5.8%</u>	<u>6.6%</u>
Debt payment	<u>\$ 580,000</u>	<u>\$ 660,000</u>
Debt payment	\$ 580,000	\$ 660,000
Swap variable received	<u>(580,000)</u>	<u>(660,000)</u>
Net income effect	\$ 0	\$ 0
Swap payable—fixed	<u>600,000</u>	<u>600,000</u>
Net interest expense	<u>\$ 600,000</u>	<u>\$ 600,000</u>

Note to instructor: An interest swap in which a company changes its interest payments from variable to fixed is a cash flow hedge because interest costs are always the same.

***EXERCISE 17-22 (15-20 minutes)**

(a)	Interest Expense	75,000	
	Cash (7.5% X 1,000,000)		75,000
(b)	Cash	13,000	
	Interest Expense		13,000
(c)	Swap Contract.....	48,000	
	Unrealized Holding Gain or Loss— Income.....		48,000
(d)	Unrealized Holding Gain or Loss—Income	48,000	
	Note Payable.....		48,000

***EXERCISE 17-23 (15-20 minutes)**

(a)	Cash (7.5% X \$1,000,000)	75,000	
	Interest Revenue		75,000
(b)	Interest Revenue	13,000	
	Cash.....		13,000
(c)	Unrealized Holding Gain or Loss—Income	48,000	
	Swap Contract		48,000
(d)	Securities Fair Value Adjustment (Available-for-Sale)	48,000	
	Unrealized Holding Gain or Loss—Income		48,000

TIME AND PURPOSE OF PROBLEMS

Problem 17-1 (Time 20-30 minutes)

Purpose—the student is required to prepare journal entries and adjusting entries covering a three-year period for debt securities first classified as held-to-maturity and then classified as available-for-sale. Bond premium amortization is also involved.

Problem 17-2 (Time 30-40 minutes)

Purpose—The student is required to prepare journal entries and adjusting entries for available-for-sale debt securities, along with an amortization schedule and a discussion of financial statement presentation.

***Problem 17-3** (Time 25-30 minutes)

Purpose—to provide the student with an understanding of the differentiation in accounting treatments for debt and equity security investments. The student is required to prepare the necessary journal entries to properly reflect transactions relating to available-for-sale debt and equity securities.

Problem 17-4 (Time 25-35 minutes)

Purpose—the student is required to distinguish between the existence of a bond premium or discount and the use of the effective interest method and the straight-line method. The student is also required to prepare the adjusting entries at two year-ends for available-for-sale debt securities.

Problem 17-5 (Time 25-35 minutes)

Purpose—the student is required to prepare journal entries for the sale and purchase of available-for-sale equity securities along with the year-end adjusting entry for unrealized holding gains or losses and to discuss the financial statement presentation.

Problem 17-6 (Time 25-35 minutes)

Purpose—the student is required to prepare during-the-year and year-end entries for trading equity securities and to explain how the entries would differ if the securities were classified as available-for-sale.

Problem 17-7 (Time 25-35 minutes)

Purpose—the student is required to prepare during-the-year and year-end entries for available-for-sale debt securities and to explain how the entries would differ if the securities were classified as held-to-maturity.

Problem 17-8 (Time 20-30 minutes)

Purpose—to provide the student with an understanding of the accounting for trading and available-for-sale equity securities. The student is required to apply the fair value method to both classes of securities and describe how they would be reflected in the body and notes to the financial statements.

Problem 17-9 (Time 20-30 minutes)

Purpose—to provide the student with an understanding of the proper accounting treatment with respect to available-for-sale equity securities and the resulting effect of a reclassification from available-for-sale to trading status. The student is required to discuss the descriptions and amounts which would be reported on the face of the balance sheet with regard to these investments, plus prepare any necessary note disclosures.

Problem 17-10 (Time 20-30 minutes)

Purpose—to provide the student with an opportunity to prepare entries for available-for-sale transactions and to report the results in a comprehensive income statement and a balance sheet.

Problem 17-11 (Time 30-40 minutes)

Purpose—to provide the student with an understanding of the reporting problems associated with available-for-sale equity securities. Description and amounts that should be reported on a company's comparative financial statements are then required.

Time and Purpose of Problems (Continued)

Problem 17-12 (Time 20-30 minutes)

Purpose—to provide the student with an understanding of the reporting problems associated with available-for-sale equity securities. Description and amounts that should be reported on a company's comparative financial statements are then required.

Problem 17-13 (Time 20-25 minutes)

Purpose—the student is required to prepare the entries at purchase, throughout the life, and at expiration for a stand alone derivative (call option).

Problem 17-14 (Time 20-25 minutes)

Purpose—the student is required to prepare the entries at purchases, throughout the life, and at expiration for a stand alone derivative (put option).

Problem 17-15 (Time 20-25 minutes)

Purpose—the student is required to prepare the entries at purchase, throughout the life, and at expiration for a stand alone derivative (put option). The derivative expires out of the money.

Problem 17-16 (Time 30-40 minutes)

Purpose—the student is provided with an opportunity to prepare the entries for a fair value hedge in the context of an interest rate swap, including how the effects of the swap will be reported in the financial statements.

Problem 17-17 (Time 25-35 minutes)

Purpose—the student is provided with an opportunity to prepare the entries for a cash flow hedge in the context of an option contract on the purchase of inventory, including how the effects of the hedge will be reported in the financial statements.

Problem 17-18 (Time 25-35 minutes)

Purpose—the student is provided with an opportunity to prepare the entries for a fair value hedge in the context of the use of a put option to hedge an available-for-sale security, including how the effects for the hedging instrument and hedged item will be reported in the financial statements.

SOLUTIONS TO PROBLEMS

PROBLEM 17-1

(a)	December 31, 2001		
	Held-to-Maturity Securities	108,660	
	Cash		108,660
(b)	December 31, 2002		
	Cash	7,000	
	Held-to-Maturity Securities		1,567
	Interest Revenue		5,433
(c)	December 31, 2004		
	Cash	7,000	
	Held-to-Maturity Securities		1,728
	Interest Revenue		5,272
(d)	December 31, 2001		
	Available-for-Sale Securities	108,660	
	Cash		108,660
(e)	December 31, 2002		
	Cash	7,000	
	Available-for-Sale Securities		1,567
	Interest Revenue		5,433
	Unrealized Holding Gain or Loss- Equity (\$107,093 - \$106,500)	593	
	Securities Fair Value Adjustment (Available-for-Sale)		593
(f)	December 31, 2004		
	Cash	7,000	
	Available-for-Sale Securities		1,728
	Interest Revenue		5,272

Problem 17-1 (Continued)

Available-for-Sale Securities

	Amortized Cost	Fair Value	Unrealized Gain (Loss)
Baker Company, 7% bonds	\$103,719	\$105,650	\$1,931
Previous securities fair value adjustment—Dr.			<u>2,053</u>
Securities fair value adjustment—Cr.			<u><u>\$ (122)</u></u>
Unrealized Holding Gain or Loss-Equity		122	
Securities Fair Value Adjustment (Available-for-Sale).....			122

PROBLEM 17-2

(a) January 1, 2004 purchase entry:

Available-for-Sale Securities	184,557	
Cash		184,557

(b) The amortization schedule is as follows:

**Schedule of Interest Revenue and Bond Discount
Amortization—Effective Interest Method
8% Bonds Purchased to Yield 10%**

Date	Cash Received	Interest Revenue	Bond Discount Amortization	Carrying Amount of Bonds
1/1/04				\$184,557
7/1/04	8,000	\$ 9,228	\$ 1,228	185,785
12/31/04	8,000	9,289	1,289	187,074
7/1/05	8,000	9,354	1,354	188,428
12/31/05	8,000	9,421	1,421	189,849
7/1/06	8,000	9,492	1,492	191,341
12/31/06	8,000	9,567	1,567	192,908
7/1/07	8,000	9,645	1,645	194,553
12/31/07	8,000	9,728	1,728	196,281
7/1/08	8,000	9,814	1,814	198,095
12/31/08	<u>8,000</u>	<u>9,905</u>	<u>1,905</u>	200,000
Total	<u>\$80,000</u>	<u>\$95,443</u>	<u>\$15,443</u>	

(c) Interest entries:

July 1, 2004

Cash	8,000	
Available-for-Sale Securities	1,228	
Interest Revenue		9,228

December 31, 2004

Interest Receivable	8,000	
Available-for-Sale Securities	1,289	
Interest Revenue		9,289

PROBLEM 17-2 (Continued)

(d) December 31, 2005 adjusting entry:

Securities	Available-for-Sale Portfolio Cost	Fair Value	Unrealized Gain (Loss)
Mercury (total portfolio value)	<u>\$189,849*</u>	<u>\$186,363</u>	\$(3,486)
Previous securities fair value adjustment—Dr.			<u>3,375</u>
Securities fair value adjustment—Cr.			<u>\$(6,861)</u>

*This is the amortized cost of the Mercury bonds on December 31, 2005. See (b) schedule.

December 31, 2005

Unrealized Holding Gain or Loss—Equity.....	6,861	
Securities Fair Value Adjustment (Available-for-Sale)		6,861

(e) January 1, 2006 sale entry:

Selling price of bonds	\$185,363
Less: Amortized cost (see schedule from (b))	<u>(189,849)</u>
Realized loss on sale of investment (available-for-sale)	<u>\$ (4,486)</u>

January 1, 2006

Cash	185,363	
Loss on Sale of Securities	4,486	
Available-for-Sale Securities		189,849

PROBLEM 17-3

(a) Available-for-Sale Securities	189,400*	
Interest Revenue ($\$50,000 \times .12 \times 4/12$)	2,000	
Investments		191,400

*($\$37,400 + \$100,000 + \$52,000$)

(b) December 31, 2003

Interest Receivable	7,750.00	
Available-for-Sale Securities		50.85
Interest Revenue		7,699.15
[Accrued interest		
$\$50,000 \times .12 \times 10/12 =$	\$5,000.00	
Premium amortization		
$6/236 \times \$2,000 =$	(50.85)	
Accrued interest		
$\$100,000 \times .11 \times 3/12 =$	<u>2,750.00</u>	
		<u>\$7,699.15]</u>

(c) December 31, 2003
Available-for-Sale Portfolio

Securities	Cost	Fair Value	Unrealized Gain (Loss)
Chang Kai-shek Company stock	\$ 37,400	\$ 33,800	\$ (3,600)
U.S. government bonds	100,000	124,700	24,700
Claude Monet Company bonds	<u>51,949.15</u>	<u>58,600</u>	<u>6,650.85</u>
Total	<u>\$189,349.15</u>	<u>\$217,100</u>	27,750.85
Previous securities fair value adjustment balance			<u>0</u>
Securities fair value adjustment—Dr.			<u>\$27,750.85</u>

PROBLEM 17-3 (Continued)

	Securities Fair Value Adjustment		
	(Available-for-Sale)	27,750.85	
	Unrealized Holding Gain or Loss—		
	Equity		27,750.85
(d)	July 1, 2004		
	Cash (\$119,200 + \$2,750).....	121,950	
	Available-for-Sale Securities.....		100,000
	Interest Revenue		2,750
	(\$100,000 X .11 X 3/12)		
	Gain on Sale of Securities.....		19,200

PROBLEM 17-4

(a) The bonds were purchased at a discount. That is, they were purchased at less than their face value because the bonds' amortized cost increased from \$491,150 to \$550,000.

(b) December 31, 2003

Securities Fair Value Adjustment		
(Available-for-Sale)	6,850	
Unrealized Holding Gain or Loss—Equity		6,850

Available-for-Sale Portfolio

	Amortized Cost	Fair Value	Unrealized Gain (Loss)
Bond Investment	\$491,150	\$499,000	\$7,850
Previous securities fair value adjustment—Dr.			<u>1,000</u>
Securities fair value adjustment—Dr.			<u>\$6,850</u>

(c) December 31, 2004

Unrealized Holding Gain or Loss—Equity	21,292	
Securities Fair Value Adjustment (Available-for-Sale)		21,292

Available-for-Sale Portfolio

	Amortized Cost	Fair Value	Unrealized Gain (Loss)
Bond Investment	\$519,442	\$506,000	\$(13,442)
Previous securities fair value adjustment—Dr.			<u>7,850</u>
Securities fair value adjustment—Dr.			<u>\$21,292</u>

PROBLEM 17-5

(a) Gross selling price of 3,000 shares at \$23	\$69,000
Less: Commissions, taxes, and fees	<u>(2,150)</u>
Net proceeds from sale	66,850
Cost of 3,000 shares	<u>(58,500)</u>
Gain on sale of stock	<u>\$ 8,350</u>

January 15, 2004

Cash	66,850	
Available-for-Sale Securities.....		58,500
Gain on Sale of Stock		8,350

- (b) The total purchase price is:
 (1,000 X \$31.50) + \$1,980 = \$33,480.

The purchase entry will be:

April 17, 2004

Available-for-Sale Securities	33,480	
Cash.....		33,480

- (c) Available-for-Sale Portfolio—December 31, 2004

Securities	Cost	Fair Value	Unrealized Gain (Loss)
Sanborn Ltd.	\$580,000	\$620,000	\$40,000
Abba Co.	255,000	240,000	(15,000)
Tractors Co.	<u>33,480</u>	<u>29,000</u>	<u>(4,480)</u>
Total of portfolio	<u>\$868,480</u>	<u>\$889,000</u>	20,520
Previous securities fair value adjustment balance—Cr.			<u>(10,100)</u>
Securities fair value adjustment—Dr.			<u>\$30,620</u>

December 31, 2004

Securities Fair Value Adjustment (Available-for-Sale)	30,620	
Unrealized Holding Gain or Loss—Equity		30,620

PROBLEM 17-5 (Continued)

- (d) The unrealized holding gains or losses should be reported on the balance sheet under the title “accumulated other comprehensive income” as a separate component of stockholders’ equity.**

PROBLEM 17-6

(a) (1) October 10, 2003

Cash.....	270,000	
Gain on Sale of Stock		45,000
Trading Securities		225,000

(2) November 2, 2003

Trading Securities.....	178,500	
Cash.....		178,500

(3) At September 30, 2003, Gypsy Kings had the following fair value adjustment:

Trading Securities Portfolio—September 30, 2003

Securities	Cost	Fair Value	Unrealized Gain (Loss)
Fogelberg common	\$225,000	\$200,000	\$(25,000)
Petra, Inc. preferred	133,000	140,000	7,000
Weisberg common	<u>180,000</u>	<u>179,000</u>	<u>(1,000)</u>
Total of portfolio	<u>\$538,000</u>	<u>\$519,000</u>	(19,000)
Previous securities fair value adjustment balance			<u>0</u>
Securities fair value adjustment—Cr.			<u><u>\$(19,000)</u></u>

PROBLEM 17-6 (Continued)

At December 31, 2003, Gypsy Kings had the following fair value adjustment:

Trading Securities Portfolio—December 31, 2003

Securities	<u>Cost</u>	<u>Fair Value</u>	<u>Unrealized Gain (Loss)</u>
Petra, Inc. preferred	\$133,000	\$ 96,000	\$(37,000)
Weisberg common	180,000	193,000	13,000
Los Tigres common	<u>178,500</u>	<u>132,000</u>	<u>(46,500)</u>
Total of portfolio	<u>\$491,500</u>	<u>\$421,000</u>	(70,500)
Previous securities fair value adjustment balance—Cr.			<u>(19,000)</u>
Securities fair value adjustment—Cr.			<u>\$(51,500)</u>

The entry on December 31, 2003 is therefore as follows:

Unrealized Holding Gain or Loss—Income.....	51,500	
Securities Fair Value Adjustment (Trading).....		51,500

- (b) The entries would be the same except that instead of debiting and crediting accounts associated with trading securities, the accounts used would be associated with available-for-sale securities. In addition, the Unrealized Holding Gain or Loss—Equity account is used instead of Unrealized Holding Gain or Loss—Income. The unrealized holding loss in this case would be deducted from the stockholders' equity section rather than charged to the income statement.

PROBLEM 17-7

(a)

February 1

Available-for-Sale Securities	500,000	
Interest Revenue*	20,000	
Cash.....		520,000

* $(4/12 \times .12 \times \$500,000 = \$20,000)$

April 1

Cash	30,000	
Interest Revenue $(\$500,000 \times .12 \times 6/12)$		30,000

July 1

Available-for-Sale Securities	200,000	
Interest Revenue*	1,500	
Cash.....		201,500

* $(1/12 \times .09 \times \$200,000 = \$1,500)$

September 1

Cash	104,000	
$[(\$100,000 \times 99\%) + (\$100,000 \times .12 \times 5/12)]$		
Loss on Sale of Securities.....	1,000	
Available-for-Sale Securities.....		100,000
Interest Revenue		5,000
$(5/12 \times .12 \times \$100,000 = \$5,000)$		

October 1

Cash	24,000	
$[(\$500,000 - \$100,000) \times .12 \times 6/12]$		
Interest Revenue		24,000

December 1

Cash $(\$200,000 \times 9\% \times 6/12)$	9,000	
Interest Revenue		9,000

PROBLEM 17-7 (Continued)

December 31

Interest Receivable	13,500	
Interest Revenue		13,500
(3/12 X \$400,000 X .12 = \$12,000)		
(1/12 X \$200,000 X .09 = \$1,500)		
(\$12,000 + \$1,500 = \$13,500)		

December 31

Unrealized Holding Gain or Loss—Equity	34,000	
Securities Fair Value Adjustment (Available-for-Sale)		34,000

Available for Sale Portfolio

<u>Security</u>	<u>Cost</u>	<u>Market</u>	<u>Unrealized Gain (Loss)</u>
Vanessa Williams Co.	\$400,000	\$380,000*	\$(20,000)
Chieftains, Inc.	<u>200,000</u>	<u>186,000**</u>	<u>(14,000)</u>
Total	<u>\$600,000</u>	<u>\$566,000</u>	<u>\$34,000</u>

*400,000 X 95%

**\$200,000 X 93%

(Note to instructor: Some students may debit Interest Receivable at date of purchase instead of Interest Revenue. This procedure is correct, assuming that when the cash is received for the interest, an appropriate credit to Interest Receivable is recorded.)

- (b) All the entries would be the same except the account title Held-to-Maturity Securities would be used instead of Available-for-Sale Securities. In addition, held-to-maturity securities would be carried at amortized cost and not valued at fair value at year-end, so the last entry would not be made.

PROBLEM 17-8

(a) 1. Investment in trading securities:

Unrealized Holding Gain or Loss—		
Income	180,000	
Securities Fair Value Adjustment		
(Trading).....		180,000

2. Investment in available-for-sale securities:

Securities Fair Value Adjustment		
(Available-for-Sale)	775,000	
Unrealized Holding Gain or Loss—		
Equity		775,000

Computations:

1.		<u>Cost</u>	<u>Fair Value</u>	<u>Unrealized Gain (Loss)</u>
	Security			
	Davis Motors	\$1,400,000	\$1,600,000	\$ 200,000
	Smits Electric	<u>1,000,000</u>	<u>620,000</u>	<u>(380,000)</u>
	Total of portfolio	<u>\$2,400,000</u>	<u>\$2,220,000</u>	<u>\$(180,000)</u>
2.	Current market value of Ricky Pierce Industries equity			\$22,275,000
	2003 market value of Ricky Pierce Industries equity			<u>21,500,000</u>
	Increase in fair value			<u>\$ 775,000</u>

(b) The unrealized holding loss on the valuation of Pacers' trading securities is reported on the income statement. The loss would appear in the "Other Expenses and Losses" section of the income statement and would be included in "Income Before Extraordinary Items." The Securities Fair Value Adjustment is a valuation account and it will be used to show the reduction in the fair value of the trading securities. The trading securities portfolio is disclosed in the balance sheet as a current asset and reported at its fair value.

PROBLEM 17-8 (Continued)

The unrealized holding gain on the valuation of Pacers' available-for-sale securities is reported as other comprehensive income and as a separate component of stockholders' equity. The Securities Fair Value Adjustment is used to report the increase in fair value of the available-for-sale securities. The fair value of the securities is reported in the Investments section of the balance sheet. It should be noted that a combined statement of income and comprehensive income, a statement of comprehensive income, or a statement of stockholders' equity would report the components of comprehensive income.

The note disclosures for the available-for-sale securities include the aggregate fair value, gross unrealized holding gains, and gross unrealized holding losses. Any change in the net unrealized holding gain or loss account should also be disclosed. The disclosure for trading securities includes the change in net unrealized holding gain or loss which was included in earnings.

PROBLEM 17-9

(a) Available-for-Sale Portfolio

Securities	Cost	Market	Unrealized Gain (Loss)
Favre, Inc.	\$ 22,000	\$ 32,000	\$ 10,000
Walsh Corp.	115,000	85,000	(30,000)
Dilfer Company	<u>124,000</u>	<u>96,000</u>	<u>(28,000)</u>
Total of portfolio	<u>\$261,000</u>	<u>\$213,000</u>	<u>\$(48,000)</u>

Balance Sheet—December 31, 2003

Long-term investments:

Available-for-sale securities, at cost	\$261,000	
Less: Securities fair value adjustment	<u>48,000</u>	
Available-for-sale securities, at fair value		\$213,000

Stockholders' equity:

Common stock	\$	xx
Additional paid-in capital		xx
Retained earnings		xx
Accumulated other comprehensive loss		<u>(48,000)</u>
Total stockholders' equity	\$	xx

(b) Available-for-Sale Portfolio

Securities	Cost	Market	Unrealized Gain (Loss)
Walsh Corp.	\$115,000	\$150,000	\$35,000
Dilfer Company	<u>174,000</u>	<u>138,000</u>	<u>(36,000)</u>
Total of portfolio	<u>\$289,000</u>	<u>\$288,000</u>	<u>\$(1,000)</u>
Previous securities fair value adjustment balance—Cr.			<u>(48,000)</u>
Securities Fair Value Adjustment—Dr.			<u>\$47,000</u>

PROBLEM 17-9 (Continued)

Balance Sheet—December 31, 2004

Long-term investments:	
Available-for-sale securities, at cost	\$289,000
Less: Securities fair value adjustment	<u> 1,000</u>
Available-for-sale securities, at fair value	\$288,000
Stockholders' equity:	
Common stock	\$ xx
Additional paid-in capital	 xx
Retained earnings	 xx
Accumulated other comprehensive loss	<u> (1,000)</u>
Total stockholders' equity	\$ xx

The Favre security is transferred to the trading security category at fair value, which is the new cost basis of the security. The unrealized holding loss of \$4,000 [(\$11 – \$9) X 2,000] is recognized in earnings at the date of the transfer.

(c) Note 2—Investments.

The fair values and unrealized holding gains and losses of equity securities were as follows:

December 31, 2004

Available-for-Sale	Cost	Gross Unrealized		Fair Value
		Gains	Losses	
Equity securities	\$289,000	\$35,000	\$(36,000)	\$288,000

December 31, 2003

Available-for-Sale	Cost	Gross Unrealized		Fair Value
		Gains	Losses	
Equity securities	\$261,000	\$10,000	\$(58,000)	\$213,000

PROBLEM 17-9 (Continued)

On December 31, 2004, the company transferred the investment in Favre, Inc. to the trading portfolio. This transfer resulted in a realized loss of \$4,000. The balance of the unrealized holding gain or loss account changed during 2004 from a debit balance of \$48,000 at the beginning of the year to a debit balance of \$1,000 at the end of the year.

PROBLEM 17-10

(a) January 1, 2003

Fair value of available-for-sale securities	\$240,000
Accumulated other comprehensive income	<u>40,000</u>
Cost basis	<u>\$200,000</u>

December 31, 2003

Fair value of available-for-sale securities	\$190,000
Cost basis	<u>\$120,000</u>
Accumulated other comprehensive income	<u>\$ 70,000</u>

Cash (\$80,000 + \$20,000)	100,000	
Gain on Sale of Securities		20,000
Available-for-Sale Securities		<u>80,000</u>

(b) **ENID INC.**
Statement of Comprehensive Income
For the Year Ended December 31, 2003

Net income		\$35,000
Other comprehensive income		
Total holding gains arising during the year	\$50,000*	
Less: Reclassification adjustment for gains included in income	<u>20,000</u>	<u>30,000</u>
Comprehensive income		<u>\$65,000</u>

*Accumulated other comprehensive income 12/31/03		\$70,000
Accumulated other comprehensive income 1/1/03		<u>40,000</u>
Increase in unrealized holding gain		30,000
Realized holding gain		<u>20,000</u>
Total unrealized holding gain arising during period		<u>\$50,000</u>

PROBLEM 17-10 (Continued)

(c)

**ENID INC.
Balance Sheet
As of December 31, 2003**

<u>Assets</u>		<u>Equity</u>	
Cash	\$165,000*	Common stock	\$250,000
Available-for-sale securities	190,000	Retained earnings	35,000
		Accumulated other comprehensive income	<u>70,000</u>
Total assets	<u>\$355,000</u>	Total equity	<u>\$355,000</u>
*Beginning balance			\$ 50,000
Dividend revenue			15,000
Cash proceeds on sale			<u>100,000</u>
			<u>\$165,000</u>

PROBLEM 17-11

(a)

1.	3/1/02	Cash	1,800	
		Dividend Revenue		1,800
		(900 x \$2)		
2.	4/30/02	Cash	3,000	
		Gain on Sale of Stock*		300
		Available-for-Sale Securities.....		2,700
		*(300 x (\$10 - \$9))		
3.	5/15/02	Available-for-Sale Securities.....	800	
		Cash.....		800
		(50 x \$16)		
4.	12/31/02	Securities Fair Value Adjustment	8,450	
		Unrealized Holding Gain or Loss-Equity		8,450

Security	Cost	Fair Value	Unrealized Gain (Loss)
Earl Comp.	\$ 15,800	\$ 17,850	\$ 2,050
Josie Comp.	18,000	17,100	(900)
David Comp.	<u>1,800</u>	<u>1,600</u>	<u>(200)</u>
Total of Portfolio	<u>\$ 35,600</u>	<u>\$ 36,550</u>	\$ 950
Previous securities fair value adjustment bal.—Cr.			(7,500)
Securities fair value adjustment—Dr.			<u>\$ 8,450</u>

5.	2/1/03	Cash	1,400	
		Loss on Sale of Stock*	400	
		Available-for-Sale Securities.....		1,800
		*(200 x (\$7 - \$9))		
6.	3/1/03	Cash	1,800	
		Dividend Revenue		1,800

PROBLEM 17-11 (Continued)

7.	12/21/03	Dividend Receivable.....	3,150	
		Dividend Revenue		3,150
		(1,050 x \$3)		
8.	12/31/03	Securities Fair Value Adjustment	4,100	
		Unrealized Holding Gain or Loss-Equity		4,100

Security	Cost	Fair Value	Unrealized Gain (Loss)
Earl Comp.	\$ 15,800	\$ 19,950	\$ 4,150
Josie Comp.	<u>18,000</u>	<u>18,900</u>	<u>900</u>
Total of Portfolio	<u>\$ 33,800</u>	<u>\$ 38,850</u>	\$ 5,050
Previous securities fair value adjustment bal.—Cr.			<u>950</u>
Securities fair value adjustment—Dr.			<u>\$ 4,100</u>

(b) Partial Balance Sheet as of	December 31, 2002	December 31, 2003
Current Assets	\$ 0	\$ 3,150
Dividends Receivable		
Investments		
Available-for-sale securities, at fair value	36,550	38,850
Stockholders' equity		
Accumulated other comprehensive gain	950	5,050

PROBLEM 17-12

(a) Balance Sheet

Available-for-Sale Securities, at fair value	\$123,000
(Reported as current or noncurrent based on intent)	
Unrealized Holding Loss on Securities	\$ 14,000
(\$137,000 - \$123,000) (reported as a separate component of stockholders' equity as a deduction and identified as accumulated other comprehensive loss)	

Income Statement

No effect

(b) Balance Sheet

Available-for-Sale Securities, at fair value	\$94,000
(Reported as current or noncurrent based on intent)	
Unrealized Holding Loss on Securities	\$47,000
(\$141,000 - \$94,000) (reported as a separate component of stockholders' equity as a deduction and identified as accumulated other comprehensive loss)	

Income Statement

Other Expenses and Losses

Loss on Sale of Securities	\$11,800*
-----------------------------------	------------------

***The entry made to recognize the loss on sale is as follows:**

Cash	38,200	
Loss on Sale of Securities	11,800	
Available-for-Sale Securities		50,000

PROBLEM 17-12 (Continued)

(c)

Balance Sheet

Available-for-Sale Securities, at fair value	\$88,000
(Reported as current or noncurrent based on intent)	
Unrealized Holding Gain on Securities	\$ 8,000
(\$88,000 - \$80,000) (reported as a separate component of stockholders' equity as an addition and identified as accumulated other comprehensive gain)	

Income Statement

Other Expenses and Losses	
Loss on Sale of Securities (\$13,100 + \$2,700)	\$15,800

The entry made to record the sale of Jones' stock was:

Cash	39,900	
Loss on Sale of Securities	13,100	
Available-for-Sale Securities		53,000
(\$15,000 + \$38,000)		

(d) (1) **Statement of Comprehensive Income**

Reports unrealized holding loss of \$14,000 as part of comprehensive income.

(2) **Statement of Comprehensive Income**

Total holding loss arising during period	\$44,800*
Less: Reclassification adjustment for loss included in net income	<u>11,800</u>
Net unrealized loss	\$33,000

***\$47,000 - \$14,000 + \$11,800**

***PROBLEM 17-13**

	<u>July 7, 2002</u>		
(a)	Call Option.....	240	
	Cash		240
	<u>September 30, 2002</u>		
(b)	Call Option.....	1,400	
	Unrealized Holding Gain or Loss—Income..... (\$7 X 200)		1,400
	Unrealized Holding Gain or Loss—Income.....	60	
	Call Option (\$240 – \$180)		60
	<u>December 31, 2002</u>		
(c)	Unrealized Holding Gain or Loss—Income.....	400	
	Call Option (\$2 X 200).....		400
	Unrealized Holding Gain or Loss—Income.....	115	
	Call Option (\$180 – \$65)		115
	<u>January 4, 2003</u>		
(d)	Unrealized Holding Gain or Loss—Income.....	35	
	Call Option (\$65 – \$30)		35
	Cash (200 X \$6)	1,200	
	Gain on Settlement of Call Option*		170
	Call Option**		1,030

*Computation of Gain: \$200 (200 shares X \$1) – \$30

**Value of Call Option at settlement:

Call Option	
240	
1,400	60
	400
	115
	35
1,030	

*PROBLEM 17-14

(a)	<u>July 7, 2002</u>		
	Put Option.....	240	
	Cash.....		240
(b)	<u>September 30, 2002</u>		
	Unrealized Holding Gain or Loss—Income	115	
	Put Option (\$240 – \$125)		115
(c)	<u>December 31, 2002</u>		
	Unrealized Holding Gain or Loss—Income	75	
	Put Option (\$125 – \$50)		75
(d)	<u>January 31, 2003</u>		
	Loss on Settlement of Put Option.....	50	
	Put Option (\$50 – \$0)		50

***PROBLEM 17-15**

(a)	<u>January 7, 2003</u>		
	Put Option.....	360	
	Cash		360
(b)	<u>March 31, 2003</u>		
	Put Option.....	2,000	
	Unrealized Holding Gain or Loss—Income		2,000
	(\$5 X 400)		
	 Unrealized Holding Gain or Loss—Income.....	160	
	Put Option (\$360 – \$200)		160
(c)	<u>June 30, 2003</u>		
	Unrealized Holding Gain or Loss—Income.....	800	
	Put Option (\$2 X 400).....		800
	 Unrealized Holding Gain or Loss—Income.....	110	
	Put Option (\$200 – \$90)		110
(d)	<u>July 6, 2003</u>		
	Unrealized Holding Gain or Loss—Income.....	65	
	Put Option (\$90 – \$25)		65
	 Cash (400 X \$8)	3,200	
	Gain on Settlement of Put Option		1,975
	Put Option*		1,225

***Value of Put Option at settlement:**

Put Option	
360	
2,000	160
	800
	110
1,290	1,225
	65

***PROBLEM 17-16**

(a) (1) No entry necessary at the date of the swap because the fair value of the swap at inception is zero.

		<u>June 30</u>			
(2)	Interest Expense		400,000		
	Cash (8% X \$10,000,000 X 1/2)			400,000	

		<u>June 30</u>			
(3)	Cash.....		50,000		
	Interest Expense.....			50,000	

	<u>Interest Received (Paid)</u>
Swap receivable (8% X \$10,000,000 X 1/2)	\$400,000
Payable at LIBOR (7% X \$10,000,000 X 1/2)	<u>(350,000)</u>
Cash settlement	<u>50,000</u>

		<u>June 30</u>			
(4)	Note Payable.....		200,000		
	Unrealized Holding Gain or Loss— Income			200,000	

		<u>June 30</u>			
(5)	Unrealized Holding Gain or Loss— Income		200,000		
	Swap Contract			200,000	

(b) Financial statement presentation as of December 31, 2002

Balance Sheet

Liabilities

 Notes Payable \$10,000,000

Income Statement

No effect

***PROBLEM 17-16 (Continued)**

(c) Financial statement presentation as of June 30, 2003

Balance Sheet

Liabilities

Notes Payable	\$9,800,000
Swap Contract	200,000

Income Statement

Interest expense	\$350,000	(\$400,000 – \$50,000)
Unrealized Holding Gain— Note Payable	\$200,000	
Unrealized Holding Loss— Swap	(200,000)	
Total	<u>\$ 0</u>	

(d) Financial statement presentation as of December 31, 2003

Balance Sheet

Assets

Swap Contract	\$ 60,000
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Liabilities

Notes Payable	10,060,000
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Income Statement

Interest expense		
First six months	\$350,000	[as shown in (c)]
Next six months	<u>375,000*</u>	(see below)
Total	<u>\$725,000</u>	
Unrealized Holding Gain— Swap	\$60,000	
Unrealized Holding Loss— Note Payable	(60,000)	
Total	<u>\$ 0</u>	

***Swap receivable**

(8% X \$10,000,000 X 1/2)	\$400,000
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Payable at LIBOR

(7.5% X 10,000,000 X 1/2)	<u>375,000</u>
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Cash settlement	<u>\$ 25,000</u>
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Interest expense unadjusted

June 30–December 31, 2003	\$400,000
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Cash settlement	<u>(25,000)</u>
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<u>\$375,000</u>

***PROBLEM 17-17**

(a) April 1, 2002
Memorandum entry to indicate entering into the futures contract.

(b) June 30, 2002

Futures Contract	5,000	
Unrealized Holding Gain or Loss— Equity [(\$310 – \$300) X 500 ounces]		5,000

(c) September 30, 2002

Futures Contract	2,500	
Unrealized Holding Gain or Loss— Equity [(\$315 – \$310) X 500 ounces]		2,500

(d) October 10, 2002

Gold Inventory	157,500	
Cash (\$315 X 500 ounces)		157,500
Cash	7,500	
Futures Contract		7,500
[(\$315 – \$300) X 500 ounces]		

Note to instructor: In practice, futures contracts are settled on a daily basis; for our purposes, we show only one settlement for the entire amount.

(e) December 20, 2002

Cash	350,000	
Sales Revenue		350,000
Cost of Goods Sold	200,000	
Inventory (Jewelry)		200,000
Unrealized Holding Gain or Loss—Equity	7,500	
Cost of Goods Sold (\$5,000 + \$2,500)		7,500

***PROBLEM 17-17 (Continued)**

(f)

**LEW JEWELRY COMPANY
Partial Balance Sheet
At June 30, 2002**

Current Assets

Futures contract **\$5,000**

Stockholders' Equity

Accumulated other comprehensive income **\$5,000**

There are no income effects associated with this anticipated transaction in the quarter ended June 30, 2002.

(g)

**LEW JEWELRY COMPANY
Partial Income Statement
For the Quarter Ended December 31, 2002**

Sales revenue	\$350,000
Cost of goods sold	<u>192,500*</u>
Gross profit	<u>\$157,500</u>

*Cost of inventory	\$200,000
Less: Futures contract adjustment	<u>(7,500)</u>
Cost of goods sold	<u>\$192,500</u>

***PROBLEM 17-18**

(a)	1.	<u>November 3, 2003</u>		
		Available-for-Sale Securities	200,000	
		Cash (4,000 X \$50).....		200,000
		Put Option.....	600	
		Cash.....		600
	2.	<u>December 31, 2003</u>		
		Unrealized Holding Gain or Loss—		
		Income	225	
		Put Option (\$600 – \$375)		225
	3.	<u>March 31, 2004</u>		
		Unrealized Holding Gain or Loss—		
		Income	20,000	
		Securities Fair Value Adjustment—		
		Available-for-Sale.....		20,000
		[($\$50 - \45) X 4,000]		
		Put Option.....	20,000	
		Unrealized Holding Gain or Loss—		
		Income [($\$50 - \45) X 4,000]		20,000
		Unrealized Holding Gain or Loss—		
		Income	200	
		Put Option ($\$375 - \175)		200
	4.	<u>June 30, 2004</u>		
		Unrealized Holding Gain or Loss—		
		Income	8,000	
		Securities Fair Value Adjustment—		
		Available-for-Sale.....		8,000
		[($\$45 - \43) X 4,000]		
		Put Option.....	8,000	
		Unrealized Holding Gain or Loss—		
		Income [($\$45 - \43) X 4,000]		8,000

***PROBLEM 17-18 (Continued)**

	Unrealized Holding Gain or Loss—		
	Income	135	
	Put Option (\$175 – \$40)		135
5.	July 1, 2004		
	Unrealized Holding Gain or Loss—		
	Income	40	
	Put Option (\$40 – \$0)		40
	Cash [(\$43 X 4,000) + Option Value]	200,000	
	Loss on Sale of Securities	28,000	
	Securities Fair Value Adjustment—		
	Available-for-Sale	28,000	
	Available-for-Sale Securities		200,000
	Put Option		28,000
	Unrealized Holding Gain or Loss—		
	Income		28,000

Note to instructor: The entry to eliminate the securities fair value adjustment could be delayed to the end of the year.

**(b) SPRINKLE COMPANY
Partial Balance Sheet
At December 31, 2003**

Assets

Available-for-Sale Securities	\$200,000
Put Option	375

**SPRINKLE COMPANY
Partial Income Statement
For the Year Ended December 31, 2003**

Other Income (Loss)	
Unrealized Holding Loss—Put Option	<u>\$(225)</u>
	<u>\$(225)</u>

***PROBLEM 17-18 (Continued)**

(c)

**SPRINKLE COMPANY
Partial Balance Sheet
At June 30, 2004**

Assets

Available-for-Sale Securities	\$172,000
Put Option	28,040

**SPRINKLE COMPANY
Partial Income Statement
For Six Months Ended June 30, 2004**

Other Income (Loss)	
Unrealized Holding Loss—Johnstone Investment	\$(28,000)
Unrealized Holding Gain—Put Option	27,665
	<u>\$ (335)</u>

TIME AND PURPOSE OF CASES

Case 17-1 (Time 25-30 minutes)

Purpose—to provide the student with an opportunity to discuss the issues raised by **FASB No. 115**. For example, the proper accounting for the reclassification of securities from trading to available-for-sale must be discussed. Four other situations involving debt and equity securities investments must be addressed.

Case 17-2 (Time 25-30 minutes)

Purpose—to provide the student with an opportunity to discuss the justification for using fair value as a basis for reporting equity securities. In addition, a number of computations are necessary to determine whether the company properly applied the reporting provisions of **FASB No. 115**.

Case 17-3 (Time 20-30 minutes)

Purpose—to provide the student with an understanding of the accounting applications dealing with investments in equity securities. This case involves three independent situations for which the student is required to discuss the effects upon classification, carrying value, and earnings.

Case 17-4 (Time 20-25 minutes)

Purpose—to provide the student with an understanding of the conceptual basis for the distinction between classifications of certain debt and all equity securities. The student is required to discuss the factors to be considered in classifying debt and equity security investments and how these factors affect the accounting treatment for unrealized losses.

Case 17-5 (Time 15-25 minutes)

Purpose—to allow the student to discuss the equity method of accounting for investments and to provide rationale for this method of accounting.

Case 17-6 (Time 25-35 minutes)

Purpose—to provide the student with an opportunity to discuss the equity method of accounting and provide rationale in a memorandum.

Case 17-7 (Time 25-35 minutes)

Purpose—to provide the student an opportunity to examine the ethics issues related to fair value accounting.

SOLUTIONS TO CASES

CASE 17-1

- Situation 1** SFAS 115 requires that securities which are classified as trading securities be reported on the balance sheet at their fair value amount. Any changes in the fair value of trading securities from one period to another are included in earnings. Therefore, the \$4,200 decrease will be reported on the income statement as an unrealized holding loss.
- Situation 2** The security should be reported in the available-for-sale category at the current fair value. The transfer of the security affects earnings because the unrealized loss at the date of transfer is recognized in the income statement.
- Situation 3** The reclassification does not affect earnings and the available-for-sale security will continue to be reported at its fair value.
- Situation 4** When a reduction in the fair value of a security is considered to be an impairment, the new cost basis of the security is its fair value. The security is written down to the fair value amount and the loss is included in earnings. In this case, the fair value of the security at the end of the prior year is the new cost basis. However, since the security is classified as available-for-sale, the fair value at the end of the current year is reported on the balance sheet. Therefore, the increase in fair value will not affect earnings but instead is reported as other comprehensive income and as a separate component of stockholders' equity.
- Situation 5** The securities would be classified as available-for-sale securities since management's intention is neither to hold the securities for the entire term nor to sell the securities in the near future (less than 3 months). Available-for-sale securities are reported on the balance sheet at the fair value. The unrealized holding loss of \$7,700 is excluded from earnings and instead is reported as other comprehensive income and as a separate component of stockholders' equity.

CASE 17-2

- (a) The reporting of available-for-sale securities at fair value provides the financial statement user with more relevant financial information. The fair value of the securities is essentially the present value of the securities' future cash flows and so this helps investors and creditors assess the entity's liquidity. Also, the fair value of the securities helps the financial statement user to assess the entity's investment strategies. The financial statements of the entity will reflect which investments have increased in fair value and which investments have decreased in fair value. However, since these securities have not been purchased with the intention of selling them in the near future, the portfolio is not managed to the same degree as trading securities. Therefore, if changes in the fair value of the available-for-sale securities were also included in earnings, the possibility exists that earnings could potentially be very unstable. Thus, to reduce this concern, any changes in fair value of the available-for-sale securities are excluded from earnings and instead recorded as other comprehensive income and as a separate component of stockholders' equity.

CASE 17-2 (Continued)

- (b) James Joyce Company should record the following journal entry and then report the following amounts on its balance sheet.

December 31, 2002

Unrealized Holding Gain or Loss (Equity)	1,600	
Securities Fair Value Adjustment (Available-for-Sale)		1,600

Balance Sheet—December 31, 2002

Long-term investment:		
Available-for-Sale Securities, at cost	\$50,000	
Less: Securities fair value adjustment	<u>1,600</u>	
Available-for-Sale Securities, at fair value		\$48,400
Stockholders' equity:		
Common stock		\$ xxx
Additional paid-in capital		xxx
Retained earnings		xxx
Accumulated other comprehensive loss		<u>(1,600)</u>
Total stockholders' equity		\$ xxx

Securities classified as available-for-sale securities should initially be recorded at their acquisition price. The valuation of these securities is subsequently reported at their fair value. Any changes in the fair value of the securities are recorded in an unrealized holding gain or loss account, which is included as other comprehensive income and as a separate component of stockholders' equity. Assuming the company prepared a statement of comprehensive income, it would show an unrealized holding loss of \$1,600 during the period.

- (c) No, James Joyce Company did not properly account for the sale of the D. H. Lawrence Company stock. The cost basis of the D. H. Lawrence stock is still \$10,000. Therefore, James Joyce should have recorded an \$800 (\$9,200 – \$10,000) loss from the sale of the securities.

Cash	9,200	
Loss on Sale of Securities	800	
Available-for-Sale Securities		10,000

- (d) December 31, 2003

Securities Fair Value Adjustment (Available-for-Sale).....	2,000	
Unrealized Holding Gain or Loss—Equity.....		2,000

Available-for-sale securities are reported at their fair value. Therefore, an adjusting entry must be made to show the \$400 increase in the fair value of the portfolio. The unrealized holding loss from the previous period must be reversed and the increase of \$400 must be recorded.

Securities	Cost	Fair Value	Unrealized Gain (Loss)
Anna Wickham Corp. stock	\$20,000	\$19,900	\$ (100)
Edith Sitwell Company stock	<u>20,000</u>	<u>20,500</u>	<u>500</u>
Total of portfolio	\$40,000	\$40,400	\$ 400
Previous fair value adjustment balance—Cr.			<u>(1,600)</u>
Securities fair value adjustment—Dr.			<u>\$2,000</u>

CASE 17-3

- Situation 1** The carrying value of the trading security will be the fair value on the date of the transfer. The unrealized holding loss, the difference between the current fair value and the cost, will be recognized immediately.
- Situation 2** When a decrease in the fair value of a security is considered to be other than temporary, an impairment in the value of the security has occurred. As a result, the security is written down to the fair value and this becomes the new cost basis of the security. The security is reported on the balance sheet at its current fair value. The amount of the write-down is included in earnings as a realized loss.
- Situation 3** Both the portfolio of trading securities and the portfolio of available-for-sale securities are reported at their fair value. The \$13,500 decrease in fair value of the trading portfolio is recorded in the unrealized holding loss account and **is included** in earnings for the period. The \$28,600 increase in fair value of the available-for-sale portfolio is recorded in the unrealized holding gain account and **is not included** in earnings for the period. Instead, the unrealized holding gain is shown as other comprehensive income and as a separate component of stockholders' equity.

CASE 17-4

- (a) A company maintains the different investment portfolios because each portfolio serves a different investment objective. Since each portfolio serves a different objective, the possible risks and returns associated with that objective should be disclosed in the financial statements. This disclosure allows the financial statement user to assess the investment strategies for the company's investments, which when classified as trading securities are designed to return a profit to the entity on the basis of short-term price changes. On the other hand, investments which are classified as held-to-maturity securities are designed to provide a steady stream of interest revenue. Investments which are classified as available-for-sale securities include the investments which are not classified in either of the first two categories. The combination of these three categories helps management to disclose in greater detail how it is investing its funds.
- (b) The factors which should be considered when determining how to properly classify investment securities are: (1) management's intent and (2) the ability to hold the securities to maturity. Management's intent is simply the purpose for which management has made the investment. If management is planning to sell the security in the near future (less than three months) and to earn its profit on the basis of any price change, then the security should be classified as a **trading security**. On the other hand, if management has the intent and ability to hold the security until its maturity, then the security should be classified as a **held-to-maturity security**. This category is restrictive in the sense that management must have the positive intent to hold the security to maturity. If management's intentions do not match either of the above categories, then the security should be classified as an **available-for-sale security**.

If a company does not intend to hold trading or available-for-sale securities until maturity, the securities are reported on the balance sheet at fair value. Therefore, if the price of the securities decreases while the company is holding the securities, the company may incur an unrealized holding loss. The treatment of the unrealized loss is determined by the classification of the securities. If they are trading securities, the unrealized loss is included in earnings. If they are available-for-sale securities, the unrealized loss is recorded as other comprehensive income and as a separate component of stockholders' equity. The rationale for this difference is that trading securities are actively managed and, therefore, any price changes should be included in earnings. Unrealized gains and losses are not recognized on held-to-maturity securities.

CASE 17-5

Since Warner Company purchased 40% of Graves Company's outstanding stock, Warner is considered to have **significant influence** over Graves Company. Therefore, Warner will account for this investment using the equity method. The investment is reported on the December 31 balance sheet as a long-term investment. The account balance includes the initial purchase price plus 40% of Graves' net income since the acquisition date of July 1, 2004. The investment account balance will be reduced by 40% of the cash dividends paid by Graves. The cash dividends represent a return of Warner's investment and, therefore, the investment account is reduced. The income statement will report the 40% of Graves' net income received by Warner as investment income.

Investment in Graves Co.	
Cost of investment	
40% of Graves' income since 7/1/04	40% of cash dividends received from Graves

CASE 17-6

Memo on accounting treatment to be accorded Investment in Huber Corporation:

Cheryl Munns Company should follow the equity method of accounting for its investment in Huber Corporation because Cheryl Munns Company is presumed to be able to exercise significant influence over the operating and financial policies of Huber Corporation due to the size of its investment (40%).

In 2003, Cheryl Munns Company should report its interest in Huber Corporation's outstanding capital stock as a long-term investment. Following the equity method of accounting, Cheryl Munns Company should record the cash purchase of 40 percent of Huber Corporation at acquisition cost.

Forty percent of Huber Corporation's total net income from July 1, 2003, to December 31, 2003, should be added to the carrying amount of the investment in Cheryl Munns Company's balance sheet and shown as revenue in its income statement to recognize Cheryl Munns Company's share of the net income of Huber Corporation after the date of acquisition. This amount should reflect adjustments similar to those made in preparing consolidated statements, including adjustments to eliminate intercompany gains and losses.

The cash dividends paid by Huber Corporation to Cheryl Munns Company should reduce the carrying amount of the investment in Cheryl Munns Company's balance sheet and have no effect on Cheryl Munns Company's income statement.

CASE 17-7

- (a) Classifying the securities as they propose will indeed have the effect on net income that they say it will. Classifying all the gains as trading securities will cause all the gains to flow through the income statement this year and classifying the losses as available-for-sale and held-to-maturity will defer the losses from this year's income statement. Classifying the gains and losses just the opposite will have the opposite effect.
- (b) What each proposes is unethical since it is knowingly not in accordance with GAAP. The financial statements are fraudulently, not fairly, stated. The affected stakeholders are other members of the company's officers and directors, the independent auditors (who may detect these misstatements), the stockholders, and prospective investors.

CASE 17-7 (Continued)

- (c) The act of selling certain securities (those with gains or those with losses) is management's choice and is not per se unethical. Generally accepted accounting principles allow the sale of selected securities so long as the inventory method of assigning cost adopted by the company is consistently applied. If the officers act in the best interest of the company and its stakeholders, and in accordance with GAAP, and not in their self-interest, their behavior is probably ethical. Knowingly engaging in unsound and poor business and accounting practices that waste assets or that misstate financial statements is unethical behavior.

FINANCIAL REPORTING PROBLEM

- (a) 3M reports \$275 million in investments in 2001. Investments primarily include the cash surrender value of life insurance policies and real estate and venture capital investments. Unrealized gains and losses relating to investments classified as available-for-sale are recorded as a component of accumulated other comprehensive income in stockholders' equity.

Investments are reported on the balance sheet after current assets and before property, plant, and equipment.

- (b) Available-for-sale investments and year-end 2001 derivative contracts are reported at fair values. Fair values for investments held at cost are not readily available, but are believed to approximate fair value. The carrying amounts are estimated based on the fair values of other financial instruments or are based on third-party quotes.
- (c) The company enters into contractual derivative arrangements in the ordinary course of business to manage foreign currency exposure, interest rate risks and commodity price risks.

The company enters into foreign exchange forward contracts, options and swaps to hedge against the effect of exchange rate fluctuations on cash flows denominated in foreign currencies and certain inter-company financing transactions. The company manages interest rate risks using a mix of fixed and floating rate debt. To help manage borrowing costs, the company may enter into interest rate swaps. Under these arrangements, the company agrees to exchange, at specified intervals, the difference between fixed and floating interest amounts calculated by reference to an agreed-upon notional principal amount. The company manages commodity price risks through negotiated supply contracts, price protection swaps and forward physical contracts.

FINANCIAL STATEMENT ANALYSIS CASE

UNION PLANTERS

- (a) While banks are primarily in the business of lending money, they also need to balance their asset portfolio by investing in other assets. For example, a bank may have excess cash that it has not yet loaned, which it wants to invest in very short-term liquid assets. Or it may believe that it can earn a higher rate of interest by buying long-term bonds than it can currently earn by making new loans. Or it may purchase investments for short-term speculation because it believes these investments will appreciate in value.
- (b) Trading securities are shown on the balance sheet at their current fair value, and any unrealized gains and losses resulting from reporting them at their fair value are reported as part of income. Available-for-sale securities are reported on the balance sheet at their fair value, and any unrealized gains and losses resulting from reporting them at their fair values are reported as other comprehensive income and as a separate component of stockholders' equity until realized. Held-to-maturity securities are reported at their amortized cost; that is, they are not reported at fair value. Note that Union Planters has no held-to-maturity securities.
- (c) Securities are reported in three different categories because these three different categories reflect the likelihood that any unrealized gains and losses will eventually be realized by the company. That is, trading securities are held for a short period; thus, if the bank has an unrealized gain on its trading security portfolio, it is likely that these securities will be sold soon and the gain will be realized. On the other hand, held-to-maturity securities are not going to be sold for a long time; thus, unrealized gains on these securities may never be realized. If securities were all grouped into a single category, the investor would not be aware of these differences in the probability of realization.
- (d) The answer to this involves selling your "winner" stocks in your available-for-sale portfolio at year-end. Union Planters could have increased reported net income by \$108 million (clearly, a material amount when total reported income was \$224 million). Management chose not to sell these securities because at the time it must have felt that either the securities had additional room for price appreciation, or it didn't want to pay the additional taxes that would be associated with a sale at a gain, or it wanted to hold the securities because they were needed to provide the proper asset balance in its management of its total asset portfolio, or it would prefer to report the gain in the following year.

COMPARATIVE ANALYSIS CASE

THE COCA-COLA COMPANY and PEPSICO, INC.

(a)	Coca-Cola	PepsiCo
(1) Cash used in investing activities	\$(1,188)	\$(2,637)
(2) Cash used for acquisitions and investments	\$(651)	\$(432)
(3) Total investments in unconsolidated affiliates at 12-31-01	\$ 8,214	\$ 2,871

(4) Coca-Cola's cash used for acquisitions and investments represented 54.8% ($\$651 \div \$1,188$) of its cash used for investing activities while PepsiCo's cash used for acquisitions of investments equaled 16.4% ($\$432 \div \$2,637$) of its cash used for investing activities. Coca-Cola's total investments were approximately 2.9 times as large as PepsiCo's and represented 36.6% ($\$8,214 \div \$22,417$) of its total assets while PepsiCo's investments equaled only 13.2% ($\$2,871 \div \$21,695$) of its total assets. Based on the preceding data, it can be concluded that investments are substantially more important to Coca-Cola than to PepsiCo.

(b) (1) Coca-Cola reported the following equity investments on its December 31, 2001 balance sheet:

Investments and Other Assets

Equity method investments	(in millions)
Coca-Cola Enterprises Inc.	\$ 788
Coca-Cola Amatil Limited	432
Coca-Cola HBC S.A.	791
Other, principally bottling companies	3,117

(2) Coca-Cola reported "cost method investments, principally bottling companies" in the amount of \$294 million in its December 31, 2001 balance sheet.

(c) At December 31, 2001, Coca-Cola reported in its note 8 on Financial Instruments the following:

(1) "The Company had no trading securities."

COMPARATIVE ANALYSIS CASE (Continued)

(2) and (3) December 31, 2001 (in millions)	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Available-for- sale securities	\$283	\$43	\$(117)	\$209
Held-to-maturity securities	\$986	—	—	\$986

RESEARCH CASE

- (a) One question raised by analysts relates to whether Bank One might be forced to change the way it accounts for certain of these so-called securitizations, related to its credit-card business. Under Bank One's accounting, certain retained portions of its receivables are classified as an investment, rather than a loan. As a result, the company does not have to set up an allowance for Bad Debts for these receivables which could be as low as \$200 million and as high as \$900 million.
- (b) Available-for-sale securities are not classified as held to maturity or trading securities. As a result, they do not have a definite maturity date and they are not bought and held primarily for sale in the near term to generate income on short-term price fluctuations. Given that Bank One has decided to keep these receivables in its books, the better answer would seem to be to account for these as receivables, not investments even though they have been securitized.
- (c) Available-for-sale investments are reported at fair value. The unrealized gains and losses related to changes in the fair value of available-for-sale securities are recorded in an unrealized holding gain or loss account. This account is reported as other comprehensive income as a separate component of stockholders' equity until realized.
- (d) Materiality relates to an item's impact on a firm's overall financial operations. Companies and their auditors for the most part have adopted the general rule of thumb that anything under 5% of net income is considered not material. The SEC has indicated that it is acceptable to use this percentage for an initial amount of materiality but other factors must be considered. For example, companies can no longer fail to record items in order to meet consensus analysts' earnings numbers, preserve a positive earnings trend, convert a loss to a profit or vice versa, increase management compensation, or hide an illegal transaction like a bribe.

In other words, both quantitative and qualitative factors must be considered in determining whether an item is material. From our perspective \$200 million added to the reserve is material as it would

RESEARCH CASE (Continued)

affect earnings per share by over \$0.11 $\left(\frac{\$200}{\$900} \times \$0.50 \right)$ per share.

Although this is less than 5%, it seems the best policy here is to assume it is material.

PROFESSIONAL SIMULATION

Journal Entries

(a) Available-for-Sale Securities	187,400*	
Interest Revenue (\$50,000 X .12 X 4/12)	2,000	
Investments		189,400z0

*(\$37,400 + \$100,000 + \$50,000)

(b) December 31, 2003

Interest Receivable	7,750	
Interest Revenue		7,750**

**Accrued interest: \$50,000 X .12 X 10/12 =	\$5,000	
Accrued interest: \$100,000 X .11 X 3/12 =	2,750	
	<u>\$7,750</u>	

Resources

	A	B	C	D	E	F	G	H	I	J	
1	Available-for-Sale Portfolio										
2	December 31, 2003										
3											
4	Securities		Cost		Fair Value		Unrealized Gain (Loss)				
5	Blossom company stock		\$37,400		\$33,800		(\$3,600)				
6	U.S. government bonds		100,000		124,700		24,700				
7	Buttercup Company bonds		50,000		58,600		8,600				
8	Total		\$187,400		\$217,100		29,700				
9											
10	Previous securities fair adjustment balance						0				
11	Securities fair value adjustment-Dr.						\$29,700				
12											
13	Securities Fair Value Adjustment (Available For Sale)							29,700			
14	Unrealized Holding Gain or Loss-Equity								29,700		
15											
16											

The following function is inserted in the cells in this column: =E2-C2

The following function is inserted into this cell: =E9-C9 or =sum(G6:G8)

PROFESSIONAL SIMULATION (Continued)

Explanation

If Blossom owns 30%, it will use the equity method to account for the investment. As a result, this investment would not be reported at fair value and there would be no unrealized holding gains or losses. Under the equity method, the investment carrying amount is periodically increased (decreased) by the investor's proportionate share of the earnings (losses) of the investor and decreased by all dividends received by the investor from the investee.

CHAPTER 18

Revenue Recognition

ASSIGNMENT CLASSIFICATION TABLE

Topics	Questions	Brief			Cases
		Exercises	Exercises	Problems	
1. Realization and recognition; sales transactions; high rates of return.	1, 2, 3, 4, 5, 6, 22	1	1, 2, 3	1	1, 2, 3, 4, 5, 7, 8, 9
2. Long-term contracts.	7, 8, 9, 10, 11, 12	2, 3, 4, 5, 6	4, 5, 6, 7, 8, 9, 10	1, 2, 3, 4, 5, 6, 7, 14, 16, 17	1, 6
3. Installment sales.	13, 14, 15, 16, 17, 18, 19, 20, 21	7, 8, 9	11, 12, 13, 14, 15	1, 8, 9, 10, 11, 12, 15	1
4. Repossessions on installment sales.		8	13, 18, 19	10, 11, 12, 13, 15	
5. Cost recovery method; deposit method.	13, 23, 24	10	15, 16, 17, 20		8, 9
*6. Franchising.	25, 26, 27, 28	11	21, 22		10
*7. Consignments.	29	12	23		

*This material is dealt with in an Appendix to the chapter.

ASSIGNMENT CHARACTERISTICS TABLE

Item	Description	Level of Difficulty	Time (minutes)
E18-1	Revenue recognition on book sales with high returns.	Moderate	15-20
E18-2	Sales recorded both gross and net.	Simple	15-20
E18-3	Revenue recognition on marina sales with discounts.	Moderate	10-15
E18-4	Analysis of percentage-of-completion financial statements.	Moderate	20-25
E18-5	Gross profit on uncompleted contract.	Simple	10-15
E18-6	Recognition of profit, percentage-of-completion.	Moderate	10-12
E18-7	Recognition of revenue on long-term contract and entries.	Moderate	25-30
E18-8	Recognition of profit and balance sheet amounts for long-term contracts.	Simple	15-20
E18-9	Long-term contract reporting.	Simple	15-25
E18-10	Analysis of installment sales accounts.	Moderate	15-25
E18-11	Gross profit calculations and repossessed merchandise.	Moderate	15-20
E18-12	Interest revenue from installment sale.	Simple	15-20
E18-13	Installment method and cost recovery method.	Simple	15-20
E18-14	Cost recovery method.	Simple	10-15
E18-15	Installment sales—default and repossession.	Simple	10-15
E18-16	Installment sales—default and repossession.	Simple	15-20
E18-17	Cost recovery method.	Moderate	15-20
E18-18	Installment sales—default and repossession.	Simple	10-15
E18-19	Installment sales—default and repossession.	Simple	15-20
E18-20	Cost recovery method.	Simple	15-25
*E18-21	Franchise entries.	Simple	14-18
*E18-22	Franchise fee, initial down payment.	Simple	12-16
*E18-23	Consignment computations.	Simple	15-20
P18-1	Comprehensive three-part revenue recognition.	Moderate	30-45
P18-2	Recognition of profit on long-term contract.	Simple	20-25
P18-3	Recognition of profit and entries, percentage-of-completion.	Moderate	25-35
P18-4	Recognition of profit and balance sheet presentation, percentage-of-completion.	Moderate	20-30
P18-5	Long-term contracts, three profitable and two losses.	Moderate	25-30
P18-6	Long-term contract with interim loss.	Moderate	20-25
P18-7	Long-term contract with an overall loss.	Moderate	20-25
P18-8	Installment sales computations and entries.	Moderate	25-30
P18-9	Installment sales income statements.	Moderate	30-35
P18-10	Installment sales computations and entries.	Complex	30-40
P18-11	Installment sales entries.	Simple	20-25
P18-12	Installment sales computations and entries.	Complex	40-50
P18-13	Installment repossession entries.	Moderate	20-25
P18-14	Installment sales computations and schedules.	Complex	50-60
P18-15	Completed-contract method.	Moderate	20-30

ASSIGNMENT CHARACTERISTICS TABLE (Continued)

Item	Description	Level of Difficulty	Time (minutes)
P18-16	Revenue recognition methods—comparison.	Complex	40-50
P18-17	Comprehensive problem—long-term contracts.	Complex	50-60
C18-1	Revenue recognition—law firm.	Moderate	20-30
C18-2	Recognition of revenue—theory.	Moderate	35-45
C18-3	Recognition of revenue—theory.	Moderate	25-30
C18-4	Recognition of revenue—trading stamps.	Moderate	30-35
C18-5	Recognition of revenue from subscriptions.	Complex	35-45
C18-6	Long-term contract—percentage-of-completion.	Moderate	20-25
C18-7	Revenue recognition—real estate development.	Moderate	30-40
C18-8	Revenues for a health club, ethics	Moderate	25-30
C18-9	Membership fees, ethics	Moderate	20-25
*C18-10	Franchise revenue.	Moderate	35-45

ANSWERS TO QUESTIONS

1. A series of highly publicized cases of companies recognizing revenue prematurely has caused the SEC to increase its enforcement actions in this area. In some of these cases, significant adjustments to previously issued financial statements were made. Some of these cases involved contingent sales where side agreements were in place or high rates of return occurred. In addition, in some cases, unfinished product was shipped to customers and counted as revenues or unauthorized product was shipped to customers and counted as revenues.
2. Revenue is conventionally recognized at the date of sale. For revenue to be recognized at the date of sale, (1) the amount of the revenue should be reasonably measurable—that is, the collectibility of the sales price is reasonably assured or the amount uncollectible can be estimated reasonably—and (2) the earnings process is complete or virtually complete (realized or realizable)—that is, the seller is not obligated to perform significant activities after the sale to earn the revenue.
3. Revenues are recognized generally as follows:
 - (a) Revenue from selling products—date of delivery to customers.
 - (b) Revenue from services rendered—when the services have been performed and are billable.
 - (c) Revenue from permitting others to use enterprise assets—as time passes or as the assets are used.
 - (d) Revenue (gains) from disposing of assets other than products—at the date of sale.
4. Types of sales transactions: (1) Cash sale. (2) Credit sale. (3) C.O.D. sale. (4) Will-call or layaway sale. (5) Sale in advance of delivery (long-term construction). (6) Branch sale. (7) Intercompany sale. (8) Franchise sale. (9) Installment sale. (10) Consignment sale.

The student should identify for each type of sale a form of business which typically engages in that type of sale. Many of these sales transactions are not mentioned in this chapter, so the student will probably not identify all these transactions.

5. The three alternatives available to a seller that is exposed to risks of ownership due to a return of the product are:
 - (1) Not recording the sale until all return privileges have expired.
 - (2) Recording the sale, but reducing sales by an estimate of future returns.
 - (3) Recording the sale and accounting for the returns as they occur in the future.
6. **FASB Statement No. 48** requires that such sales transactions not be recognized as current revenue unless **all** of the following six conditions are met:
 - (1) The seller's price to the buyer is substantially fixed or determinable at the date of sale.
 - (2) The buyer has paid the seller, or the buyer is obligated to pay the seller and the obligation is not contingent on resale of the product.
 - (3) The buyer's obligation to the seller would not be changed in the event of theft, or physical destruction, or damage of the product.
 - (4) The buyer acquiring the product has economic substance apart from that provided by the seller.
 - (5) The seller does not have significant obligation for future performance to directly bring about resale of the product by the buyer.
 - (6) The amount of future returns can be reasonably estimated.
7. The two basic methods of accounting for long-term construction contracts are: (1) the percentage-of-completion method and (2) the completed-contract method.

Questions Chapter 18 (Continued)

The percentage-of-completion method is preferable when estimates of costs to complete and extent of progress toward completion of long-term contracts are reasonably dependable. AcSEC recommends that the percentage-of-completion method be used in circumstances when **reasonably dependable estimates can be made and:**

- (1) The contract clearly specifies the enforceable rights regarding goods or services to be provided and received by the parties, the consideration to be exchanged, and the manner and terms of settlement.
- (2) The buyer can be expected to satisfy all obligations under the contract.
- (3) The contractor can be expected to perform the contractual obligation.

The completed-contract method is preferable when the lack of dependable estimates or inherent hazards cause forecasts to be doubtful.

$$8. \quad \frac{\text{Cost Incurred}}{\text{Total Estimated Cost}} \times \text{Total Revenue} = \text{Revenue Recognized}$$

$$\frac{\$9 \text{ million}}{\$50 \text{ million}} \times \$60,000,000 = \underline{\$10,800,000}$$

$$\text{Revenue Recognized} - \text{Actual Cost Incurred} = \text{Gross Profit Recognized}$$
$$\$10,800,000 - \$9,000,000 = \underline{\$1,800,000}$$

9. Under the percentage-of-completion method, income is reported to reflect more accurately the production effort. Income is recognized periodically on the basis of the percentage of the job completed rather than only when the entire job is completed. The principal disadvantage of the completed-contract method is that it may lead to distortion of earnings because no attempt is made to reflect current performance when the period of the contract extends into more than one accounting period.
10. The methods used to determine the extent of progress toward completion are the cost-to-cost method, the efforts-expended method, and the units-of-work-performed method. Costs incurred and labor hours worked are examples of **input measures**, while tons produced, stories of a building completed, and miles of highway completed are examples of **output measures**.
11. The two types of losses that can become evident in accounting for long-term contracts are:
 - (1) A current period loss involved in a contract that, upon completion, is expected to produce a profit.
 - (2) A loss related to an unprofitable contract.

The first type of loss is actually an adjustment in the current period of gross profit recognized on the contract in prior periods. It arises when, during construction, there is a significant increase in the estimated total contract costs but the increase does not eliminate all profit on the contract. Under the percentage-of-completion method, the estimated cost increase necessitates a current period adjustment of previously recognized gross profit; the adjustment results in recording a current period loss. No adjustment is necessary under the completed-contract method because gross profit is only recognized upon completion of the contract.

Cost estimates at the end of the current period may indicate that a loss will result upon completion of the entire contract. Under both methods, the entire loss must be recognized in the current period.

Questions Chapter 18 (Continued)

12. The difference between the Construction in Process and the Billings on Construction in Process accounts is reported in the balance sheet as a current asset if a debit and as a current liability if a credit. When the balance in Construction in Process exceeds the billings, this excess is reported as a current asset, "Costs and Recognized Profit in Excess of Billings." When the billings exceed the Construction in Process balance, the excess is reported as a current liability, "Billings in Excess of Costs and Recognized Profit."
13. Under the installment method, income recognition is deferred until the period of cash collection. At the end of each year, the appropriate gross profit rate is applied to the cash collections from each year's sales to determine the realized gross profit. Under the cost recovery method, no income is recognized until cash payments by the buyer exceed the seller's cost of the inventory sold. After all costs have been recovered, all additional cash collections are included in income.
14. The two methods generally employed to account for cash received when cash collection of the sale price is not reasonably assured are: (1) the cost recovery method and (2) the installment method.

The **cost recovery method** is used when the seller has performed on the contract, but cash collection is highly uncertain. Equal amounts of revenue and expense are recognized as collections are made until all costs have been recovered; thereafter, any cash received is included in income.

The **installment method** is used when there is no reasonable basis for estimating the degree of collectibility. Revenue is recognized only as cash is collected. Unlike the cost recovery method, a percentage of each cash collection is recorded as realized income.

15. The deposit method postpones recognizing a sale by treating the cash received from a buyer as a deposit. The deposit method is applied when the seller receives cash but has not performed under the contract and has no claim against the purchaser.
16. An installment sale is a special type of credit arrangement which provides for payment in periodic installments over a predetermined period of time and results from the sale of real estate, merchandise, or other personal property. In the ordinary credit sale, the collection interval is short (30-90 days) and title passes unconditionally to the buyer concurrently with the completion of the sale (delivery). In contrast, in an installment sale the cash down payment at the date of sale is followed by payments over a longer period of time (six months to several years), and in many states the transfer of title remains conditional until the debt is fully discharged.
17. Under the installment method of accounting, emphasis is placed on collection rather than sale. Because of the unique characteristics of installment sales, particularly the longer collection period and higher risk of loss through bad debts, gross profit is considered to be realized in proportion to the collections on the installment accounts. Thus, under the installment sales method, each collection on an installment account is regarded as a partial recovery of cost and a partial realization of gross profit (margin) in the same proportion that these two elements are present in the original selling price. Under the installment sales method, accounts receivable, sales, and cost of sales are accounted for separately for regular and installment sales. Installment receivables are identified by year of sale so that the gross profit can be recognized in each period in proportion to the original year of sales' gross profit rate applied to current collections on installment accounts receivable.
18. In the application of the installment method, most companies record operating expenses without regard to the fact that some portion of the year's gross profit is to be deferred revenue. This is often justified on the basis that: (1) these expenses do not follow sales as closely as does the cost of goods sold, and (2) accurate apportionment among periods would be so difficult as not to be justified by the benefits gained.

Questions Chapter 18 (Continued)

19.	Year	Cash Collected	X	*Gross Profit Percentage	=	Gross Profit Recognized
	2003	\$ 80,000		38%		\$ 30,400
	2004	320,000		38%		121,600
	2005	<u>100,000</u>		38%		<u>38,000</u>
		<u>\$500,000</u>				<u>\$190,000</u>

*[(\$500,000 – \$310,000) ÷ \$500,000]

20. When interest is involved in installment sales, it should be separately accounted for as interest revenue distinct from the gross profit recognized on the installment sales collections during the period. The amount of interest recognized each period is dependent upon the installment payment schedule.
21. With respect to the income statement, the degree of detail to be reported frequently will vary, depending upon the magnitude of installment sales revenues in relation to total sales. If installment sales are relatively insignificant in amount, they may be merged with regular sales with no separate designation. In this case the realized gross profit on installment sales amount normally is reported on the income statement as a separate item immediately below gross profit.

Alternatively, should installment sales represent a material amount of the total revenue of the business enterprise, additional detail may be required for a full and informative disclosure. In such cases it might be desirable to report on the income statement three columns as follows: (1) Total, (2) Regular Sales, and (3) Installment Sales. Obviously, many variations are possible and should be used to meet the necessities of information and full disclosure.

22. (a) Income (gross profit) on certain installment sales may be recognized on a basis of:

$$\frac{\text{Gross Profit}}{\text{Selling Price}} \times \text{Collections.}$$

In some cases where collection is uncertain, the cost recovery method might be employed.

- (b) The income on sales for future delivery is not recognized until title has passed to the buyer.
(c) When the consignee returns an "account sales" reporting the sale of the merchandise.
(d) Under a percentage of completion method:

$$\left(\frac{\text{Cost to Date}}{\text{Estimated Total Cost}} \times \text{Estimated Gross Profit} \right),$$

or when the contract is completed.

- (e) During the periods in which the publications are issued.

23. Under the cost recovery method, revenue is recognized (along with the relevant cost of goods sold) in the period of the sale. However, the gross profit is deferred and is not recognized in the income statement until cash payments received from the buyer exceed the cost of the merchandise sold.

In those periods in which the cash payments exceed the costs, the excess receipts (representing gross profits deferred) are reported as a separate item of revenue.

Questions Chapter 18 (Continued)

24. Under the deposit method, revenue is not recognized. The deposit method treats cash advances and other payments received as refundable deposits. The sales transaction is not considered complete and recognizable. Only after sufficient risks and rewards of ownership have been transferred and the sale is considered complete is one of the other revenue recognition methods discussed in the chapter applied to the sale transaction.

The major difference is that in the installment and cost recovery methods, it is assumed that the seller has performed on the contract but cash collection is highly uncertain. Under the deposit method, the seller has not performed and no legitimate claim exists.

- *25. It is improper to recognize the entire franchise fee as revenue at the date of sale when many of the services of the franchisor are yet to be performed and/or uncertainty exists regarding collection of the entire fee.
- *26. In a franchise sale, the franchisor may record initial franchise fees as revenue only when the franchisor makes "substantial performance" of the services it is obligated to perform. Substantial performance occurs when the franchisor has no remaining obligation to refund any cash received or excuse any nonpayment of a note and has performed all the initial services required under the contract.
- *27. Continuing franchise fees should be reported as revenue when they are earned and receivable from the franchisee, unless a portion of them have been designated for a particular purpose. In that case, the designated amount should be recorded as revenue, with the costs charged to an expense account. Continuing product sales would be accounted for in the same manner as would any other product sales.
- *28. (a) If it is likely that the franchisor will exercise an option to purchase the franchised outlet, the initial franchise fee should not be recorded as a revenue but as a deferred credit. When the option is exercised, the deferred amount would reduce the franchisor's investment in the outlet.
- (b) When the franchise agreement allows the franchisee to purchase equipment and supplies at bargain prices from the franchisor, a portion of the initial franchise fee should be deferred. The deferred portion would be accounted for as an adjustment of the selling price when the franchisee subsequently purchases the equipment and supplies.
- *29. A sale on consignment is the shipment of merchandise from a manufacturer (or wholesaler) to a dealer (or retailer) with title to the goods and the risk of sale being retained by the manufacturer who becomes the consignor. The consignee (dealer) is expected to exercise due diligence in caring for the merchandise and the dealer has full right to return the merchandise. The consignee receives a commission upon the sale and remits the balance of the cash collected to the consignor.

The consignor recognizes a sale and the related revenue upon notification of sale from the consignee and receipt of the cash. The consigned goods are carried in the consignor's inventory, not the consignee's, until sold.

SOLUTIONS TO BRIEF EXERCISES

BRIEF EXERCISE 18-1

(a) Sales Returns and Allowances	78,000	
Accounts Receivable		78,000
(b) Sales Returns and Allowances	42,000	
Allowance for Estimated Sales Returns and Allowances.....		42,000
[(15% X \$800,000) – \$78,000]		

BRIEF EXERCISE 18-2

Construction in Process.....	1,715,000	
Materials, Cash, Payables, etc.		1,715,000
Accounts Receivable	1,200,000	
Billings on Construction in Process		1,200,000
Cash.....	960,000	
Accounts Receivable		960,000
Construction in Process.....	735,000	
Construction Expenses	1,715,000	
Revenue from Long-term Contract.....		2,450,000
[($\$1,715,000 \div \$4,900,000$) X $\$2,100,000$ = \$735,000]		

BRIEF EXERCISE 18-3

Current Assets		
Accounts Receivable		\$ 240,000
Inventories		
Construction in Process	\$2,450,000	
Less: Billings	<u>1,200,000</u>	
Costs and recognized profit in excess of billings		1,250,000

BRIEF EXERCISE 18-4

Construction in Process.....	1,715,000	
Materials, Cash, Payables, etc.....		1,715,000
Accounts Receivable.....	1,200,000	
Billings on Construction in Process.....		1,200,000
Cash.....	960,000	
Accounts Receivable.....		960,000

BRIEF EXERCISE 18-5

Current Assets		
Accounts Receivable		\$240,000
Inventories		
Construction in Process	\$1,715,000	
Less: Billings	<u>1,200,000</u>	
Unbilled contract costs		515,000

BRIEF EXERCISE 18-6

(a) Construction Expenses.....	288,000	
Construction in Process (Loss).....		30,000
Revenue from Long-term Contracts.....		258,000
(b) Loss from Long-term Contracts.....	30,000	
Construction in Process (Loss).....		30,000

BRIEF EXERCISE 18-7

Installment Accounts Receivable, 2005.....	150,000	
Installment Sales.....		150,000
Cash.....	54,000	
Installment Accounts Receivable, 2005.....		54,000
Cost of Installment Sales.....	105,000	
Inventory.....		105,000

BRIEF EXERCISE 18-7 (Continued)

Installment Sales	150,000	
Cost of Installment Sales.....		105,000
Deferred Gross Profit, 2005.....		45,000
Deferred Gross Profit, 2005.....	16,200	
Realized Gross Profit on Installment Sales		16,200
(30% X \$54,000 = \$16,200)		

BRIEF EXERCISE 18-8

Repossessed Merchandise	275	
Loss on Repossession	61	
Deferred Gross Profit (560 X 40%).....	224	
Installment Accounts Receivable		560

BRIEF EXERCISE 18-9

Current Assets		
Installment Accounts Collectible in 2006		\$ 65,000
Installment Accounts Collectible in 2007		<u>110,000</u>
		<u>\$175,000</u>
Current Liabilities		
Deferred Gross Profit		\$ 64,100

BRIEF EXERCISE 18-10

2004	\$0
2005	\$1,000 (\$15,000 – \$14,000)
2006	\$5,000

***BRIEF EXERCISE 18-11**

Cash.....	25,000	
Notes Receivable.....	50,000	
Discount on Notes Receivable		10,377
Unearned Franchise Fees.....		64,623

***BRIEF EXERCISE 18-12**

Cash.....	19,570	
Advertising Expense.....	500	
Commission Expense.....	2,230	
 Revenue from Consignment Sales.....		22,300

SOLUTIONS TO EXERCISES

EXERCISE 18-1 (15-20 minutes)

- (a) Huish could recognize revenue at the point of sale based upon the time of shipment because the books are sold f.o.b. shipping point. Because of the return policy one might argue in favor of the cash collection basis. Because the returns can be estimated, one could argue for shipping point less estimated returns.
- (b) Based on the available information and lack of any information indicating that any of the criteria in FASB Statement No. 48 were not met, the correct treatment is to report revenue at the time of shipment as the gross amount less the 12% normal return factor. This is supported by the legal test of transfer of title and the criteria in FASB No. 48. One could be very conservative and use the 30% maximum return allowance.

(c) July Sale Entry.

Accounts Receivable	16,000,000	
Allowance for Returns		1,920,000
(\$16,000,000 X 12%)		
Sales Revenue—Texts		14,080,000

(d) October Collection.

Cash	14,000,000	
Sales Revenue—Texts*	80,000	
Allowance for Returns	1,920,000	
Accounts Receivable		16,000,000

*A debit to either Sales Revenue—Texts or Sales Returns could be made here.

EXERCISE 18-2 (15-20 minutes)

(a)	1.	6/3	Accounts Receivable—Kim Rhode	5,000	
			Sales		5,000

EXERCISE 18-2 (Continued)

	6/5	Sales Returns and Allowances.....	400	
		Accounts Receivable—Kim Rhode		400
	6/7	Transportation-Out	24	
		Cash.....		24
	6/12	Cash	4,508	
		Sales Discounts (2% X \$4,600)	92	
		Accounts Receivable—Kim Rhode		4,600
2.	6/3	Accounts Receivable—Kim Rhode	4,900	
		Sales [\$5,000 – (2% X 5,000)]		4,900
	6/5	Sales Returns and Allowances.....	392	
		Accounts Receivable—Kim Rhode		392
		[\$400 – (2% x \$400)]		
	6/7	Transportation-Out	24	
		Cash.....		24
	6/12	Cash	4,508	
		Accounts Receivable—Kim Rhode		4,508
(b)	8/5	Cash	4,600	
		Accounts Receivable—Kim Rhode		4,508
		Sales Discounts Forfeited		92
		(2% X \$4,600)		

EXERCISE 18-3 (10-15 minutes)

(a)	Cash (2004 slips) (300 X \$900)	270,000	
	Dock Rent Revenue.....		270,000
	Cash (2005 slips) [200 X \$900 X (1.00 – .05)]	171,000	
	Unearned Revenue (current)		171,000
	Cash (2006 slips) [60 X \$900 X (1.00 – .25)]	40,500	
	Unearned Revenue (noncurrent)		40,500

EXERCISE 18-3 (Continued)

- (b) The marina operator should recognize that advance rentals generated \$211,500 (\$171,000 + \$40,500) of cash in exchange for the marina's promise to deliver future services. In effect, this has reduced future cash flow by accelerating payments from boat owners. Also, the price of rental services has effectively been reduced. The current cash bonanza does not reflect current earned income. The future costs of operation must be covered, in part, from this accelerated cash inflow. On a present value basis, the granting of these discounts seems ill-advised unless interest rates were to skyrocket so that the interest earned would offset the discounts provided.

EXERCISE 18-4 (20-25 minutes)

- (a) Gross profit recognized in:

	2004		2005		2006	
Contract price	\$1,500,000		\$1,500,000		\$1,500,000	
Costs:						
Costs to date	\$400,000		\$935,000		\$1,070,000	
Estimated costs to complete	<u>600,000</u>	<u>1,000,000</u>	<u>165,000</u>	<u>1,100,000</u>	<u>0</u>	<u>1,070,000</u>
Total estimated profit	500,000		400,000		430,000	
Percentage completed to date	<u>40%*</u>		<u>85%**</u>		<u>100%</u>	
Total gross profit recognized	200,000		340,000		430,000	
Less: Gross profit recognized in previous years	<u>0</u>		<u>200,000</u>		<u>340,000</u>	
Gross profit recognized in current year	<u>\$ 200,000</u>		<u>\$ 140,000</u>		<u>\$ 90,000</u>	

*\$400,000 ÷ \$1,000,000

**\$935,000 ÷ \$1,100,000

EXERCISE 18-4 (Continued)

(b) Construction in Process.....	535,000	
(\$935,000 – \$400,000)		
Materials, Cash, Payables, etc.....		535,000
Accounts Receivable (\$900,000 – \$300,000)	600,000	
Billings and Construction in Process		600,000
Cash (\$810,000 – \$270,000).....	540,000	
Accounts Receivable		540,000
Construction Expenses	535,000	
Construction in Process.....		140,000
Revenue from Long-term Contracts.....		675,000*

***\$1,500,000 X (85% – 40%)**

(c) Gross profit recognized in:

	<u>2004</u>	<u>2005</u>	<u>2006</u>
Gross profit	\$ –0–	\$ –0–	\$430,000*

***\$1,500,000 – \$1,070,000**

EXERCISE 18-5 (10-15 minutes)

(a) Contract billings to date	\$61,500
Less accounts receivable 12/31/04	<u>21,500</u>
Portion of contract billings collected	<u>\$40,000</u>

(b) $\frac{\$18,200}{\$65,000} = 28\%$

(The ratio of gross profit to revenue recognized in 2004.)

$\$1,000,000 \times .28 = \$280,000$

(The initial estimated total gross profit before tax on the contract.)

EXERCISE 18-6 (10-12 minutes)

BRAD BRIDGEWATER, INC.
Computation of Gross Profit to Be
Recognized on Uncompleted Contract
Year Ended December 31, 2004

Total contract price		
Estimated contract cost at completion (\$700,000 + \$1,300,000)		\$2,000,000
Fixed fee		<u>450,000</u>
Total		2,450,000
Total estimated cost		<u>2,000,000</u>
Gross profit		450,000
Percentage of completion (\$700,000 ÷ \$2,000,000)		<u>35%</u>
Gross profit to be recognized (\$450,000 X 35%)		<u>\$ 157,500</u>

EXERCISE 18-7 (25-30 minutes)

(a) (1) Gross profit recognized in 2004:		
Contract price		\$1,000,000
Costs:		
Costs to date	\$280,000	
Estimated additional costs	<u>520,000</u>	<u>800,000</u>
Total estimated profit		200,000
Percentage completion to date (\$280,000/\$800,000)		<u>35%</u>
Gross profit recognized in 2004		<u>\$ 70,000</u>
Gross profit recognized in 2005:		
Contract price		\$1,000,000
Costs:		
Costs to date	\$600,000	
Estimated additional costs	<u>200,000</u>	<u>800,000</u>
Total estimated profit		200,000
Percentage completion to date (\$600,000/\$800,000)		<u>75%</u>
Total gross profit recognized		150,000
Less: Gross profit recognized in 2004		<u>70,000</u>
Gross profit recognized in 2005		<u>\$ 80,000</u>

EXERCISE 18-7 (Continued)

(2) Construction in Process.....	320,000	
(\$600,000 – \$280,000)		
Materials, Cash, Payables, etc.		320,000
Accounts Receivable	250,000	
(\$400,000 – \$150,000)		
Billings on Construction in Process.....		250,000
Cash (\$320,000 – \$120,000)	200,000	
Accounts Receivable.....		200,000
Construction in Process.....	80,000	
Construction Expense	320,000	
Revenues from Long-term Contract.....		400,000*

*\$1,000,000 X [(\$600,000 – \$280,000) ÷ \$800,000]

(b) Income Statement (2005)—	
Gross profit on long-term construction contract	\$ 80,000
Balance Sheet (12/31/05)—	
Current assets:	
Receivables—construction in process	\$ 80,000*
Inventories—construction in process totaling	
\$750,000** less billings of \$400,000	\$350,000

*\$80,000 = \$400,000 – \$320,000

**Total cost to date	\$600,000
2004 Gross profit	70,000
2005 Gross profit	<u>80,000</u>
	<u>\$750,000</u>

EXERCISE 18-8 (15-20 minutes)

(a) 2004— $\frac{\$480,000}{\$1,600,000} \times \$2,200,000 = \underline{\underline{\$660,000}}$

2005— \$2,200,000 (contract price) minus \$660,000 (revenue recognized in 2004) = \$1,540,000 (revenue recognized in 2005).

EXERCISE 18-8 (Continued)

- (b) All \$2,200,000 of the contract price is recognized as revenue in 2005.
- (c) Using the percentage-of-completion method, the following entries would be made:

Construction in Process	480,000	
Materials, Cash, Payables, etc.		480,000
Accounts Receivable	420,000	
Billings on Construction in Process.....		420,000
Cash	350,000	
Accounts Receivable.....		350,000
Construction in Process	180,000*	
Construction Expenses	480,000	
Revenue from Long-term Contracts		
[from (a)]		660,000

* $[\$2,200,000 - (\$480,000 + \$1,120,000)] \times (\$480,000 \div \$1,600,000)$

(Using the completed-contract method, all the same entries are made except for the last entry. No income is recognized until the contract is completed.)

EXERCISE 18-9 (15-25 minutes)

- (a) Computation of Gross Profit to Be Recognized under Completed-Contract Method.

No computation necessary. No gross profit to be recognized prior to completion of contract.

Computation of Billings on Uncompleted Contract in Excess of Related Costs under Completed-Contract Method.

Construction costs incurred during the year	\$1,185,800
Partial billings on contract (30% X \$6,300,000)	<u>(1,890,000)</u>
	<u>\$ (704,200)</u>

EXERCISE 18-9 (Continued)

(b) Computation of Gross Profit to Be Recognized under Percentage-of-Completion Method.

Total contract price	\$6,300,000
Total estimated cost (\$1,185,800 + \$4,204,200)	<u>5,390,000</u>
Estimated total gross profit from contract	910,000
Percentage-of-completion (\$1,185,800/\$5,390,000)	<u>22%</u>
Gross profit to be recognized during the year (\$910,000 X 22%)	<u>\$ 200,200</u>

Computation of Billings on Uncompleted Contract in Excess of Related Costs under Percentage-of-Completion Method.

Construction costs incurred during the year	\$1,185,800
Gross profit to be recognized during the year (above)	<u>200,200</u>
Total charged to construction-in-process	1,386,000
Partial billings on contract (30% X \$6,300,000)	<u>(1,890,000)</u>
	<u>\$ (504,000)</u>

EXERCISE 18-10 (15-25 minutes)

**DERRICK ADKINS CONSTRUCTION COMPANY
Partial Income Statement
Year Ended December 31, 2004**

Revenue from long-term contracts (Project 3)	\$500,000
Costs of construction (Project 3)	<u>330,000</u>
Gross profit	170,000
Provision for loss (Project 1)*	(30,000)
*Contract costs through 12/31/04	\$450,000
Estimated costs to complete	<u>140,000</u>
Total estimated costs	590,000
Total contract price	<u>560,000</u>
Loss recognized in 2004	<u>\$ (30,000)</u>

EXERCISE 18-10 (Continued)

DERRICK ADKINS CONSTRUCTION COMPANY
Partial Balance Sheet
December 31, 2004

Current assets:		
Accounts receivable		\$90,000
(\$1,080,000 – \$990,000)		
Inventories		
Construction in process	\$420,000*	
Less: Billings	360,000	
Unbilled contract costs (Project 1)		60,000
Current liabilities:		
Billings (\$220,000) in excess of contract costs (\$126,000) (Project 2)		94,000

*The loss of \$30,000 was subtracted from the construction in process account.

EXERCISE 18-11 (15-20 minutes)

(a) Computation of gross profit recognized:

	2004	2005
\$370,000 X 30%*	\$111,000	
\$350,000 X 30%*		\$105,000
\$475,000 X 32%**		152,000
	<u>\$111,000</u>	<u>\$257,000</u>

*(\$900,000 – \$630,000) ÷ \$900,000

**(\$1,000,000 – \$680,000) ÷ \$1,000,000

(b) Installment Accounts Receivable—2005.....	1,000,000	
Installment Sales		1,000,000
Cost of Installment Sales.....	680,000	
Inventory.....		680,000

EXERCISE 18-11 (Continued)

Cash.....	825,000	
Installment Accounts Receivable— 2004.....		350,000
Installment Accounts Receivable— 2005.....		475,000
Installment Sales.....	1,000,000	
Cost of Installment Sales.....		680,000
Deferred Gross Profit on Installment Sales—2005.....		320,000
Deferred Gross Profit on Installment Sales—2004	105,000	
Deferred Gross Profit on Installment Sales—2005	152,000	
Realized Gross Profit on Installment Sales		257,000
Realized Gross Profit on Installment Sales	257,000	
Income Summary.....		257,000

EXERCISE 18-12 (15-20 minutes)

(a) Deferred Gross Profit—2004	3,150*	
Deferred Gross Profit—2005	12,400**	
Deferred Gross Profit—2006	69,400***	
Realized Gross Profit		84,950
(To recognize gross profit on installment sales)		

*Adjustment for deferred gross profit—2004:	
Balance in deferred gross profit account prior to adjustment	\$7,000
Balance after adjustment (\$11,000 X 35%)	<u>3,850</u>
Adjustment	<u>\$3,150</u>

**Adjustment for deferred gross profit—2005:	
Balance in deferred gross profit account prior to adjustment	\$26,000
Balance after adjustment (\$40,000 X 34%)	<u>13,600</u>
Adjustment	<u>\$12,400</u>

EXERCISE 18-12 (Continued)

*****Adjustment for deferred gross profit—2006:**

Balance in deferred gross profit account prior to adjustment	\$95,000
Balance after adjustment (\$80,000 X 32%)	<u>25,600</u>
Adjustment	<u>\$69,400</u>

(b) Cash collected in 2003 on accounts receivable of 2004:
\$3,150/35% = \$9,000.

Cash collected in 2003 on accounts receivable of 2005:
\$12,400/34% = \$36,470.59.

Cash collected in 2003 on accounts receivable of 2006:
\$69,400/32% = \$216,875.

EXERCISE 18-13 (15-20 minutes)

Gross Profit Ratio—2004: $(\$750,000 - \$525,000) \div \$750,000 = \underline{30\%}$

Gross Profit Ratio—2005: $(\$840,000 - \$604,800) \div \$840,000 = \underline{28\%}$

(a) Balance, December 31, 2004:

<u>Deferred Gross Profit Account—2004 Installment Sales</u>	
Gross profit on installment sales—2004	\$225,000
(\$750,000 – \$525,000)	
Less: Gross profit realized in 2004 (\$310,000 X 30%)	<u>(93,000)</u>
Balance at 12/31/04	<u>\$132,000</u>

Balance, December 31, 2005:

<u>Deferred Gross Profit Account—2004 Installment Sales</u>	
Balance at 12/31/04	\$132,000
Less: Gross profit realized in 2005 on 2004 sales	
(\$300,000 X 30%)	<u>(90,000)</u>
Balance at 12/31/05	<u>\$ 42,000</u>

Deferred Gross Profit Account—2005 Installment Sales

Gross profit on installment sales—2005	\$235,200
(\$840,000 – \$604,800)	
Less: Gross profit realized in 2005 on 2005 sales	
(\$400,000 X 28%)	<u>(112,000)</u>
Balance at 12/31/05	<u>\$123,200</u>

EXERCISE 18-13 (Continued)

(b) Repossessed Merchandise	8,000	
Deferred Gross Profit (\$12,000 X 30%).....	3,600	
Loss on Repossession	400	
Installment Accounts Receivable		12,000
(To record the default and the repossession of the merchandise)		

EXERCISE 18-14 (10-15 minutes)

GAIL DEVERS CORPORATION
Income before Income Taxes on Installment Sale Contract
For the Year Ended December 31, 2004

Sales	\$676,000
Cost of sales	<u>500,000</u>
Gross profit	176,000
Interest revenue (Schedule 1)	<u>28,800</u>
Income before income taxes	<u><u>\$204,800</u></u>

Schedule 1
Computation of Interest Revenue on Installment Sale Contract

Cash selling price	\$676,000
Deduct payment made July 1, 2004	<u>100,000</u>
	576,000
Interest rate	X 10%
Annual interest	<u>\$ 57,600</u>
Interest July 1, 2004 to December 31, 2004 (\$57,600 X 1/2)	<u><u>\$ 28,800</u></u>

EXERCISE 18-15 (10-15 minutes)

(a) Realized gross profit recognized in 2005 under the installment method of accounting is \$87,375. When gross profit is expressed as a percentage of cost, it must be converted to percentage of sales to compute the realized gross profit under the installment method of accounting. Thus, 2004 and 2005 gross profits as a percentage of sales are 20% and 21.875% respectively.

EXERCISE 18-15 (Continued)

Sale Year	Gross Profit Percentage	2005 Collections	2002 Realized Profit
2004	$.25/(1.00 + .25) = 20\%$	\$240,000	\$48,000
2005	$.28/(1.00 + .28) = 21.875\%$	180,000	<u>39,375</u>
		TOTAL	<u>\$87,375</u>

(b) The balance of “Deferred Gross Profit” could be reported on the balance sheet for 2005:

- (1) As a current liability on the theory that it is related to Installment Accounts Receivables that are normally treated as current assets;
- (2) As a deferred credit between liabilities and stockholders’ equity. This treatment is criticized because there is no obligation to outsiders; or
- (3) As an adjustment or offset to the related Installment Accounts Receivable. This is because the deferred gross profit is a part of revenue from installment sales not yet realized. The related receivable will be overstated unless the deferred gross profit is deducted. On the other hand, the amount of deferred gross profit has no direct relationship with the estimated collectibility of the accounts receivable.

It is not a settled matter as to the proper classification of “deferred gross profit” on the balance sheet when the installment method of accounting is used to measure income.

(c) Gross profit as a percent of sales in 2004 is 20% (as computed in (a) above); gross profit therefore is \$96,000 ($\$480,000 \times .20$) and the cost of 2004 sales is \$384,000 ($\$480,000 - \$96,000$). Because the amounts collected in 2004 (\$140,000) and 2005 (\$240,000) do not exceed the total cost of \$384,000, no profit is recognized in 2004 or 2005 on 2004 sales. Also, no profit is recognized on 2005 sales since the collections of \$180,000 do not exceed the total cost of \$484,375.

EXERCISE 18-16 (15-20 minutes)

(a) Computation of gross profit realized—cost recovery method:

Year	Cash Received	Original Cost Recovered	Balance of Unrecovered Cost	Gross Profit Realized
Beginning balance	—	—	\$150,000	—
2004	\$100,000	\$100,000	50,000	\$0
2005	60,000	50,000	0	10,000
2006	40,000	0	0	40,000

(b) Computation of gross profit realized—installment method:

Gross profit rate: $(\$200,000 - \$150,000) \div \$200,000 = 25\%$

2004 Gross profit realized: $\$100,000 \times 25\% = \$25,000$
 2005 Gross profit realized: $\$60,000 \times 25\% = \$15,000$
 2006 Gross profit realized: $\$40,000 \times 25\% = \$10,000$

EXERCISE 18-17 (15-20 minutes)

Year	Cash (Dr.)	Deferred Interest Revenue (Cr.)	Installment Accounts Receivable (Cr.)	Installment Unpaid Balance	Uncovered Cost	Realized Gross Profit	Realized Interest Revenue
1/1/05	—	—	—	\$120,000	\$110,000	—	—
2005	\$ 52,557	\$18,000 ^a	\$34,557 ^b	85,443 ^c	57,443 ^d	—	—
2006	52,557	12,816	39,741	45,702	4,886	—	—
2007	<u>52,557</u>	<u>(30,816)*</u>	<u>45,702</u>	<u>—</u>	<u>—</u>	<u>\$10,000</u>	<u>\$37,671^e</u>
	<u>\$157,671</u>					<u>\$10,000</u>	<u>\$37,671</u>

^a $\$120,000 \times 15\% = \$18,000$.

^b $\$52,557 - \$18,000 = \$34,557$.

^c $\$120,000 - \$34,557 = \$85,443$.

^d $\$110,000 - \$52,557 = \$57,443$.

*This amount is used to transfer the Deferred Interest Revenue from 2005 (\$18,000) and 2006 (\$12,816) to Realized Interest Revenue in 2007.

^e 2007 interest revenue ($\$45,702 \times 15\%$)	\$ 6,855
2005 and 2006 interest revenue to be recognized ($\$18,000 + \$12,816$)	<u>30,816</u>
Realized interest revenue in 2007	<u>\$37,671</u>

EXERCISE 18-18 (10-15 minutes)

1. Repossessed Merchandise	800	
Deferred Gross Profit	378*	
Installment Accounts Receivable		1,080**
Gain on Repossession.....		98

*\$378 = 35% X \$1,080

**Selling price	\$1,800
Down payment (20%)	<u>(360)</u>
1,440	
Installment payments (4/16 X \$1,440)	<u>(360)</u>
Installment accounts receivable balance	<u>\$1,080</u>

2. Repossessed Merchandise	750	
Deferred Gross Profit	220*	
Installment Accounts Receivable		880**
Gain on Repossession.....		90

*($\$1,600 - \$1,200$)/ $\$1,600 = 25\%$ gross profit rate;
 $\$220 = 25\% \times \880

**Selling price	\$1,600
Down payment	<u>(240)</u>
	1,360
Monthly payments (\$80 X 6)	<u>480</u>
Installment accounts receivable balance	<u>\$ 880</u>

EXERCISE 18-19 (15-20 minutes)

Cash.....	400	
Installment Accounts Receivable		400
(To record the collection of cash on installment accounts receivable)		
Deferred Gross Profit (40% X \$400).....	160	
Realized Gross Profit		160
(To recognize gross profit on installment sale)		

EXERCISE 18-19 (Continued)

Repossessed Merchandise.....	590	
Deferred Gross Profit (40% X \$1,400)	560	
Loss on Repossession	250	
Installment Accounts Receivable		1,400
(To record default and repossession of merchandise)		
Repossessed Merchandise.....	60	
Cash.....		60
(To record cash spent on reconditioning of inventory)		

EXERCISE 18-20 (15-25 minutes)

**Installment Payment Schedule
Interest at 10%
Cost Recovery Method**

Date	Cash (Debit)	Deferred Interest Revenue (Credit)	Installment Accounts Receivable (Credit)	Installment Unpaid Balance	Uncovered Cost	Realized Gross Profit	Realized Interest Revenue
1/1/05	—	—	—	\$600,000	\$500,000	—	—
12/31/05	\$241,269	\$ 60,000	\$181,269	418,731	258,731	—	—
12/31/06	241,269	41,873	199,396	219,335	17,462	—	—
12/31/07	<u>241,269</u>	<u>(101,873)</u>	<u>219,335</u>	<u>0</u>	<u>0</u>	<u>\$100,000**</u>	<u>\$123,807*</u>
	<u>\$723,807</u>		<u>\$600,000</u>			<u>\$100,000</u>	<u>\$123,807</u>

*Consists of \$101,873 of deferred interest revenue from 2005 and 2006 and \$21,934 of interest for 2007.

**\$600,000 – \$500,000 = \$100,000 or [\$241,269 – (\$101,873 + \$21,934 + \$17,462)] = \$100,000.

***EXERCISE 18-21 (14-18 minutes)**

(a) Cash.....	40,000	
Notes Receivable.....	30,000	
Discount on Notes Receivable.....		5,132
[\$30,000 – (2.48685 X \$10,000)]		
Revenue from Franchise Fees		64,868
(b) Cash.....	40,000	
Unearned Franchise Fees.....		40,000

***EXERCISE 18-21 (Continued)**

(c) Cash.....	40,000	
Notes Receivable.....	30,000	
Discount on Notes Receivable		5,132
Revenue from Franchise Fees		40,000
Unearned Franchise Fees.....		24,868
(\$10,000 X 2.48685)		

(Calculations rounded)

***EXERCISE 18-22 (12-16 minutes)**

(a) Down payment made on 1/1/04	\$20,000.00
Present value of an ordinary annuity (\$6,000 X 3.69590)	<u>22,175.40</u>
Total revenue recorded by Short-Track and total acquisition cost recorded by Svetlana Masterkova	<u>\$42,175.40</u>

(b) Cash.....	20,000.00	
Notes Receivable.....	30,000.00	
Discount on Notes Receivable		7,824.60
Unearned Franchise Fees.....		\$42,175.40

- (c) 1. \$20,000 cash received from down payment. (\$22,175.40 is recorded as unearned revenue from franchise fees.)
 2. \$20,000 cash received from down payment.
 3. None. (\$20,000 is recorded as unearned revenue from franchise fees.)

***EXERCISE 18-23 (15-20 minutes)**

(a) Inventoriable costs:	
70 units shipped at cost of \$500 each	\$35,000
Freight	<u>840</u>
Total inventoriable cost	<u>\$35,840</u>
30 units on hand (30/70 X \$35,840)	<u>\$15,360</u>

***EXERCISE 18-23 (Continued)**

(b) Computation of Consignment Profit:

Consignment sales (40 X \$700)	\$28,000
Cost of units sold (40/70 X \$35,840)	(20,480)
Commission charged by consignee (6% X \$28,000)	(1,680)
Advertising cost	(200)
Installation costs	<u>(320)</u>
Profit on consignment sales	<u>\$ 5,320</u>

(c) Remittance of Consignee:

Consignment sales	\$28,000	
Less: Commissions	\$1,680	
Advertising	200	
Installation	<u>320</u>	<u>2,200</u>
Remittance from consignee		<u>\$25,800</u>

TIME AND PURPOSE OF PROBLEMS

Problem 18-1 (Time 30-45 minutes)

Purpose—the student defines and describes the point of sale, completion of production, percentage-of-completion, and installment sales methods of revenue recognition. Then the student computes revenue to be recognized in situations using a percentage-of-completion method, when the right of return exists, and using the point of sale method.

Problem 18-2 (Time 20-25 minutes)

Purpose—to provide the student with an understanding of both the percentage-of-completion and completed-contract methods of accounting for long-term construction contracts. The student is required to compute the estimated gross profit that would be recognized during each year of the construction period under each of the two methods.

Problem 18-3 (Time 25-35 minutes)

Purpose—to provide the student with an understanding of the percentage-of-completion method of accounting for long-term construction contracts. The student is required to compute the estimated gross profit during the three-year period using the percentage-of-completion method, and to prepare the necessary journal entries to record the events which occurred during the last year.

Problem 18-4 (Time 20-30 minutes)

Purpose—to provide the student with an understanding of both the accounting procedures involved under the percentage-of-completion method and the respective balance sheet presentation for long-term construction contracts. The student is required to compute the estimated gross profit realized during the construction periods, plus prepare a partial balance sheet showing the balances in the receivable and inventory accounts.

Problem 18-5 (Time 25-30 minutes)

Purpose—to provide the student with a multiple long-term project problem applying the percentage-of-completion method. The student is also required to prepare the income statement and balance sheet presentations for this uncompleted project.

Problem 18-6 (Time 20-25 minutes)

Purpose—to provide the student with a long-term construction contract problem that requires the recognition of a loss during an interim year on a contract that is profitable overall. This problem requires application of both the percentage-of-completion method and the completed-contract method to an interim loss situation.

Problem 18-7 (Time 20-25 minutes)

Purpose—to provide the student with a long-term construction contract problem that requires the recognition of a loss during an interim year on an unprofitable contract overall. This problem requires application of both the percentage-of-completion method and the completed-contract method to this unprofitable contract.

Problem 18-8 (Time 25-30 minutes)

Purpose—to provide the student with an understanding of the proper accounting under the installment sales method. The student is required to compute the realized gross profit for each of the years, plus prepare the necessary journal entries to record the transactions applying the installment method of accounting.

Problem 18-9 (Time 30-35 minutes)

Purpose—to provide the student with an understanding of the installment method of accounting for sales transactions. The student is required to determine the net income for each of three years, utilizing the installment sales method.

Time and Purpose of Problems (Continued)

Problem 18-10 (Time 30-40 minutes)

Purpose—to provide the student with an understanding of the applications of the installment method of accounting for sales transactions. The student is required to analyze the trial balance and accompanying information of a company, and to compute the rate of gross profit on the company's installment sales. The student is also asked to prepare both the closing entries under the installment method of accounting and an income statement for the year, including only the realized gross profit in the statement.

Problem 18-11 (Time 20-25 minutes)

Purpose—to provide the student with an understanding of the proper accounting on the installment sales basis. The student is required to prepare the respective journal entries to reflect the sales transactions, including the entry to record the gross profit realized during the year.

Problem 18-12 (Time 40-50 minutes)

Purpose—to provide the student with an understanding of the applications of the installment sales method of accounting. The student is required to analyze the company's trial balance and accompanying information, and to prepare the adjusting and closing entries for the year. The student is also asked to prepare an income statement for the year, including only the realized gross profit in the statement.

Problem 18-13 (Time 20-25 minutes)

Purpose—to provide the student with an understanding of the proper entries under the installment method of accounting. The student is required to prepare the necessary journal entries to reflect the respective sales transactions, including that of a merchandise repossession.

Problem 18-14 (Time 50-60 minutes)

Purpose—to provide the student with an understanding of the installment method of accounting for sales. The student is required to prepare schedules for the cost of goods sold on installments, the gross profit percentage on the sales, the gain or loss on repossessions, and the net income from installment sales.

Problem 18-15 (Time 20-30 minutes)

Purpose—to provide the student with a problem requiring the computation of "cost of uncompleted contract in excess of related billings" or "billings on uncompleted contract in excess of related costs" and "profit or loss." Each of these computations is required for each year of the three-year contract applying the completed-contract method.

Problem 18-16 (Time 40-50 minutes)

Purpose—to provide the student with an understanding of how to write a letter comparing the percentage-of-completion method to the completed-contract method.

Problem 18-17 (Time 50-60 minutes)

Purpose—to provide the student with an understanding of how to compute gross profit on five different contracts. In addition, partial balance sheet and income statement data must be prepared.

SOLUTIONS TO PROBLEMS

PROBLEM 18-1

- (a) 1. Point of sale method recognizes revenue when the earnings process is complete and an exchange transaction has taken place. This can be the date goods are delivered, when title passes, when services are rendered and billable, or as time passes (e.g., rent or royalty income). This method most closely follows the accrual accounting method and is in accordance with generally accepted accounting principles (GAAP).
2. The completion-of-production method recognizes revenue only when the project is complete and the contract is completed. This is used primarily with short-term contracts, or with long-term contracts when there is considerable difficulty in estimating the costs remaining to complete a project. The advantage of this method is that income is recognized on final results, not estimates. The disadvantage is that when the contract extends over more than one accounting period, current performance on the project is not recognized and earnings are distorted. It is acceptable according to GAAP only in the extraordinary circumstances when forecasting the amount of work completed to date is not possible.
3. The percentage-of-completion method of revenue recognition is used on long-term projects, usually construction. To apply it, the following conditions must exist:
- (i) A firm contract price with a high probability of collection.
 - (ii) A reasonably accurate estimate of costs (and, therefore, of gross profit).
 - (iii) A way to reasonably estimate the extent of progress to completion of the project.

Gross profit is recognized in proportion to the work completed. The progress toward contract completion is the revenue-generating event. Normally, progress is measured as the percentage of actual costs to date to estimated total costs. This percentage is applied to estimated gross profit to indicate the total profit which should be recognized to that date. That total less the

PROBLEM 18-1 (Continued)

income that was recognized in previous periods is the amount recognized in the current period. In the final period, the actual total profit is known and the difference between this amount and profit previously recognized is shown as profit of the period.

This method is in accordance with generally accepted accounting principles for long-term projects when estimates are dependable.

4. The installment sales method may be applicable when the sales price is received over an extended period of time. The installment method recognizes revenue as the cash is collected and is used when the collection of the sales price is not reasonably assured. This method is commonly used for tax purposes, but it is not in accordance with GAAP, except in certain situations, because it violates accrual basis accounting. The installment method can be used in special circumstances when collectibility is very unsure.

(b) Gina Construction

A change of cost estimates calls for a revision of revenue and profit to be recognized in the period in which the change was made (in this case, the first period).

Contract price		\$30,000,000
Costs		
Actual costs to 11/30/04	\$ 7,800,000	
Estimated costs to complete	<u>16,200,000</u>	
Total cost		<u>24,000,000</u>
Estimated profit		<u>\$ 6,000,000</u>
Percentage of contract completed ($\$7,800,000 \div \$24,000,000$)		<u>32.5%</u>
Revenue to be recognized in 2004 ($\$30,000,000 \times 32.5\%$)		<u>\$ 9,750,000</u>

PROBLEM 18-1 (Continued)

Gogean Publishing Division

Sales—fiscal 2004	\$8,000,000
Less: Sales returns and allowances (20%)	<u>1,600,000</u>
Net sales—revenue to be recognized in fiscal 2004	<u>\$6,400,000</u>

Although distributors can return up to 30 percent of sales, prior experience indicates that 20 percent of sales is the expected average amount of returns. The collection of 2003 sales has no impact on fiscal 2004 revenue. The 21 percent of returns on the initial \$5,500,000 of 2004 sales confirms that 20 percent of sales will provide a reasonable estimate.

Chorkina Securities Division

Revenue for fiscal 2004 = \$5,200,000.

The revenue is the amount of goods actually billed and shipped when revenue is recognized at point of sale (terms of F.O.B. factory). Orders for goods do not constitute sales. Down payments are not sales. The actual freight costs are expenses made by the seller that the buyer will reimburse at the time s/he pays for the goods.

Commissions and warranty returns are also selling expenses. Both of these expenses will be accrued and will appear in the operating expenses section of the income statement.

PROBLEM 18-2

(a)	2004	2005	2006
Contract price	<u>\$900,000</u>	<u>\$900,000</u>	<u>\$900,000</u>
Less estimated cost:			
Cost to date	270,000	420,000	600,000
Estimated cost to complete	<u>330,000</u>	<u>180,000</u>	<u>—</u>
Estimated total cost	<u>600,000</u>	<u>600,000</u>	<u>600,000</u>
Estimated total gross profit	<u>\$300,000</u>	<u>\$300,000</u>	<u>\$300,000</u>
Gross profit recognized in—			
2004:	$\frac{\$270,000}{\$600,000} \times \$300,000 =$	<u>\$135,000</u>	
2005:	$\frac{\$420,000}{\$600,000} \times \$300,000 =$	\$210,000	
	Less 2004 recognized gross profit	<u>135,000</u>	
	Gross profit in 2005	<u>\$ 75,000</u>	
2006:	Less 2004–2005 recognized gross profit		<u>210,000</u>
	Gross profit in 2006		<u>\$ 90,000</u>

(b) In 2004 and 2005, no gross profit would be recognized.

Total billings	\$900,000
Total cost	<u>600,000</u>
Gross profit recognized in 2006	<u>\$300,000</u>

PROBLEM 18-3

(a) Gross profit recognized in:

	2004	2005	2006
Contract price	\$3,000,000	\$3,000,000	\$3,000,000
Costs:		\$1,560,000	\$2,100,000
Costs to date	\$ 600,000		
Estimated costs to complete	<u>1,400,000</u>	<u>390,000</u>	<u>0</u>
Total estimated profit	<u>2,000,000</u>	<u>1,950,000</u>	<u>2,100,000</u>
Total estimated profit	1,000,000	1,050,000	900,000
Percentage completed to date	<u>30%*</u>	<u>80%**</u>	<u>100%</u>
Total gross profit recognized	300,000	840,000	900,000
Less: Gross profit recognized in previous years	<u>0</u>	<u>300,000</u>	<u>840,000</u>
Gross profit recognized in current year	<u>\$ 300,000</u>	<u>\$ 540,000</u>	<u>\$ 60,000</u>

*\$600,000 ÷ \$2,000,000

**\$1,560,000 ÷ \$1,950,000

(b) Construction in Process	540,000	
(\$2,100,000 – \$1,560,000)		
Materials, Cash, Payables, etc.		540,000
Accounts Receivable	900,000	
(\$3,000,000 – \$2,100,000)		
Billings on Construction in Process.....		900,000
Cash (\$2,750,000 – \$1,950,000)	800,000	
Accounts Receivable.....		800,000
Construction Expenses	540,000	
Construction in Process	60,000	
Revenue from Long-term Contracts		600,000*
* \$3,000,000 X (100% – 80%)		
Billings on Construction in Process	3,000,000	
Construction in Process		3,000,000

PROBLEM 18-3 (Continued)

(c)

**WINTER COMPANY
Balance Sheet (Partial)
December 31, 2005**

Current assets:		
Accounts receivable		\$150,000
(\$2,100,000 – \$1,950,000)		
Inventories		
Construction in process	\$2,400,000	
(\$1,560,000 + \$840,000)		
Less: Billings	<u>2,100,000</u>	
Costs and recognized gross profit in excess of billings		300,000

PROBLEM 18-4

(a)	2004	2005	2006
Contract price	<u>\$6,600,000</u>	<u>\$6,600,000</u>	<u>\$6,510,000</u>
Less estimated cost:			
Cost to date	1,782,000	3,850,000	5,500,000
Estimated cost to complete	<u>3,618,000</u>	<u>1,650,000</u>	<u>—</u>
Estimated total cost	<u>5,400,000</u>	<u>5,500,000</u>	<u>5,500,000</u>
Estimated total gross profit	<u>\$1,200,000</u>	<u>\$1,100,000</u>	<u>\$1,010,000</u>
Gross profit recognized in—			
2004:	$\frac{\$1,782,000}{\$5,400,000} \times \$1,200,000 =$	<u>\$396,000</u>	
2005:	$\frac{\$3,850,000}{\$5,500,000} \times \$1,100,000 =$		\$770,000
	Less 2004 recognized gross profit	<u>396,000</u>	
	Gross profit in 2005	<u>\$374,000</u>	
2006:	Less 2004–2005 recognized gross profit		<u>770,000</u>
	Gross profit in 2006		<u>\$240,000</u>

(b) **BEARD CONSTRUCTION COMPANY**
Balance Sheet
December 31, 2005

Current assets:	
Accounts receivable	\$ 300,000
(\$3,100,000 – \$2,800,000)	
Inventories	
Construction in process*	\$4,620,000
Less: Billings	<u>3,100,000</u>
Costs and recognized gross profit in excess of billings	1,520,000

*\$6,600,000 X (\$3,850,000 ÷ \$5,500,000)

PROBLEM 18-5

- (a) The completed-contract method of revenue recognition recognizes income only upon completion of a project or shipment of a product. All associated costs are expensed at the point of sale, and there are no interim charges or credits to income. Completed-contract revenue recognition is used for long-term projects when estimates of revenue and costs are not reliable.

The percentage-of-completion method of revenue recognition recognizes income and associated costs in each accounting period based upon progress. This method is preferred for long-term projects when estimates of revenues and costs are reasonably dependable. Under the percentage-of-completion method, the current status of uncompleted contracts is reflected on the financial statements.

- (b) Using the data provided for the Dagmar Haze Tractor Plant, and on the assumption that the percentage-of-completion method of revenue recognition is used, the calculations of GMCB's revenue and gross profit for 2003, 2004, and 2005, under three sets of circumstances are presented below.

1. Assuming that all costs are incurred, all billings to customers are made, and all collections from customers are received within 30 days of billing, the GMCB's revenue, cost of sales, and gross profit for 2003, 2004, and 2005, are calculated as follows:

Percentage-of-Completion (Cost-to-Cost Basis)
 (\$000 omitted)

Year	Contract Price	Costs to Date	Estimated Total Costs	Estimated Gross Profit (Col. 2–Col. 4)	Percent Complete (Col. 3/Col. 4)
(1)	(2)	(3)	(4)	(5)	(6)
2003	\$8,000	\$2,010	\$6,700	\$1,300	30%
2004	8,000	5,025	6,700	1,300	75%
2005	8,000	6,700	6,700	1,300	100%

PROBLEM 18-5 (Continued)

Revenue recognition

Year	Contract Price	Percent Complete	Revenue Recognizable	Less Prior Year(s)	Current Year
2003	\$8,000	30%	\$2,400	—	\$2,400
2004	8,000	75%	6,000	\$2,400	3,600
2005	8,000	100%	8,000	6,000	2,000

Profit recognition

Year	Estimated Profit	Percent Complete	Revenue Recognizable	Less Prior Year(s)	Current Year
2003	\$1,300	30%	\$ 390	—	\$390
2004	1,300	75%	975	\$390	585
2005	1,300	100%	1,300	975	325

2. Assuming the same facts as in Instruction (b)1., but that cost overruns of \$800,000 were experienced, GMCB's revenue, costs of sales, and gross profit for 2003, 2004, and 2005 were calculated as follows:

Percentage-of-Completion (Cost-to-Cost Basis)
(\$000 omitted)

Year	Contract Price	Costs to Date	Estimated Total Costs	Estimated Gross Profit (Col. 2–Col. 4)	Percent Complete (Col. 3/Col. 4)
(1)	(2)	(3)	(4)	(5)	(6)
2003	\$8,000	\$2,810	\$7,500	\$500	37.47%
2004	8,000	5,825	7,500	500	77.67%
2005	8,000	7,500	7,500	500	100%

Revenue recognition

Year	Contract Price	Percent Complete	Revenue Recognizable	Less Prior Year(s)	Current Year
2003	\$8,000	37.47%	\$2,997.6	—	\$2,997.6
2004	8,000	77.67%	6,213.6	\$2,997.6	3,216
2005	8,000	100%	8,000	6,213.6	1,786.4

PROBLEM 18-5 (Continued)

Profit recognition

Year	Estimated Profit	Percent Complete	Profit Recognizable	Less Prior Year(s)	Current Year
2003	\$500	37.47%	\$187.4	—	\$187.4
2004	500	77.67%	388.4	\$187.4	201
2005	500	100%	500	388.4	111.6

3. Assuming the same facts as in Instructions (b)1. and (b)2., but that additional cost overruns of \$540,000 are experienced, GMCB's revenue, cost of sales, and gross profit for 2003, 2004, and 2005 are calculated as follows:

Percentage-of-Completion (Cost-to-Cost Basis)
(\$000 omitted)

Year	Contract Price	Costs to Date	Estimated Total Costs	Estimated Gross Profit (Col. 2–Col. 4)	Percent Complete (Col. 3/Col. 4)
(1)	(2)	(3)	(4)	(5)	(6)
2003	\$8,000	\$2,810	\$7,500	\$500	37.47%
2004	8,000	6,365	8,040	(40)	79.17%
2005	8,000	8,040	8,040	(40)	100%

Revenue recognition

Year	Contract Price	Percent Complete	Revenue Recognizable	Less Prior Year(s)	Current Year
2003	\$8,000	37.47%	\$2,997.6	—	\$2,997.6
2004	8,000	79.17%	6,333.6	\$2,997.6	3,336
2005	8,000	100%	8,000	6,333.6	1,666.4

Profit recognition

Year	Estimated Profit	Percent Complete	Profit Recognizable	Less Prior Year(s)	Current Year
2003	\$500	37.47%	\$187.4	—	\$187.4
2004	(40)	100% ^a	(40)	\$187.4	(227.4)
2005	(40)	100%	(40)	(40)	—

^aWhen there is a projected loss at any time, it must be recognized in full in the period in which a loss on the contract appears probable.

PROBLEM 18-6

(a) **Computation of Recognizable Profit/Loss
Percentage-of-Completion Method**

2004

Costs to date (12/31/04)	\$3,200,000
Estimated costs to complete	<u>3,200,000</u>
Estimated total costs	<u>\$6,400,000</u>
Percent complete ($\$3,200,000 \div \$6,400,000$)	<u>50%</u>
Revenue recognized ($\$8,400,000 \times 50\%$)	\$4,200,000
Costs incurred	<u>3,200,000</u>
Gross profit recognized in 2004	<u>\$1,000,000</u>

2005

Costs to date (12/31/05)	\$5,800,000
($\$3,200,000 + \$2,600,000$)	
Estimated costs to complete	<u>1,450,000</u>
Estimated total costs	<u>\$7,250,000</u>
Percent complete ($\$5,800,000 \div \$7,250,000$)	<u>80%</u>
Revenue recognized in 2005	\$2,520,000
($\$8,400,000 \times 80\%$) – \$4,200,000	
Costs incurred in 2005	<u>2,600,000</u>
Loss recognized in 2005	<u>\$ (80,000)</u>

2006

Total revenue recognized	\$8,400,000
Total costs incurred	<u>7,250,000</u>
Total profit on contract	1,150,000
Deduct profit previously recognized	
($\$1,000,000 - \$80,000$)	<u>920,000</u>
Profit recognized in 2006	<u>\$ 230,000*</u>

PROBLEM 18-6 (Continued)

***Alternative**

Revenue recognized in 2006	\$1,680,000
(\$8,400,000 X 20%)	
Costs incurred in 2006	<u>1,450,000</u>
Profit recognized in 2006	<u>\$ 230,000</u>

**(b) Computation of Recognizable Profit/Loss
Completed-Contract Method**

2004—NONE
2005—NONE

2006

Total revenue recognized	\$8,400,000
Total costs incurred	<u>7,250,000</u>
Profit recognized in 2006	<u>\$1,150,000</u>

PROBLEM 18-7

(a) **Computation of Recognizable Profit/Loss
Percentage-of-Completion Method**

2004

Costs to date (12/31/04)	\$ 150,000
Estimated costs to complete	<u>1,350,000</u>
Estimated total costs	<u>\$1,500,000</u>
Percent complete ($\$150,000 \div \$1,500,000$)	<u>10%</u>
Revenue recognized ($\$1,950,000 \times 10\%$)	\$ 195,000
Costs incurred	<u>150,000</u>
Gross profit recognized in 2004	<u>\$ 45,000</u>

2005

Costs to date (12/31/05)	\$1,200,000
Estimated costs to complete	<u>800,000</u>
	2,000,000
Contract price	<u>\$1,950,000</u>
Total loss	<u>\$ 50,000</u>
Total loss	\$ 50,000
Plus gross profit recognized in 2004	<u>45,000</u>
Loss recognized in 2005	<u>\$ (95,000)</u>

OR

Percent complete ($\$1,200,000 \div \$2,000,000$)	<u>60%</u>
Revenue recognized in 2005 $[(\$1,950,000 \times 60\%) - \$195,000]$	\$ 975,000
Costs incurred in 2005 $(\$1,200,000 - \$150,000)$	<u>1,050,000</u>
Loss to date	75,000
Loss attributable to 2006*	<u>20,000</u>
Loss recognized in 2005	<u>\$ (95,000)</u>

PROBLEM 18-7 (Continued)

*2006 revenue		
(\$1,950,000 – \$195,000 – \$975,000)	\$780,000	
2003 estimated costs	<u>800,000</u>	
2003 loss	<u>\$ (20,000)</u>	

2006

Costs to date (12/31/06)		\$2,100,000
Estimated costs to complete		<u>0</u>
		2,100,000
Contract price		<u>1,950,000</u>
Total loss		<u>\$ (150,000)</u>
Total loss		\$ (150,000)
Less: Loss recognized in 2005	\$95,000	
Gross profit recognized in 2004	<u>(45,000)</u>	<u>(50,000)</u>
Loss recognized in 2006		<u>\$ (100,000)</u>

**(b) Computation of Recognizable Profit/Loss
Completed-Contract Method**

2004—NONE

2005

Costs to date (12/31/05)		\$1,200,000
Estimated costs to complete		<u>800,000</u>
Estimated total costs		2,000,000
Deduct contract price		<u>1,950,000</u>
Loss recognized in 2005		<u>\$ (50,000)</u>

2006

Total costs incurred		\$2,100,000
Total revenue recognized		<u>1,950,000</u>
Total loss on contract		(150,000)
Deduct loss recognized in 2005		<u>(50,000)</u>
Loss recognized in 2006		<u>\$ (100,000)</u>

PROBLEM 18-8

(a)	2004	2005	2006
Rate of gross profit $\left(\frac{\text{Gross profit}}{\text{Sales}} \right)$	40%	37%	35%
Gross profit realized:			
40% of \$ 75,000	\$30,000		
40% of \$100,000		\$40,000	
37% of \$100,000		37,000	
40% of \$ 50,000			\$ 20,000
37% of \$120,000			44,400
35% of \$110,000			38,500
	<u>\$30,000</u>	<u>\$77,000</u>	<u>\$102,900</u>
(b) Installment Accounts Receivable—2006.....		280,000	
Installment Sales			280,000
Cash		280,000	
Installment Accounts Receivable—2004			50,000
Installment Accounts Receivable—2005			120,000
Installment Accounts Receivable—2006			110,000
Cost of Installment Sales		182,000	
Inventory (or Purchases)			182,000
Installment Sales		280,000	
Cost of Installment Sales			182,000
Deferred Gross Profit on Installment Sales—2006			98,000
Deferred Gross Profit on Installment Sales— 2004		20,000	
Deferred Gross Profit on Installment Sales— 2005		44,400	
Deferred Gross Profit on Installment Sales— 2006		38,500	
Realized Gross Profit on Installment Sales			102,900
Realized Gross Profit on Installment Sales		102,900	
Income Summary			102,900

PROBLEM 18-9

	<u>2004</u>	<u>2005</u>	<u>2006</u>
Sales	\$385,000	\$426,000	\$525,000
Cost of Sales	<u>270,000</u>	<u>277,000</u>	<u>341,000</u>
Gross margin on sales	115,000	149,000	184,000
Gross margin realized on installment sales (See calculation below)	<u>36,300</u>	<u>72,600</u>	<u>119,050</u>
Total gross profit	<u>151,300</u>	<u>221,600</u>	<u>303,050</u>
Selling expenses	77,000	87,000	92,000
Administrative expenses	<u>50,000</u>	<u>51,000</u>	<u>52,000</u>
Total selling and administrative expenses	<u>127,000</u>	<u>138,000</u>	<u>144,000</u>
Net income	<u>\$ 24,300</u>	<u>\$ 83,600</u>	<u>\$159,050</u>

Calculation of gross margin realized on installment sales:

	<u>2004</u>	<u>2005</u>	<u>2006</u>
Rate of gross profit	33%*	39%**	41%***
Gross margin realized:			
33% of \$110,000	\$36,300		
33% of \$ 90,000		\$29,700	
39% of \$110,000		42,900	
33% of \$ 40,000			\$ 13,200
39% of \$140,000			54,600
41% of \$125,000			<u>51,250</u>
	<u>\$36,300</u>	<u>\$72,600</u>	<u>\$119,050</u>

$$* \frac{\$320,000 - \$214,400}{\$320,000} = 33\%$$

$$** \frac{\$275,000 - \$167,750}{\$275,000} = 39\%$$

$$*** \frac{\$380,000 - \$224,200}{\$380,000} = 41\%$$

PROBLEM 18-10

(a) Rate of gross profit on 2005 installment sales:

Deferred gross profit on repossessions

$$\$8,000 - \$800 - \$4,800 = \$2,400$$

$$\$2,400 \div \$8,000 = 30\%$$

It may also be computed as follows:

Accounts receivable at beginning of year

$$\$48,000 + \$104,000 + \$8,000 = \$160,000$$

Deferred gross profit at beginning of year

$$\$45,600 + \$2,400 = \$48,000$$

$$\$48,000 \div \$160,000 = 30\%$$

Rate of gross profit on 2006 installment sales:

$$\frac{\$200,000 - \$128,000}{\$200,000} = 36\%$$

(b)	Installment Sales	200,000	
	Cost of Installment Sales		128,000
	Deferred Gross Profit, 2006		72,000
	Deferred Gross Profit, 2005	31,200	
	Deferred Gross Profit, 2006	39,240	
	Realized Gross Profit on Installment Sales.....		70,440
	(30% X \$104,000 = \$31,200 36% X \$109,000 = \$39,240)		
	Realized Gross Profit on Installment Sales	70,440	
	Sales	343,000	
	Income Summary		29,640
	Cost of Sales		255,000
	Gain or Loss on Repossessions.....		800
	Selling and Administrative Expenses.....		128,000
	Income Summary.....	29,640	
	Retained Earnings		29,640

PROBLEM 18-10 (Continued)

**(c) ISABELL WERTH STORES
Statement of Income
For the Year Ended December 31, 2006**

Sales		\$343,000
Cost of goods sold		<u>255,000</u>
Gross margin on sales		88,000
Gross margin realized on installment sales		<u>70,440</u>
Total gross margin		158,440
Selling and administrative expenses	\$128,000	
Loss on repossessions	<u>800</u>	<u>128,800</u>
Net income for the year		<u>\$ 29,640</u>

PROBLEM 18-11

(a)	Installment Accounts Receivable	500,000	
	Installment Sales		500,000
	Cash	200,000	
	Installment Accounts Receivable		200,000
	Repossessed Merchandise	9,200	
	Deferred Gross Profit	8,160*	
	Loss on Repossessions	6,640	
	Installment Accounts Receivable		24,000

*(Rate of gross profit = $\frac{\$170,000}{\$500,000} = 34\%$)

34% X \$24,000 = \$8,160)

	Cost of Installment Sales	330,000	
	Purchases (or Inventory)		330,000
	Installment Sales	500,000	
	Cost of Installment Sales		330,000
	Deferred Gross Profit on Installment Sales		170,000
(b)	Deferred Gross Profit on Installment Sales	68,000	
	Realized Gross Profit on Installment Sales (34% of \$200,000 = \$68,000)		68,000

PROBLEM 18-12

(a) Rate of gross profit—2005:

Deferred gross profit beginning of year
 $\$64,000 + \$7,200 = \$71,200$
 Accounts receivable beginning of year
 $\$80,000 + \$18,000 + \$80,000 = \$178,000$
 Rate of gross profit
 $\$71,200 \div \$178,000 = 40\%$

(Inasmuch as the repossessions “were recorded correctly,” the 2005 rate of gross profit also may be computed by dividing \$7,200 by \$18,000)

Rate of gross profit—2006:

Installment sales	\$180,000
Cost of installment sales	<u>117,000</u>
 Gross profit	 <u>\$ 63,000</u>

Rate of gross profit—2006 = $\$63,000 \div \$180,000 = 35\%$

Cost of Goods Sold.....	391,000*	
Cost of Installment Sales	117,000	
Inventory 1/1/06		120,000
Purchases		380,000
Repossessed Merchandise		8,000

* $(\$120,000 + \$380,000 + \$8,000 - \$117,000)$

Inventory 12/31/06	127,400	
Repossessed Merchandise	4,000	
Cost of Goods Sold		131,400
 Installment Sales	 180,000	
Cost of Installment Sales.....		117,000
Deferred Gross Profit on Installment Sales—2006.....		63,000

PROBLEM 18-12 (Continued)

Deferred Gross Profit on Installment Sales—2005.....	32,000	
Deferred Gross Profit on Installment Sales—2006.....	17,500	
Realized Gross Profit on Installment Sales.....		49,500
(40% X \$80,000 = \$32,000; 35% X \$50,000 = \$17,500)		
Realized Gross Profit on Installment Sales	49,500	
Income Summary		49,500
Sales	400,000	
Cost of Goods Sold		259,600
(\$391,000 – \$131,400)		
Operating Expenses		112,000
Loss on Repossessions.....		2,800
Income Summary		25,600
Income Summary (\$49,500 + \$25,600).....	75,100	
Retained Earnings		75,100

(b)

CATHERINE FOX INC.
Statement of Income
For the Year Ended December 31, 2006

Sales			\$400,000
Cost of goods sold:			
Inventory, January 1	\$120,000		
Purchases	380,000		
Merchandise repossessed	8,000		
Available for sale	<u>508,000</u>		
Inventories December 31:			
New merchandise	\$127,400		
Repossessed merchandise	<u>4,000</u>	<u>131,400</u>	
Cost of merchandise sold		<u>376,600</u>	
Less cost of installment sales		<u>117,000</u>	<u>259,600</u>
Gross profit on regular sales			140,400
Gross profit realized on installment sales			<u>49,500</u>
Total gross profit realized			189,900
Operating expenses	112,000		
Loss on repossessions	<u>2,800</u>		<u>114,800</u>
Net income for the year			<u>\$ 75,100</u>

PROBLEM 18-13

-1-

Cash.....	200	
Installment Accounts Receivable.....	600	
Installment Sales.....		800

-2-

Cash.....	30	
Installment Accounts Receivable.....		30

-3-

Installment Cost of Goods Sold.....	560	
Inventory (or Purchase).....		560

Installment Sales.....	800	
Installment Cost of Goods Sold.....		560
Deferred Gross Profit on Installment Sales.....		240

Deferred Gross Profit on Installment Sales.....	69	
Realized Gross Profit on Installment Sales.....		69
(\$240 ÷ \$800 = 30%; 30% of \$230 = \$69)		

Realized Gross Profit on Installment Sales.....	69	
Income Summary.....		69

-4-

Cash (\$30 X 7).....	210	
Installment Accounts Receivable.....		210

-5-

Repossessed Merchandise.....	100	
Deferred Gross Profit on Installment Sales.....	108	
Loss on Repossession.....	152	
Installment Accounts Receivable.....		360

PROBLEM 18-13 (Continued)

Balance at repossession	\$360*
Gross profit (30%)	<u>(108)</u>
Book value	252
Value of repossessed merchandise	<u>100</u>
Loss	<u>\$152</u>

***\$30 X (20 – 8) = \$360**

PROBLEM 18-14

(a) 1. **VALENTINA VEZZALI COMPANY**
Schedule to Compute Cost
of Goods Sold on Installments
For 2004, 2005, and 2006

	2004	2005	2006
Purchases:			
1,400 units at \$130	\$182,000		
1,200 units at \$112		\$134,400	
900 units at \$136			\$122,400
Repossessed:			
50 units at \$60			3,000*
Inventory at December 31:			
2004 (1,400 – 1,100) X \$130	(39,000)	39,000	
2006 (950 – 850) X \$132**			(13,200)
Cost of goods sold	<u>\$143,000</u>	<u>\$173,400</u>	<u>\$112,200</u>

*An alternative valuation of the repossessed merchandise would be at an amount to earn the normal gross profit for the period.

** $(\$122,400 + \$3,000) \div (900 + 50) = \132

2. **VALENTINA VEZZALI COMPANY**
Schedule to Compute Average Unit Cost
of Goods Sold on Installments
For 2004, 2005, and 2006

	2004	2005	2006
2004 ($\$182,000 \div 1,400$)	<u>\$130</u>		
2005 ($\$173,400 \div 1,500$)		<u>\$115.60</u>	
2006 ($\$125,400^* \div 950^{**}$)			<u>\$132</u>

* $(\$122,400 + \$3,000)$

** $(900 + 50)$

PROBLEM 18-14 (Continued)

(b)

VALENTINA VEZZALI COMPANY
Schedule to Compute Gross Profit Percentages
For 2004, 2005, and 2006

	2004	2005	2006
Sales:			
1,100 units at \$200	\$220,000		
1,500 units at \$170		\$255,000	
800 units at \$182			\$145,600
50 units at \$80			4,000
	220,000	255,000	149,600
Cost of goods sold	<u>143,000</u>	<u>173,400</u>	<u>112,200</u>
Gross profit	<u>\$ 77,000</u>	<u>\$ 81,600</u>	<u>\$ 37,400</u>
 Gross profit percentages:			
\$77,000 ÷ \$220,000	<u>35%</u>		
\$81,600 ÷ \$255,000		<u>32%</u>	
\$37,400 ÷ \$149,600			<u>25%</u>

(c)

VALENTINA VEZZALI COMPANY
Schedule to Compute Loss on Repossessions
For 2006

Original sales amount (50 X \$170)	\$8,500.00
Collections prior to repossessions	<u>1,440.00</u>
Unpaid balance	7,060.00
Deduct:	
Unrealized gross profit (\$7,060 X 32%)	\$2,259.20
Value of repossessed merchandise	<u>3,000.00</u>
Loss on repossessions	<u>\$1,800.80</u>

PROBLEM 18-14 (Continued)

**(d) VALENTINA VEZZALI COMPANY
Schedule to Compute Net Income
From Installment Sales
For 2006**

Gross profit realized on installment sales:	
2006 ($\$34,600 \times 25\%$)	\$ 8,650.00
2005 ($\$100,000 \times 32\%$)	32,000.00
2004 ($\$80,000 \times 35\%$)	<u>28,000.00</u>
Total gross profit realized	68,650.00
Loss on repossessions	<u>1,800.80</u>
Net gross profit realized	66,849.20
General and administrative expense	<u>62,400.00</u>
[$\$60,000 + (1/3 \times \$7,200)$]	
Net income	<u><u>\$ 4,449.20</u></u>

PROBLEM 18-15

(a)

MAUER CONSTRUCTION COMPANY, INC.
Computation of Billings on Uncompleted Contract
In Excess of Related Costs
December 31, 2002

Partial billings on contract during 2002	\$1,500,000
Deduct construction costs incurred during 2002	1,140,000
Balance, December 31, 2002	<u>\$ 360,000</u>

MAUER CONSTRUCTION COMPANY, INC.
Computation of Costs of Uncompleted Contract
In Excess of Related Billings
December 31, 2003

Balance, December 31, 2002—excess of billings over costs	\$ (360,000)
Add construction costs incurred during 2003 (\$3,055,000 – \$1,140,000)	<u>1,915,000</u>
	1,555,000
Deduct provision for loss on contract recognized during 2003 (\$3,055,000 + \$1,645,000 – \$4,500,000)	<u>200,000</u>
	1,355,000
Deduct partial billings during 2003 (\$2,500,000 – \$1,500,000)	<u>1,000,000</u>
Balance, December 31, 2003	<u><u>\$ 355,000</u></u>

PROBLEM 18-15 (Continued)

**MAUER CONSTRUCTION COMPANY, INC.
Computation of Costs Relating to Substantially
Completed Contract in Excess of Billings
December 31, 2004**

Balance, December 31, 2003—excess of costs over billings	\$ 355,000
Add construction costs incurred during 2004 (\$4,800,000 – \$3,055,000)	<u>1,745,000</u>
	2,100,000
Deduct loss on contract recognized during 2004 (\$4,800,000 – \$4,500,000 – \$200,000)	<u>100,000</u>
	2,000,000
Deduct partial billings during 2004 (\$4,300,000 – \$2,500,000)	<u>1,800,000</u>
Balance, December 31, 2004	<u><u>\$ 200,000</u></u>

(b)

**MAUER CONSTRUCTION COMPANY, INC.
Computation of Profit or Loss to Be Recognized
On Uncompleted Contract
Year Ended December 31, 2002**

Contract price	<u>\$4,500,000</u>
Deduct contract costs Incurred to December 31, 2002	1,140,000
Estimated costs to complete	<u>2,660,000</u>
Total estimated contract cost	<u>3,800,000</u>
Estimated gross profit on contract at completion	<u>\$ 700,000</u>
 Profit to be recognized	 <u><u>\$ 0</u></u>

(The completed-contract method recognizes income only when the contract is completed, or substantially so.)

PROBLEM 18-15 (Continued)

**MAUER CONSTRUCTION COMPANY, INC.
Computation of Loss to Be Recognized
On Uncompleted Contract
Year Ended December 31, 2003**

Contract price	<u>\$4,500,000</u>
Deduct contract costs	
Incurred to December 31, 2003	<u>3,055,000</u>
Estimated costs to complete	<u>1,645,000</u>
Total estimated contract cost	<u>4,700,000</u>
Loss to be recognized	<u>\$ (200,000)</u>

(The completed-contract method requires that provision should be made for an expected loss.)

**MAUER CONSTRUCTION COMPANY, INC.
Computation of Loss to Be Recognized
On Substantially Completed Contract
Year Ended December 31, 2004**

Contract price	<u>\$4,500,000</u>
Deduct contract costs incurred	<u>4,800,000</u>
Loss on contract	<u>(300,000)</u>
Deduct provision for loss booked at December 31, 2003	<u>200,000</u>
Loss to be recognized	<u>\$ (100,000)</u>

PROBLEM 18-16

Dear Joy:

This letter regards the revenue recognition matter which we discussed earlier. By using a recognition method called percentage-of-completion, you will show a profit in every year of the construction project, assuming, of course, that no unexpected losses occur.

The completed-contract method which you use presumes that revenue from the contract is not truly earned until the entire contract is finished. Although costs associated with the contract and billings to the customer are recorded, the actual gross profit is not recognized until the year of project completion.

The percentage-of-completion method, on the other hand, presumes that, as portions of the contract are completed, part of the gross profit is being earned as well. Therefore, it attempts to measure the degree of the project's completion at each year-end. (This method assumes that the contract will be completed.)

The most frequently used measure of this degree of completion is the cost-to-cost method, which determines the percentage of a project's completion as the ratio of costs that have already been incurred to the total estimated costs required in order to finish the project. This percentage is then applied to the total contract price or gross profit to arrive at the amount of revenue or gross profit recognized for the period.

In succeeding periods, the above ratio becomes larger as the project nears completion. (If the estimated costs to complete the contract have changed, the ratio's denominator as well as its numerator should be adjusted.) The new ratio will still be applied to the total contract price or gross profit, this time subtracting out the portion of revenue (gross profit) already recognized in earlier periods.

To help you see the advantages of this method, I have computed the amount of gross profit you would have recognized on the building contract if you had used the percentage-of-completion method. Referring to the accompanying schedule, you will see that, in 2003, 2004, and 2005, you would have recognized \$80,000, \$70,000, and \$60,000, respectively. Although the amount recognized in 2005 is significantly lower than it would have been under the completed-contract method, the amounts recognized in 2003 and 2004 actually allow you to show a profit before the project

PROBLEM 18-16 (Continued)

has been finished. In addition, where applicable, generally accepted accounting principles require the use of the percentage-of-completion method in preference to the completed-contract method.

I hope you find this information helpful.

Sincerely,

A. Smart Student

PROBLEM 18-16 (Continued)

**Percentage-of-Completion Method
Three-Year Schedule of Gross Profit Recognition**

Gross profit recognized in 2003:		
Contract price	\$1,000,000	
Costs:		
Costs to date	\$320,000	
Estimated additional costs	<u>480,000</u>	<u>800,000</u>
Total estimated profit	200,000	
Percentage completion to date ($\$320,000/\$800,000$)		<u>40%</u>
Gross profit recognized in 2003		<u>\$ 80,000</u>
Gross profit recognized in 2004:		
Contract price		\$1,000,000
Costs:		
Costs to date	\$600,000	
Estimated additional costs	<u>200,000</u>	<u>800,000</u>
Total estimated profit		200,000
Percentage completion to date ($\$600,000/\$800,000$)		<u>75%</u>
Total gross profit recognized		150,000
Less: Gross profit recognized in 2003		<u>(80,000)</u>
Gross profit recognized in 2004		<u>\$ 70,000</u>
Gross profit recognized in 2005:		
Contract price		\$1,000,000
Costs:		
Costs to date	\$790,000	
Estimated additional costs	<u>0</u>	<u>790,000</u>
Total estimated profit		210,000
Percentage completion to date ($\$790,000/\$790,000$)		<u>100%</u>
Total gross profit recognized		210,000
Less: Gross profit recognized in 2003 and 2004 ($\$80,000 + \$70,000$)		<u>150,000</u>
Gross profit recognized in 2005		<u>\$ 60,000</u>

PROBLEM 18-17

(a) **Schedule to Compute Gross Profit for 2004**

	A	B	C	D	E
Estimated profit (loss):					
A: (\$300,000 – \$315,000)	\$(15,000)				
B: (\$350,000 – \$339,000)		\$11,000			
C: (\$280,000 – \$186,000)			\$94,000		
D: (\$200,000 – \$210,000)				\$(10,000)	
E: (\$240,000 – \$200,000)					\$40,000
A: (not applicable)	—				
B: (\$67,800 ÷ \$339,000)		20%			
C: (\$186,000 ÷ \$186,000)			100%		
D: (not applicable)				—	
E: (\$185,000 ÷ \$200,000)					92.5%
Gross profit (loss) recognized	\$(15,000)	\$ 2,200	\$94,000	\$(10,000)	\$37,000

**Schedule to Compute Unbilled Contract Costs
and Recognized Profit and Billings
in Excess of Costs and Recognized Profit**

	Costs and Estimated Earnings or Losses	Related Billings	Costs and Estimated Earnings in Excess of Billings	Billings in Excess of Costs and Estimated Earnings
A	\$233,000 ^a	\$200,000	\$ 33,000	
B	70,000 ^b	110,000		\$40,000
D	113,000 ^c	35,000	78,000	
E	222,000 ^d	205,000	17,000	
	\$638,000	\$550,000	\$128,000	\$40,000

^a\$248,000 – \$15,000

^b\$67,800 + \$2,200

^c\$123,000 – \$10,000

^d\$185,000 + \$37,000

PROBLEM 18-17 (Continued)

(b) Partial Income Statement

Revenue from long-term contracts	\$925,333*
Costs of construction	
(\$251,190 + \$67,800 + \$186,000 + \$127,143 + \$185,000)	<u>817,133</u>
Gross profit	<u>\$108,200</u>

*A:	\$300,000 X (\$248,000 ÷ \$315,000) =	\$236,190
B:	\$350,000 X (\$ 67,800 ÷ \$339,000) =	70,000
C:	\$280,000 X (\$186,000 ÷ \$186,000) =	280,000
D:	\$200,000 X (\$123,000 ÷ \$210,000) =	117,143
E:	\$240,000 X (\$185,000 ÷ \$200,000) =	<u>222,000</u>
	Total revenue recognized	<u>\$925,333</u>

Partial Balance Sheet

Current assets:		
Accounts receivable		\$ 65,000
(\$830,000 – \$765,000)		
Inventories		
Construction in process	\$568,000**	
Less: Billings	<u>440,000***</u>	
Unbilled contract costs and recognized profit (project A, D, and E)		128,000
Current liabilities:		
Billings (\$110,000) in excess of costs and recognized profit (\$70,000) (project B)		\$ 40,000

Project	Costs	Profit/(loss)	Construction in Process	Billings
A	\$248,000	\$(15,000)	\$233,000	\$200,000
D	123,000	(10,000)	113,000	35,000
E	<u>185,000</u>	<u>37,000</u>	<u>222,000</u>	<u>205,000</u>
Total	<u>\$556,000</u>	<u>\$12,000</u>	<u>\$568,000**</u>	<u>\$440,000***</u>

PROBLEM 18-17 (Continued)

(c) Schedule to Compute Gross Profit for 2004

	A	B	C	D	E
A: (\$300,000 – \$315,000)	\$(15,000)				
B: Not completed		—			
C: (\$280,000 – \$186,000)			\$94,000		
D: (\$200,000 – \$210,000)				\$(10,000)	
E: Not completed					—
Gross profit (loss) recognized	<u>\$(15,000)</u>	<u>—</u>	<u>\$94,000</u>	<u>\$(10,000)</u>	<u>—</u>

**Schedule to Compute Unbilled Contract Costs
and Billings in Excess of Costs**

	Costs and Estimated Earnings or Losses	Related Billings	Costs and Estimated Earnings in Excess of Billings	Billings in Excess of Costs and Estimated Earnings
A	\$233,000 ^a	\$200,000	\$ 33,000	
B	67,800	110,000		\$42,200
D	113,000 ^b	35,000	78,000	
E	<u>185,000</u>	<u>205,000</u>		<u>20,000</u>
	<u>\$598,800</u>	<u>\$550,000</u>	<u>\$111,000</u>	<u>\$62,200</u>

^a\$248,000 – \$15,000

^b\$123,000 – \$10,000

(d) The principal advantage of the completed-contract method is that it reports revenue based on the final results and not on estimates made throughout the construction period. However, the disadvantage of using this method is that for contracts which extend more than one accounting period, income recognition is distorted. For example, in this exercise Rich Mathre Construction Company would recognize \$39,200 less gross profit using the completed-contract method than if it was using the percentage-of-completion method. This difference exists because the only project completed at the end of 2004 was project C and so that is the only project from which Mathre may recognize revenue and gross profit. Therefore, even though a portion of the work was completed on projects B and E, no revenues or gross profit can be recognized until those projects are completed.

PROBLEM 18-17 (Continued)

On the other hand, the percentage-of-completion method does recognize revenue and gross profit before the completion of a project. If Mathre can determine reliable estimates of its progress and meets the other conditions for this method, Mathre can recognize revenues as the work progresses. The use of this method provides financial statement users with a more current picture of the results of the company's operations; however, problems may occur if the estimates are poor. If revised estimates, or even rising costs, show that a project will result in a loss, the company must offset gross profit previously recognized for that project. Thus, it is possible that the financial statements may present a good picture one year and the next year present a picture that is not as good.

The end results will be the same under either method and so the difference is simply one of timing. Therefore, if a company can determine reliable estimates of its progress towards completion and meets the required conditions, the percentage-of-completion method is preferred. Otherwise the completed-contract method is more appropriate.

TIME AND PURPOSE OF CASES

Case 18-1 (Time 20-30 minutes)

Purpose—to provide a situation that requires an examination and application of the earning and realization elements of three revenue recognition methods. The three business situations require the computation of revenue to be recognized.

Case 18-2 (Time 35-45 minutes)

Purpose—to provide the student with an understanding of the conceptual merits of recognizing revenue at the point of sale. The student is required to explain and defend the reasons why the point of sale is usually used as the basis for the timing of revenue recognition, plus describe the situations where revenue would be recognized during production or when cash is received, and the accounting merits of utilizing each of these bases of timing revenue recognition.

Case 18-3 (Time 25-30 minutes)

Purpose—to provide the student with an understanding of the conceptual factors underlying the recognition of revenue. The student is required to explain and justify why revenue is often recognized as earned at time of sale, the situations when it would be appropriate to recognize revenue as the productive activity takes place, and any other times that may be appropriate to recognize revenue.

Case 18-4 (Time 30-35 minutes)

Purpose—to provide the student with an understanding of the criteria and applications utilized in the determination of the proper accounting for revenue recognition. The student is required to discuss the factors to be considered in determining when revenue should be recognized, plus apply these factors in discussing the accounting alternatives that should be considered for the recognition of revenues and related expenses with regard to the information presented in the case.

Case 18-5 (Time 35-45 minutes)

Purpose—to student explains how a magazine publisher should recognize subscription revenue. The case is complicated by a 25% return rate and a premium offered to subscribers. The effect on the current ratio must be discussed.

Case 18-6 (Time 20-25 minutes)

Purpose—to student discusses the theoretical justification for use of the percentage-of-completion method. The student explains how progress billings are accounted for and how to determine the income recognized in the second year of a contract by the percentage-of-completion method. The student indicates the effect on earnings per share in the second year of a four-year contract from using the percentage-of-completion method instead of the completed-contract method.

Case 18-7 (Time 30-40 minutes)

Purpose—provides a recreational real estate development for which revenue recognition requires analysis and good judgment. The sale of lake lots is the basic transaction.

Case 18-8 (Time 25-30 minutes)

Purpose—to provide the student an ethical situation concerning revenue related to various transactions. Issues include membership fees, down payments, and sales with guarantees.

Case 18-9 (Time 20-25 minutes)

Purpose—to provide the student an ethical situation related to the recognition of revenue from membership fees.

Time and Purpose of Cases (Continued)

***Case 18-10 (Time 35-45 minutes)**

Purpose—to provide the student with an understanding of the accounting treatment accorded franchising operations. The student is required to discuss the alternatives that the franchisor might use to account for the initial franchise fee, evaluate each by applying generally accepted accounting principles to the case situation, and give an illustrative journal entry for each alternative. The student is also asked to apply the above concepts in determining when revenue should be recognized, given the nature of the franchisor's agreement with its franchisees.

SOLUTIONS TO CASES

CASE 18-1

(a) Definitions and descriptions of each of the three noted revenue recognition methods, and an indication as to whether they are in accordance with generally accepted accounting principles (GAAP), are presented below.

1. **Completion of production** allows revenue to be recognized when production is complete even though a sale has not yet been made. The circumstances that justify revenue recognition at this point are:

- The product is sold in a market with a reasonably assured selling price.
- The costs of selling and distributing the product are insignificant and can reasonably be estimated.
- Production, rather than sale, is considered the most critical event in the earnings process.

This method is in accordance with GAAP; however, it is an exception to the normal revenue recognition rules.

2. **Percentage of completion** is used on long-term projects and the following conditions must exist for its use:

- A firm contract price with a high probability of collection.
- A reasonably accurate estimate of costs.
- A way to reasonably estimate the extent of progress to the completion of the project.

Gross profit is recognized in proportion to the work completed. Normally, progress is measured as a percentage of the actual costs to date to the estimated total costs, or some other method that reasonably estimates actual completion.

The method is in accordance with GAAP for long-term projects when estimates are dependable.

3. The **installment sales** method allows revenue to be recognized when cash is collected rather than at the point of sale. Due, in part, to improved credit procedures that increase the likelihood of collection, the Accounting Principles Board in **APB Opinion No. 10** found the installment method of recognizing revenue generally to be unacceptable. The Board, however, recognized that there are exceptional cases where receivables are collectible over an extended period of time and, because of the terms of the transaction or other conditions, there is no reasonable basis for estimating the degree of collectibility. When such circumstances exist, and as long as they exist, either the installment method or cost recovery method of accounting may be used.

(b) The revenue to be recognized in the fiscal year ended November 30, 2004, for each of the three companies is as calculated and presented below:

1. Falilat Mining would recognize as revenue the market value of metals mined during the year.

Silver	\$ 750,000
Gold	1,300,000
Platinum	<u>490,000</u>
Total revenues	<u>\$2,540,000</u>

CASE 18-1 (Continued)

2. Mourning Paperbacks would recognize revenue of \$6,400,000, calculated as follows.

Sales in fiscal 2004	\$8,000,000
Less: Estimated sales returns and allowances (20%)	<u>1,600,000</u>
Net sales—revenue to be recognized in fiscal 2004	<u>\$6,400,000</u>

Although book distributors can return up to 30 percent of sales, prior experience indicates that 20 percent of sales is the expected average amount of returns. The collection of 2003 sales has no effect on fiscal 2004 sales recognition. The 21 percent of returns on the initial \$4,800,000 of 2004 sales confirms that 20 percent of sales will provide a reasonable estimate.

3. Osygus Protection Devices would recognize revenue of \$5,000,000. Revenue to be recognized represents the amount of goods actually billed and shipped when the method of recognizing revenue is at the point of sale (terms are F.O.B. shipping point).

CASE 18-2

- (a) The point of sale is the most widely used basis for the timing of revenue recognition because in most cases it provides the degree of objective evidence accountants consider necessary to reliably measure periodic business income. In other words, sales transactions with outsiders represent the point in the revenue-generating process when most of the uncertainty about the final outcome of business activity has been alleviated.

It is also at the point of sale in most cases that substantially all of the costs of generating revenues are known, and they can at this point be matched with the revenues generated to produce a reliable statement of a firm's effort and accomplishment for the period. Any attempt to measure business income prior to the point of sale would, in the vast majority of cases, introduce considerably more subjectivity in financial reporting than most accountants are willing to accept.

- (b) 1. Though it is recognized that revenue is earned throughout the entire production process, generally it is not feasible to measure revenue on the basis of operating activity. It is not feasible because of the absence of suitable criteria for consistently and objectively arriving at a periodic determination of the amount of revenue to recognize.

Also, in most situations the sale represents the most important single step in the earnings process. Prior to the sale, the amount of revenue anticipated from the processes of production is merely prospective revenue; its realization remains to be validated by actual sales. The accumulation of costs during production does not alone generate revenue. Rather, revenues are earned by the completion of the entire process, including making sales.

Thus, as a general rule, the sale cannot be regarded as being an unduly conservative basis for the timing of revenue recognition. Except in unusual circumstances, revenue recognition prior to sale would be anticipatory in nature and unverifiable in amount.

2. To criticize the sales basis as not being sufficiently conservative because accounts receivable do not represent disposable funds, it is necessary to assume that the collection of receivables is the decisive step in the earnings process and that periodic revenue measurement and, therefore, net income should depend on the amount of cash generated during the period. This assumption disregards the fact that the sale usually represents the decisive

CASE 18-2 (Continued)

factor in the earnings process and substitutes for it the administrative function of managing and collecting receivables. In other words, the investment of funds in receivables should be regarded as a policy designed to increase total revenues, properly recognized at the point of sale, and the cost of managing receivables (e.g., bad debts and collection costs) should be matched with the sales in the proper period.

The fact that some revenue adjustments (e.g., sales returns) and some expenses (e.g., bad debts and collection costs) may occur in a period subsequent to the sale does not detract from the overall usefulness of the sales basis for the timing of revenue recognition. Both can be estimated with sufficient accuracy so as not to detract from the reliability of reported net income.

Thus, in the vast majority of cases for which the sales basis is used, estimating errors, though unavoidable, will be too immaterial in amount to warrant deferring revenue recognition to a later point in time.

- (c) 1. **During production.** This basis of recognizing revenue is frequently used by firms whose major source of revenue is long-term construction projects. For these firms the point of sale is far less significant to the earnings process than is production activity because the sale is assured under the contract (except of course where performance is not substantially in accordance with the contract terms).

To defer revenue recognition until the completion of long-term construction projects could impair significantly the usefulness of the intervening annual financial statements because the volume of contracts completed during a period is likely to bear no relationship to production volume. During each year that a project is in process a portion of the contract price is, therefore, appropriately recognized as that year's revenue. The amount of the contract price to be recognized should be proportionate to the year's production progress on the project.

Income might be recognized on a production basis for some products whose salability at a known price can be reasonably determined as might be the case with some precious metals and agricultural products.

It should be noted that the use of the production basis in lieu of the sales basis for the timing of revenue recognition is justifiable only when total profit or loss on the contracts can be estimated with reasonable accuracy and its ultimate realization is reasonably assured.

2. **When cash is received.** The most common application of this basis for the timing of revenue recognition is in connection with installment sales contracts. Its use is justified on the grounds that, due to the length of the collection period, increased risks of default, and higher collection costs, there is too much uncertainty to warrant revenue recognition until cash is received.

The mere fact that sales are made on an installment contract basis does not justify using the cash receipts basis of revenue recognition. The justification for this departure from the sales basis depends essentially upon an absence of a reasonably objective basis for estimating the amount of collection costs and bad debts that will be incurred in later periods. If these expenses can be estimated with reasonable accuracy, the sales basis should be used.

CASE 18-3

- (a) Most merchandising concerns deal in finished products and would recognize revenue at the point of sale. This is often identified as the moment when the title legally passes from seller to purchaser. At the point of sale, there is an arm's-length transaction to objectively measure the amount of revenue to be recognized. With accounting theory based heavily on objective measurement, it is logical that point-of-sale transaction revenue recognition would be used by many firms, especially merchandising concerns.

Other advantages of point-of-sale timing for revenue recognition include the following:

1. It is a discernible event (as contrasted to the accretion concept).
 2. The seller has completed his/her part of the bargain—that is, the revenue has been earned with the passage of title when the goods are delivered.
 3. Realization has occurred in the sense that cash or near-cash assets have been received—there is some merit in the position that it is not earned revenue until cash or near-cash assets have been received.
 4. The seller's costs have been incurred with the result that net income can be measured.
- (b) For service-type transactions, revenue is generally recognized on the basis of the seller's performance of the transaction with performance being the execution of a defined act or acts or the passage of time. Service-type firms may select from recommended methods to recognize revenue: (1) specific performance method, (2) completed performance method, (3) proportional performance method, and (4) collection method.

In some non-service firms, revenue can be recognized as the productive activity takes place instead of at a later period (as at point of sale). The most common situation where revenue is recognized as production takes place has been through the application of percentage-of-completion accounting to long-term construction contracts. Under this procedure, revenue is approximated based on degree of contract performance to date and recorded as earned in the period in which the productive activity takes place.

A similar situation is present where, applying the accretion concept, the recognition of revenue takes place when increased values arise from natural growth or an aging process. In an economic sense, increases in the value of inventory give rise to revenue.

Revenue recognition by the accretion concept is not the result of recorded transactions, but is accomplished by the process of making comparative inventory valuations. Examples of applying the accretion concept would include the aging of certain liquors and wines, growing timber, and raising livestock.

- (c) Revenue is sometimes recognized at completion of the production activity, or after the point of sale. The recognition of revenue at completion of production is justified only if certain conditions are present. The necessary conditions are that there must be a relatively stable market for the product, marketing costs must be nominal, and the units must be homogeneous. These three necessary conditions are not often present except in the case of certain precious metals and agricultural products. In these situations it has been considered appropriate to recognize revenue at the completion of production.

In rare situations it may be necessary to postpone the recognition of revenue until after the point of sale. The circumstances would have to be unusual to postpone revenue recognition beyond the point of sale because of the theoretical desirability to recognize revenue as early in the earnings process as possible. A situation where it would be justified to postpone revenue recognition until a time after the point of sale would be where there is substantial doubt as to the ultimate collectibility of the receivable.

CASE 18-4

- (a) Income results from economic activity in which one entity furnishes goods or services to another. To warrant revenue recognition, the earnings process must be substantially complete and there must be a change in net assets that is capable of being objectively measured. Normally, this involves an arm's-length exchange transaction with a party external to the entity. The existence and terms of the transaction may be defined by operation of law, by established trade practice, or may be stipulated in a contract.

Events that give rise to revenue recognition are: the completion of a sale; the performance of a service; the progress of a long-term construction project, as in ship-building; or the production of a standard interchangeable good (such as a precious metal or an agricultural product) which has an immediate market, a determinable market value, and only minor costs of marketing. The passing of time may also be the event that establishes the recognition of revenues, as in the case of interest or rental revenue.

As a practical consideration, there must be a reasonable degree of certainty in measuring the amount of revenue. Problems of measurement may arise in estimating the degree of completion of a contract, the net realizable value of a receivable, or the value of a nonmonetary asset received in an exchange transaction. In some cases, while the revenue may be readily measured, it may be impossible to reasonably estimate the related expenses. In such instances, revenue recognition must be deferred until the matching process can be completed.

- (b) Alexei & Nemov, Inc., in effect, is a merchandising firm which collects cash (for merchandise credits) far in advance of furnishing the goods. In addition, since the data indicate that about 5 percent of the credits sold will never be redeemed, it also has revenue from this source unless these credits are redeemed. Alexei & Nemov's revenues from these two sources could be recognized on one of three major bases. First, all revenue could be recognized when the credits are sold—the sales basis or cash-collection basis if all sales are for cash. Second, amounts collected at the time credits are sold could be treated as an advance (sometimes referred to as deferred or unearned revenue) until credits are exchanged for the merchandise premiums at which time all of the revenue, including that relating to the never-to-be-redeemed credits, could be recognized. Third, some revenue could be recognized at the time the credits are sold, and the balance could be recognized at the time of redemption—this treatment would be especially appropriate for approximately 5 percent of the total, the credits that will never be redeemed. A modification of this basis would be to recognize the revenue from the never-to-be-redeemed credits on a passage-of-time basis.

The principal expense, merchandise premium costs, should be matched with the revenue. If all revenue is recognized when credits are sold, an accrual of the cost of the future premium redemptions would be necessary. In such a case, when credit redemptions and related premium issuances occurred, the costs of the premiums would be charged to the accrued liability account. On the other hand, if credit sales were treated as an advance, the deferred revenue would be recognized and the matching cost of the premiums issued would be recognized with the revenue at the time of redemption.

Under the third alternative, some predetermined portion, at least of the revenue from the never-to-be-redeemed credits, would be recognized when the credits are sold, but the recognition of the merchandise premium expense would be deferred until time of recognition.

Reasonable estimation is crucial to income determination. Under the first alternative, it is necessary to estimate future costs of premium issuances well in advance of the actual occurrence. In the second case, it is necessary to estimate the proportion of revenue which has already been earned on the basis of premium costs already incurred. It is a virtual certainty that not all credits sold will ultimately be presented for redemption. Such factors as the number of credits required to fill a book, the types of customers who receive credits, and the ease of exchanging credits for

CASE 18-4 (Continued)

premiums will all affect the proportion of credits actually redeemed in relation to the potential redemptions. The difference between the five percent initial estimate and the actual proportion of unredeemed credits affects the accrual of a liability for redemption of credits issued under the first method and the rate of transfer of revenue from the advances account under the second and third methods.

There will be other expenses aside from the costs of premiums issued but they should be relatively small after the initial promotion period and they should be accounted for under the usual principles which apply to accrual-basis accounting. Thus, premium catalogs printed but undistributed would ordinarily be treated as prepaid expenses; wages and salaries would be treated as expenses when incurred; depreciation, taxes, and similar expenses would be recognized in the usual manner.

- (c) Under all of the alternatives, Alexei & Nемов's major asset (in terms of data given in the question) would be its inventory of premiums. The major account with a credit balance would be either an estimated liability for cost of redeeming the outstanding credits under the first alternative or an advance (deferred revenue) account under the second and third alternatives. In view of the nature of the operation, the inventory account(s) would be included in the current asset classification and the liability would be classified as current. The advances would be reported preferably as a current liability.

CASE 18-5

- (a) Receipts based on subscriptions should be credited to unearned revenue. As each monthly edition is distributed, the unearned revenue is reduced (Dr.) and earned revenue is recognized (Cr.). A problem results because of the unqualified guarantee for a full refund. Certain companies experience such a high rate of returns to sales that they find it necessary to postpone revenue recognition until the return privilege has substantially expired. Cutting Edge is expecting a 25% return rate and it will not expire until the new subscriptions expire. The FASB has stated in **FASB Statement No. 48**, "Revenue Recognition When Right to Return Exists," that transactions should not be recognized currently as revenue unless **all** of the following conditions are met:

1. The seller's price to the buyer is substantially fixed or determinable at the date of exchange.
2. The buyer has paid the seller or the buyer is obligated to pay the seller and the obligation is not contingent on resale of the product.
3. Buyer's obligation to seller would not be changed in the event of theft of the product or physical destruction or damage.
4. The buyer acquiring the product for sale has economic substance apart from that provided by the seller.
5. The seller does not have significant obligations to directly bring about resale of the product by the buyer.
6. The amount of future returns can be reasonably estimated.

Cutting Edge has met all of the above conditions. Consequently, revenue **should be** recognized as each edition is distributed.

- (b) The expected sales return must be indicated when revenue is recognized. Since Cutting Edge is expecting a 25% return rate, as each edition is distributed and revenue is recognized, an amount equal to one-fourth of the earned revenue must be recognized for returns and allowances.

Sales Returns and Allowances	XXX	
Allowance for Estimated Sales Returns.....		XXX

CASE 18-5 (Continued)

This is necessary because the matching principle requires that the expected return be recognized at the same time revenue is recognized. The account entitled Sales Returns and Allowances is a contra-revenue account. There is some controversy, however, over how the allowance for estimated sales returns is classified. As long as subscribers pay in cash, the allowance for estimated sales returns cannot be a contra-asset. But is it reasonable for the account to be a liability? According to **FASB Statement of Financial Accounting Concepts No. 6**, a liability is a transaction of the past requiring future outlay of cash and is estimable. Since the allowance for estimated sales returns has the characteristics of a liability as stated above, it is indeed reasonable to classify it as a liability.

- (c) Since the atlas premium may be accepted whenever requested, it is necessary for Cutting Edge to record a liability for estimated premium claims outstanding. According to **FASB Statement No. 5**, the estimated premium claims outstanding is a contingent liability which should be reported since it can be readily estimated [60% of the new subscribers X (cost of atlas – \$2.00)] and its occurrence is probable. As the new subscription is obtained, Cutting Edge should record the estimated liability as follows:

Premium Expense	XXX	
Estimated Premium Claims Outstanding		XXX

Upon request for the atlas and payment of \$2.00 by the new subscriber, Cutting Edge should record

:

Cash	XXX	
Estimated Premium Claims Outstanding	XXX	
Inventory of Premiums		XXX

- (d) The current ratio (Current Assets/Current Liabilities) will change, but not in the direction Popov thinks. As subscriptions are obtained, current assets (cash or accounts receivable) will increase and current liabilities (unearned revenue) will increase by the same amount. In addition, the liabilities for estimated premium claims outstanding and the allowance for estimated sales returns will increase with no change in current assets. Consequently, the current ratio will decrease rather than increase as proposed. Naturally as the revenue is earned, these ratios will become more favorable. Similarly, the debt to equity ratio will not be decreased due to the increase in liabilities.

CASE 18-6

- (a) Vitaly Scherbo Company should recognize revenue as it performs the work on the contract (the percentage-of-completion method) because the right to revenue is established and collectibility is reasonably assured. Furthermore, the use of the percentage-of-completion method avoids distortion of income from period to period and provides for better matching of revenues with the related expenses.
- (b) Progress billings would be accounted for by increasing accounts receivable and increasing progress billings on contract, a contra-asset that is offset against the construction in process account. If the construction in process account exceeds the billings on construction in process account, the two accounts would be shown net in the current assets section of the balance sheet. If the billings on construction in process account exceeds the construction in process account, the two accounts would be shown net, in most cases, in the current liabilities section of the balance sheet.

CASE 18-6 (Continued)

- (c) The income recognized in the second year of the four-year contract would be determined using the cost-to-cost method of determining percentage of completion as follows:
1. The estimated total income from the contract would be determined by deducting the estimated total costs of the contract (the actual costs to date plus the estimated costs to complete) from the contract price.
 2. The actual costs to date would be divided by the estimated total costs of the contract to arrive at the percentage completed. This would be multiplied by the estimated total income from the contract to arrive at the total income recognizable to date.
 3. The income recognized in the second year of the contract would be determined by deducting the income recognized in the first year of the contract from the total income recognizable to date.
- (d) Earnings per share in the second year of the four-year contract would be higher using the percentage-of-completion method instead of the completed-contract method because income would be recognized in the second year of the contract using the percentage-of-completion method, whereas no income would be recognized in the second year of the contract using the completed-contract method.

CASE 18-7

- (a) This exercise is in reference to **FASB Statement No. 66**, Accounting for Sales of Real Estate. Paragraph 3 provides two criteria, both of which must be met; collectibility is assured and the seller is not obligated to perform significant activities in the future. In this scenario, satisfaction of those two criteria is questionable. First, the development is not completed; thus, the seller does have significant activities to complete. If the developer fails to complete the development, it is very reasonable to expect the buyers to stop making payment on their notes. In fact, they will probably initiate legal proceedings (class action suit) against the seller. The seller does not receive cash at the time of the “sale” and for all practical purposes is the holder of the notes.
- (b) This is the critical issue—what is the experience, financial status, and integrity of the developer? The accountant’s judgment should be strongly influenced by the background of management. If the developer has good experience and financial backing, consequently a high probability of project completion and customer satisfaction, one could recognize revenue when the development is virtually complete. If the developer has poor experience, worse—a bad reputation, revenue should not be recognized until the development is substantially complete. The objective of this case is to stimulate discussion of these professional judgment issues.
- (c) If the developer is financially sound and there is good reason to expect completion:

Notes Receivable	600,000	
Sales Revenue		600,000
Cost of Sales	100,000	
Developed Land		100,000
Promotion Expense	35,000	
Cash		35,000
If the financial security of the developer is questionable:		
Notes Receivable	600,000	
Deferred Revenue		600,000
Promotion Expense	35,000	
Cash		35,000

CASE 18-7 (Continued)

- (d) Notes to the financial statements should summarize the terms of the sale of lots, discuss the amount of development work which remains to be completed, the expected time of completion, and the major terms of the developer's credit line.

CASE 18-8

- (a) 1. NHRC should recognize revenue on the following bases:
- The membership fees, which are paid in advance and sold with a money-back guarantee, should be recognized as revenue over the life of the membership. Each month, NHRC earns one-twelfth of the revenue. This results in a liability for the unearned and potentially refundable portion of the fee. For those membership fees that are financed, interest is recognized as time passes at the rate of 9 percent per annum.
 - Court rental fees should be recorded as revenue as the members use the courts.
 - Revenue from the sale of coupon books should be recorded when the coupons are redeemed; i.e., when members attend aerobics classes. At year-end, an adjustment should be made to recognize the revenue from unused coupons that have expired.
2. Since NHRC has not provided any service when the down payment for equipment is received, the down payment should be treated as a current liability until delivery of the equipment is made.
3. Since NHRC expects to incur costs under the guarantee and these costs can be estimated, an amount equal to 4 percent of the total revenue should be accrued in the accounting period in which the sale is recorded.
- (b) The Institute of Management Accountants structured its unofficial answer to this ethical question around its "Standards of Ethical Conduct for Management Accountants" (Statement on Management Accounting Number 1c):
- Competence
Hogan has an obligation: (1) to perform his professional duties in accordance with relevant technical standards and (2) to prepare complete and clear reports after appropriate analyses of relevant and reliable information. Hogan's proposed changes to the financial statements are not in accordance with generally accepted accounting principles and, therefore, will not result in clear reports based on reliable information.
 - Confidentiality
Hogan has an obligation to refrain from using or appearing to use confidential information acquired in the course of his work for unethical personal advantage. If Hogan is proposing the accounting changes to increase his year-end bonus, as Hardy believes, he has misused confidential information.
 - Integrity
By insisting on making the adjustments to the financial statements to cover up unfavorable information and increase his bonus, Hogan has: (1) failed to avoid a conflict of interest, (2) prejudiced his ability to carry out his duties ethically, (3) subverted the attainment of the organization's legitimate and ethical objectives, (4) failed to communicate unfavorable as well as favorable information, and (5) engaged in an activity that discredits his profession.

CASE 18-8 (Continued)

- Objectivity

Hogan's proposals do not communicate information fairly and objectively nor will they disclose all relevant information that could reasonably be expected to influence an intended user's understanding of the financial statements.

- (c) Barbara Hardy may wish to speak to Hogan again regarding the GAAP violations to ensure that she understands his position. In order to resolve the situation, Hardy should follow the policies established by NHRC for the resolution of ethical conflicts. If the company does not have such a policy or the policy does not resolve the conflict, Hardy should consider the following course of action:
1. Since her immediate supervisor is involved in the situation, Hardy should take the issue to the next higher managerial level. Hardy need not inform Hogan of this step because of his involvement.
 2. If there is no resolution, Hardy should continue to present the problem to successively higher levels of internal review; i.e., audit committee, Board of Directors.
 3. Hardy should have a confidential discussion of her options with an objective advisor to obtain a clearer understanding of possible courses of action.
 4. After exhausting all levels of internal review without resolution, Hardy may have no other recourse than to resign her position. Upon doing so, she should submit an informative memorandum to an appropriate representative of the organization.
 5. Hardy should not communicate with individuals outside of the organization about this situation unless legally prescribed to do so.

CASE 18-9

- (a) Honesty and integrity of financial reporting versus higher corporate profits are the ethical issues. Hack's position represents GAAP. The financial statements should be presented fairly and that will not be the case if Cavaretta's approach is followed. External users of the statements such as investors and creditors, both current and future, will be misled.
- (b) Hack should insist on statement presentation in accordance with GAAP. If Cavaretta will not accept Hack's position, Hack will have to consider alternative courses of action, such as contacting higher-ups at Midwest, and assess the consequences of each.

*CASE 18-10

- (a) Two primary criteria must be met before revenue is recognized: (1) the related earnings process must be substantially completed, and (2) there must be objective evidence of the market value of the output—this often is interpreted to require that an exchange has taken place—as is usually referred to as realization. Several issues arise when applying these principles in accounting for the initial franchise fee. The first concerns the time of recognition of the fee as revenue—to which of several possible periods should it be assigned? The second relates to the amount of revenue to be recognized and this, in turn, is partially a question of the valuation of the notes received. Possible alternative methods are illustrated and evaluated as follows:

***CASE 18-10 (Continued)**

			or
1.	Cash	30,000	30,000
	Notes Receivable	50,000	37,908
	Discount on Notes Receivable	12,092	
	Franchise Fee Revenue	67,908	67,908

This method would be appropriate if (a) there was a reasonable expectation that the down payment may be refunded, and (b) substantial future services are to be provided to the franchisee; that is, performance by the franchisor has not yet occurred. If the notes called for the payment of interest at the going rate, there would be no need for the Discount on Notes Receivable and the Unearned Franchise Fees would be \$80,000.

			or
2.	Cash	30,000	30,000
	Notes Receivable	50,000	37,908
	Discount on Notes Receivable	12,092	
	Unearned Franchise Fees	67,908	67,908

This method would be acceptable if (a) the probability of refunding the initial fee was extremely low, and (b) the amount of future services to be provided to the franchisee was minimal; that is, performance by the franchisor is deemed to have taken place.

			or
3.	Cash	30,000	30,000
	Notes Receivable	50,000	37,908
	Discount on Notes Receivable	12,092	
	Revenue from Franchise Fees	30,000	30,000
	Unearned Franchise Fees	37,908	37,908

The assumptions underlying this alternative are that (a) the down payment of \$30,000 is not refundable and represents a fair measure of services provided to the franchisee at the time the contract is signed, and (b) a significant amount of service is to be performed by the franchisor in future periods.

4.	Cash	30,000	
	Revenue from Franchise Fees		30,000

This procedure would be consistent with the cash basis of accounting and would be considered appropriate in situations where (a) the initial fee is not refundable, (b) the contract does not call for a substantial amount of future services to the franchisee, and (c) the collection of any part of the notes is so uncertain that recognition of the notes as assets is unwarranted.

5.	Cash	30,000	
	Unearned Franchise Fees		30,000

The assumption underlying this procedure is that either the down payment is refundable or substantial services must be performed by the franchisor before the fee can be considered earned. As in alternative 4., the collection of any portion of the notes receivable is so uncertain that recognition in the accounts cannot be considered appropriate.

***CASE 18-10 (Continued)**

6. Three additional alternatives would parallel the first three alternatives given above, except that the notes would be reported at their face value. These alternatives would be appropriate in situations where the notes bear interest or call for the payment of interest at the going rate.

(b) Because the initial cash collection of \$30,000 must be refunded if the franchise fails to open, it is not fully earned until the franchisee begins operations. Thus, Chou Foods should record the initial franchise fee as follows:

		or
Cash	30,000	30,000
Notes Receivable	50,000	37,908
Discount on Notes Receivable	12,092	
Unearned Franchise Fees.....	67,908	67,908
(or Advances by Franchisees)		

When the franchisee begins operations, the \$30,000 would be earned and the following entry should be made:

Unearned Franchise Fee	30,000	
Revenue from Franchise Fees		30,000

If there is no time lag between the collection of the \$30,000 and the opening by the franchisee, then the initial cash collection of \$30,000 is earned when it is received and the initial franchise fee should be recorded as follows:

		or
Cash	30,000	30,000
Notes Receivable	50,000	37,908
Discount on Notes Receivable	12,092	
Unearned Franchise Fees.....	37,908	37,908
(or Advances by Franchisees)		
Revenue from Franchise Fees	30,000	30,000

After Chou Foods Inc. has experienced the opening of a large number of franchises, it should be possible to develop probability measures so that the expected value of the retained initial franchise fee can be determined and recorded as earned at the time of receipt.

The notes receivable are properly recorded at their present value. No more than \$37,908, the net present value of the notes, should be reported as an asset. Interest at 10% should be accrued each year by a debit to Discount on Notes Receivable (or Notes Receivable) and a credit to Interest Revenue. Collections are recorded as debits to Cash and credits to Notes Receivable. Each year as the services are rendered, an appropriate amount would be transferred from Unearned Franchise Fees to Revenue from Franchise Fees. Since these annual payments are not refundable, the Revenue from Franchise Fees might be recognized at the time the \$10,000 is collected, but this may result in the mismatching of cost and revenue.

At the time that a franchise opens, only two steps remain before Chou Foods Inc. will have fully earned the entire franchise fee. First, it must provide expert advice over the five-year period.

*CASE 18-10 (Continued)

Second, it must wait until the end of each of the next five years so that it may collect each of the \$10,000 notes. Since collection has not been a problem, and since the advice may consist largely of manuals and periodical service tip flyers, it could be maintained that a substantial portion of the \$37,908, the present value of the notes, should be recognized as revenue when a franchisee begins operations. Although there have been no defaults on the notes, the extent of Chou Foods Inc.'s experience may be so limited that there may in fact be a substantial collection problem in the future (as has been the actual experience of many franchisors in the recent past). At some time in the future, after Chou Foods Inc. has experienced a large number of franchises that have opened and operated for five years or more, it should be possible to develop probability measures so that the earned portion of the present value of the notes may be recognized as revenue at the time the franchise begins operations.

The monthly fee of 2% of sales should be recorded as revenue at the end of each month. This fee is for current services rendered and should be recognized as the services are performed.

- (c) If the rental portion of the initial franchise fee, \$20,000, represents the present value of monthly rentals over a ten-year period, it should be recorded as Unearned Lease Revenue to be recognized on an actuarially sound basis over the periods benefiting from the use of the leased assets. This type of transaction does not necessarily represent a sale of the equipment and immediate recognition of the entire rental as revenue may not be appropriate.

If the transaction could be considered to be a sale of equipment, the entire rental revenue of \$20,000 should be recognized immediately upon delivery of the equipment.

Since credit risks are no problem, the conditions that must be met to justify recognizing a sales transaction are: (1) whether Chou Foods Inc. retains sizable risks of ownership, and (2) whether there are important uncertainties surrounding the amount of costs yet to be incurred. The fact that no portion of the rental is refundable does not warrant immediate recognition of the entire amount as revenue. The major questions are whether the equipment has a substantial salvage value at the end of the ten years, whether the franchisee or Chou Foods Inc. gets the equipment free or for a nominal fee at the end of the ten years, and whether Chou Foods Inc. has responsibility for servicing, repairing, and maintaining the equipment during all or part of the ten-year period.

Because the data do not provide answers to these questions, a definite recommendation cannot be given to the preferable method of accounting for the "rental" portion of the initial franchise fee.

FINANCIAL REPORTING PROBLEM

- (a) 2001 Sales: \$16,079 million.
- (b) 3M's revenues decreased from \$16,724 million to \$16,079 million from 2000 to 2001, or 3.9%. Revenues increased from \$15,748 million to \$16,079 million from 1999 to 2001, or 2.1%. From 1996 to 2001, sales increased from \$14,295 million to \$16,079 million or 12.5%
- (c) Revenue is recognized when the risks and rewards of ownership have substantively transferred to customers, regardless of whether legal title has transferred. This condition is normally met when the product has been delivered or upon performance of services. The company sells a wide range of products to a diversified base of customers around the world and, therefore, believes there is no material concentration of credit risk. Prior to 2000, the company recognized revenue upon shipment of goods to customers and upon performance of services.
- (d) During the fourth quarter of 2000, the company changed its revenue recognition policies. Essentially, the new policies recognize that the risks and rewards of ownership in many transactions do not substantively transfer to customers until the product has been delivered, regardless of whether legal title has transferred. In addition to this change in accounting that affected a substantial portion of its product sales, the company has revised aspects of its accounting for services provided in several of its smaller businesses. These new policies are consistent with the guidance contained in SEC Staff Accounting Bulletin No. 101. The effect of these changes in revenue recognition policies, as of January 1, 2000, is reported as the cumulative effect of an accounting change in 2000. This change did not have a significant effect on previously reported 2000 quarters or on prior years.

FINANCIAL STATEMENT ANALYSIS CASE

WESTINGHOUSE ELECTRIC CORPORATION

- (a) For produce sales, Westinghouse Electric Corporation uses the date of delivery, point of sale, basis for revenue recognition. For services rendered, Westinghouse uses the “when services are complete and billable method” of recognizing revenues. For nuclear steam supply system orders (approximately 5 years in duration) and other long-term construction projects, Westinghouse uses the percentage-of-completion method for recognizing revenue. And, WFSI revenues are recognized on the accrual basis, except when accounts become delinquent for two or more periods; then income is recognized only as payments are received; that is, on the cash basis.
- (b) Point of sale or date of delivery is acceptable in ordinary product sale transactions where the seller’s earning process is virtually complete, no further obligations or costs remain, and the exchange transaction has taken place (title passes).
For service type transactions revenue is recognized as earned and realizable, which is when services are rendered to the satisfaction of the customer and become billable.
The percentage-of-completion method of revenue recognition is acceptable on long-term projects, usually construction contracts exceeding one year in length. Its application is required if the following conditions exist:
- (1) A firm contract price with a high probability of collection exists.
 - (2) A reasonably accurate estimate of costs and therefore gross profit, can be made.
 - (3) A reasonable estimate of the extent of progress toward completion can be made intermittently.
- (c) WFSI is probably a wholly owned finance subsidiary of Westinghouse that provides financing for customers of Westinghouse. The character of the revenue being recognized by WFSI is interest revenue on notes receivable. So long as accounts are current, payments are being received, interest and principal are recognized in each payment. When two payments are missed, the account is declared delinquent and interest is no longer accrued. On delinquent accounts it is probable that if and as cash is collected, the cost recovery method is applied; that is, interest is recognized only after all principal is recovered.

COMPARATIVE ANALYSIS CASE

- (a) For the year 2001, Coca-Cola reported net operating revenues of \$20.1 billion and PepsiCo reported net sales of \$26.9 billion.

Coca-Cola increased its revenues \$203 million or 1% from 2000 to 2001 while PepsiCo increased its sales \$1,456 million or 5.7% from 2000 to 2001.

- (b) In 2001, Coca-Cola experienced significant amounts of revenues in Africa, \$621 million; Europe, \$4,492 million; Latin America, \$2,273 million; and Asia, \$5,000 million. In 2001, PepsiCo did not disclose net sales by individual country. Net sales were broken down as North America and International only.

In 2001, Coca-Cola's U.S. (North America) revenues were \$7,526 million compared with \$12,566 million of foreign revenues, while PepsiCo's U.S. revenues were \$19,223 million compared with \$7,712 million of foreign revenues.

RESEARCH CASES

CASE 1

- (a) **A Form 8-K must be filed with respect to the following: (1) change in control of the registrant, (2) acquisition or disposition of significant assets, (3) bankruptcy or receivership, (4) changes in certifying accountants, (5) resignations of directors, and (6) change in fiscal year. An 8-K may be filed at the option of the company with respect to any other events.**
- (b) **Depends on company selected.**

CASE 2

- (a) **Profits are a function of both revenues and expenses (profit = revenues – expenses). Therefore, inflating profits can be accomplished by inflating revenues and or deferring or not recognizing expenses. For example, in contrast to some of the profit inflating actions discussed in this article, Worldcom inflated its profits by capitalizing operating expenditures on the balance sheet rather the recording them as expenses.**
- (b) **Accounting information related to income and its components is used by investors and creditors to predict future cash flows and/or to develop their own estimates of value based on the accounting information. Based on these assessments, investors make decisions about stocks to buy, hold or sale. Creditors use the information to determine whether to loan money to companies and at what interest rate. When the accounting information is manipulated, investors and creditors get incorrect or biased information about the net results of operations based on net income or profits. Similarly, when revenues are inflated, investors may be led to believe that the level of activity in the business is higher than is really the case, which can lead to bottom-line profits being overstated.**
- (c) **Three of the ways discussed are the use of "Round-trip" deals, barter transactions, and vendor financing. In round trip deals, companies**

RESEARCH CASES (Continued)

typically swap assets or services back and forth without any real gains. But both companies recognize revenues on the transactions. SEC officials are increasingly concerned that such round trips had no real business purpose other than inflating revenue. In a barter transaction, companies such as L90 trades products with another company, but the products swapped have nearly identical values. That is the cost and revenue are the same but L90 books the entire (or gross) amount as revenue. Vendor financing is a loan by a supplier to help a vendor purchase the product, which will be ultimately sold to the final customer. The problem is that if the products are not sold, the vendor can return the products without paying the loan. Thus, revenues were overstated.

Particular concern about practices that inflate revenues arise due to the focus by investors on revenue and revenue growth, which slowed or halted in the late 1990s with the collapse of the .coms. Thus there is even more pressure on companies to boost their revenues numbers and there are heightened concerns by regulators about inflated revenues (and profits, of revenues if the first line).

- (d) See the response to (a). Revenues will be a separate line in both a single step or a multiple-step income statement. However, if a single-step format is used, "other income" will be buried in the total expenses below the revenue line. Thus, by splitting up the effects of the transaction this way, revenues appear much higher than the net amount.
- (e) Like vendor financing, vendor allowances are incentives provided to customers to take delivery of product, which then allows the seller to recognize revenue. However, if the customers are allowed to return the products, if they are unable to sell them to their customers, then the revenues of the original seller were overstated. In addition, by not recording an allowance for vendor rebates, these sellers also understate expenses, leading to inflated profits.

PROFESSIONAL SIMULATION

Measurement

Revenues	\$9,500,000
Expenses	<u>7,750,000</u>
	1,750,000
Gross profit on contract*	50,000
Gross profit on installment sales**	<u>120,000</u>
Net income	<u><u>\$1,920,000</u></u>

*
$$\frac{\$200,000 + \$200,000}{\$200,000 + \$200,000 + \$400,000} = 50\% \times (\$1,000,000 - \$800,000) = \$100,000$$

Less gross profit recognized in 2002	<u>(50,000)</u>
	<u>\$ 50,000</u>

**\$480,000 X 25% = \$120,000

Journal Entries

Construction in Process	200,000	
Materials, Cash, Payables, etc.		200,000
Construction in Process (Gross Profit)*	50,000	
Construction Expenses	200,000	
Revenue from Long-Term Contract		250,000***

*See above.

*** $(50\% \times \$1,000,000) - \$250,000$

Financial Statements

Diversified Products, Inc. Balance Sheet 12/31/2003

Current Assets

Accounts Receivable	\$55,000
Inventories	
Construction in process	\$500,000
Less: Billing	<u>405,000</u>
Costs and recognized profits in excess of billings	<u><u>\$ 95,000</u></u>

CHAPTER 19

Accounting for Income Taxes

ASSIGNMENT CLASSIFICATION TABLE

Topics	Questions	Brief		Problems	Cases
		Exercises	Exercises		
1. Reconcile pretax financial income with taxable income.	1, 13	1	1, 2, 4, 7, 12, 18, 20, 21	1, 2, 3, 8	
2. Identify temporary and permanent differences.	2, 3, 4, 5		4, 5, 6, 7		3, 4, 5
3. Determine deferred income taxes and related items—single tax rate.	6, 7, 13	2, 3, 4, 5, 6, 7, 9	1, 3, 4, 5, 7, 8, 12, 14, 15, 19, 21, 23, 25	3, 4, 8, 9	2
4. Classification of deferred taxes.	10, 11, 12,	8, 15	7, 11, 16, 18, 19, 20, 21, 22	1, 3, 6	2, 3, 5
5. Determine deferred income taxes and related items—multiple tax rates, expected future income.		10	2, 13, 16, 17, 18, 20, 22	1, 2, 6, 7	1, 6, 7
6. Determine deferred taxes, multiple rates, expected future losses.		10			
7. Carryback and carryforward of actual NOL.	14, 16, 17, 18,	12, 13, 14	9, 10, 23, 24, 25	5	
8. Change in enacted future tax rate.	14	11	16	2, 7	
9. Tracking temporary differences through reversal.		9	8, 17, 25	2, 7	
10. Income statement presentation.	9		1, 2, 3, 4, 5, 7, 10, 12, 16, 23, 24, 25	2, 3, 5, 7, 8, 9	
11. Conceptual issues—tax allocation.	1, 2, 8				1, 2, 7
12. Valuation allowance—deferred tax asset.	8		7, 14, 15		
13. Disclosure and other issues.	15				

ASSIGNMENT CHARACTERISTICS TABLE

Item	Description	Level of Difficulty	Time (minutes)
E19-1	One temporary difference, future taxable amounts, one rate, no beginning deferred taxes.	Simple	15-20
E19-2	Two differences, no beginning deferred taxes, tracked through 2 years.	Simple	15-20
E19-3	One temporary difference, future taxable amounts, one rate, beginning deferred taxes.	Simple	15-20
E19-4	Three differences, compute taxable income, entry for taxes.	Simple	15-20
E19-5	Two temporary differences, one rate, beginning deferred taxes.	Simple	15-20
E19-6	Identify temporary or permanent differences.	Simple	10-15
E19-7	Terminology, relationships, computations, entries.	Simple	10-15
E19-8	Two temporary differences, one rate, three years.	Simple	10-15
E19-9	Carryback and carryforward of NOL, no valuation account, no temporary differences.	Simple	15-20
E19-10	Two NOLs, no temporary differences, no valuation account, entries and income statements.	Moderate	20-25
E19-11	Three differences, classify deferred taxes.	Simple	10-15
E19-12	Two temporary differences, one rate, beginning deferred taxes, compute pretax financial income.	Complex	20-25
E19-13	One difference, multiple rates, effect of beginning balance versus no beginning deferred taxes.	Simple	20-25
E19-14	Deferred tax asset with and without valuation account.	Moderate	20-25
E19-15	Deferred tax asset with previous valuation account.	Complex	20-25
E19-16	Deferred tax liability, change in tax rate, prepare section of income statement.	Complex	15-20
E19-17	Two temporary differences, tracked through three years, multiple rates.	Moderate	30-35
E19-18	Three differences, multiple rates, future taxable income.	Moderate	20-25
E19-19	Two differences, one rate, beginning deferred balance, compute pretax financial income.	Complex	25-30
E19-20	Two differences, no beginning deferred taxes, multiple rates.	Moderate	15-20
E19-21	Two temporary differences, multiple rates, future taxable income.	Moderate	20-25
E19-22	Two differences, one rate, first year.	Simple	15-20
E19-23	NOL carryback and carryforward, valuation account versus no valuation account.	Complex	30-35
E19-24	NOL carryback and carryforward, valuation account needed.	Complex	30-35
E19-25	NOL carryback and carryforward, valuation account needed.	Moderate	15-20
P19-1	Three differences, no beginning deferred taxes, multiple rates.	Complex	40-45
P19-2	One temporary difference, tracked for four years, one permanent difference, change in rate.	Complex	50-60
P19-3	Second year of depreciation difference, two differences, single rate, extraordinary item.	Complex	40-45
P19-4	Permanent and temporary differences, one rate.	Moderate	20-25
P19-5	Actual NOL without valuation account.	Simple	20-25

ASSIGNMENT CHARACTERISTICS TABLE (Continued)

Item	Description	Level of Difficulty	Time (minutes)
P19-6	Two differences, two rates, future income expected.	Moderate	20-25
P19-7	One temporary difference, tracked three years, change in rates, income statement presentation.	Complex	45-50
P19-8	Two differences, two years, compute taxable income and pretax financial income.	Complex	40-50
P19-9	Five differences, compute taxable income and deferred taxes, draft income statement.	Complex	40-45
C19-1	Objectives and principles for accounting for income taxes.	Simple	15-20
C19-2	Basic accounting for temporary differences.	Moderate	20-25
C19-3	Identify temporary differences and classification criteria.	Complex	20-25
C19-4	Accounting for and classification of deferred income taxes.	Moderate	20-25
C19-5	Explain computation of deferred tax liability for multiple tax rates.	Complex	20-25
C19-6	Explain future taxable and deductible amounts, how carryback and carryforward affects deferred taxes.	Complex	20-25
C19-7	Deferred taxes, income effects.	Moderate	20-25

ANSWERS TO QUESTIONS

1. Pretax financial income is reported on the income statement and is often referred to as income before income taxes. Taxable income is reported on the tax return and is the amount upon which a company's income tax payable is computed.
2. One objective of accounting for income taxes is to recognize the amount of taxes payable or refundable for the current year. A second is to recognize deferred tax liabilities and assets for the future tax consequences of events that have already been recognized in the financial statements or tax returns.
3. A permanent difference is a difference between taxable income and pretax financial income that, under existing applicable tax laws and regulations, will not be offset by corresponding differences or "turn around" in other periods. Therefore, a permanent difference is caused by an item that: (1) is included in pretax financial income but never in taxable income, or (2) is included in taxable income but never in pretax financial income.

Examples of permanent differences are: (1) interest received on municipal obligations (such interest is included in pretax financial income but is not included in taxable income), (2) premiums paid on officers' life insurance policies in which the company is the beneficiary (such premiums are not allowable expenses for determining taxable income but are expenses for determining pretax financial income), and (3) compensation expense associated with certain stock option plans. Item (3), like item (2), is an expense which is not deductible for tax purposes.

4. A temporary difference is a difference between the tax basis of an asset or liability and its reported (carrying or book) amount in the financial statements that will result in taxable amounts or deductible amounts in future years when the reported amount of the asset is recovered or when the reported amount of the liability is settled. The temporary differences discussed in this chapter all result from differences between taxable income and pretax financial income which will reverse and result in taxable or deductible amounts in future periods.

Examples of temporary differences are: (1) Gross profit or gain on installment sales reported for financial reporting purposes at the date of sale and reported in tax returns when later collected. (2) Depreciation for financial reporting purposes is less than that deducted in tax returns in early years of assets' lives because of using an accelerated method of depreciation for tax purposes. (3) Rent and royalties taxed when collected, but deferred for financial reporting purposes and recognized as revenue when earned in later periods.

5. An originating temporary difference is the initial difference between the book basis and the tax basis of an asset or liability. A reversing difference occurs when a temporary difference that originated in prior periods is eliminated and the related tax effect is removed from the tax account.

6. Book basis of assets	\$900,000
Tax basis of assets	<u>700,000</u>
Future taxable amounts	200,000
Tax rate	<u>34%</u>
Deferred tax liability (end of 2004)	<u>\$ 68,000</u>

Questions Chapter 19 (Continued)

7.	Book basis of asset	\$80,000	Deferred tax liability (end of 2004)	\$ 27,200
	Tax basis of asset	<u>0</u>	Deferred tax liability (beginning of 2004)	<u>68,000</u>
	Future taxable amounts	80,000	Deferred tax benefit for 2004	(40,800)
	Tax rate	<u>34%</u>	Income tax payable for 2004	<u>230,000</u>
	Deferred tax liability (end of 2004)	<u>\$27,200</u>	Total income tax expense for 2004	<u>\$189,200</u>

8. A future taxable amount will increase taxable income relative to pretax financial income in future periods due to temporary differences existing at the balance sheet date. A future deductible amount will decrease taxable income relative to pretax financial income in future periods due to existing temporary differences.

A deferred tax asset is recognized for all deductible temporary differences. However, a deferred tax asset should be reduced by a valuation account if, based on all available evidence, it is more likely than not that some portion or all of the deferred tax asset will not be realized. More likely than not means a level of likelihood that is at least slightly more than 50%.

9.	Taxable income	\$100,000	Future taxable amounts	\$90,000
	Tax rate	<u>40%</u>	Tax rate	<u>40%</u>
	Income tax payable	<u>\$ 40,000</u>	Deferred tax liability (end of 2004)	<u>\$36,000</u>
	Deferred tax liability (end of 2004)	\$ 36,000	Current tax expense	\$40,000
	Deferred tax liability (beginning of 2004)	<u>0</u>	Deferred tax expense	<u>36,000</u>
	Deferred tax expense for 2004	<u>\$ 36,000</u>	Income tax expense for 2004	<u>\$76,000</u>

10. Deferred tax accounts are reported on the balance sheet as assets and liabilities. They should be classified in a net current and a net noncurrent amount. An individual deferred tax liability or asset is classified as current or noncurrent based on the classification of the related asset or liability for financial reporting purposes. A deferred tax asset or liability is considered to be related to an asset or liability if reduction of the asset or liability will cause the temporary difference to reverse or turn around. A deferred tax liability or asset that is not related to an asset or liability for financial reporting purposes, including deferred tax assets related to loss carryforwards, shall be classified according to the expected reversal date of the temporary difference.
11. The balances in the deferred tax accounts should be analyzed and classified on the balance sheet in two categories: one for the **net** current amount, and one for the **net** noncurrent amount. This procedure is summarized as indicated below.
1. Classify the amounts as current or noncurrent. If an amount is related to a specific asset or liability, it should be classified in the same manner as the related asset or liability. If not so related, it should be classified on the basis of the expected reversal date.
 2. Determine the net current amount by summing the various deferred tax assets and liabilities classified as current. If the net result is an asset, report on the balance sheet as a current asset; if it is a liability, report as a current liability.
 3. Determine the net noncurrent amount by summing the various deferred tax assets and liabilities classified as noncurrent. If the net result is an asset, report on the balance sheet as a noncurrent asset ("other assets" section); if it is a liability, report as a long-term liability.
12. A deferred tax asset or liability is considered to be related to an asset or liability if reduction of the asset or liability will cause the temporary difference to reverse or turn around.

Questions Chapter 19 (Continued)

13.	Pretax financial income	\$550,000
	Interest income on municipal bonds	(70,000)
	Hazardous waste fine	30,000
	Depreciation (\$60,000 – \$45,000)	<u>15,000</u>
	Taxable income	525,000
	Tax rate	<u>30%</u>
	Income tax payable	<u>\$157,500</u>

14. \$200,000 (2007 taxable amount)
 5% (30% – 25%)
\$ 10,000 Decrease in deferred tax liability at the end of 2004

Deferred Tax Liability.....	10,000	
Income Tax Expense		10,000

15. Some of the reasons for requiring these disclosures are:
- (a) Assessment of the quality of earnings. Many investors seeking to assess the quality of a company's earnings are interested in the reconciliation of pretax financial income to taxable income. Earnings that are enhanced by a favorable tax effect should be examined carefully, particularly if the tax effect is nonrecurring.
 - (b) Better prediction of future cash flows. Examination of the deferred portion of income tax expense provides information as to whether taxes payable are likely to be higher or lower in the future.

16. The carryback provision permits a company to carry a net operating loss back two years and receive refunds for income taxes paid in those years. The loss must be applied to the second preceding year first and then to the preceding year.

The carryforward provision permits a company to carry forward a net operating loss twenty years, offsetting future taxable income. The loss carryback can be accounted for with more certainty because the company knows whether it had taxable income in the past; such is not the case with income in the future.

17. The company may choose to carry the net operating loss forward, or carry it back and then forward for tax purposes. To forego the two-year carryback might be advantageous where a taxpayer had tax credit carryovers that might be wiped out and lost because of the carryback of the net operating loss. In addition, tax rates in the future might be higher, and therefore on a present value basis, it is advantageous to carry forward rather than carry back.

For financial reporting purposes, the benefits of a net operating loss carryback are recognized in the loss year. The benefits of an operating loss carryforward are recognized as a deferred tax asset in the loss year. If it is more likely than not that the asset will be realized, the tax benefit of the loss is also recognized by a credit to Income Tax Expense on the income statement. Conversely, if it is more likely than not that the loss carryforward will not be realized in future years, then an allowance account is established in the loss year and no tax benefit is recognized on the income statement of the loss year.

18. Many believe that future deductible amounts arising from net operating loss carryforwards are different from future deductible amounts arising from normal operations. One rationale provided is that a deferred tax asset arising from normal operations results in a tax prepayment—a prepaid tax asset. In the case of loss carryforwards, no tax prepayment has been made.

Others argue that realization of a loss carryforward is less likely—and thus should require a more severe test—than for a net deductible amount arising from normal operations. Some have suggested that the test be changed from “more likely than not” to “probable” realization. Others have indicated that because of the nature of net operating losses, deferred tax assets should never be established for these items.

SOLUTIONS TO BRIEF EXERCISES

BRIEF EXERCISE 19-1

2004 taxable income	\$110,000
Tax rate	X 40%
12/31/04 income taxes payable	<u>\$ 44,000</u>

BRIEF EXERCISE 19-2

Excess depreciation on tax return	\$30,000
Tax rate	<u>30%</u>
Deferred tax liability	<u>\$9,000</u>

BRIEF EXERCISE 19-3

Income tax expense	\$67,500***	
Deferred tax liability		9,000**
Income tax payable		58,500*

*\$195,000 x 30% = \$58,500

**\$30,000 x 30% = \$9,000

***\$58,500 + \$9,000 = \$67,500

The \$9,000 deferred tax liability should be classified as a noncurrent liability. The balances in the deferred tax accounts should be classified in the same manner as the related asset. Since property, plant, and equipment is a noncurrent asset, noncurrent liability is the proper classification for the deferred tax liability.

BRIEF EXERCISE 19-4

Deferred tax liability, 12/31/04	\$42,000
Deferred tax liability, 12/31/03	<u>25,000</u>
Deferred tax expense for 2004	17,000
Current tax expense for 2004	<u>43,000</u>
Total tax expense for 2004	<u>\$60,000</u>

BRIEF EXERCISE 19-5

Book value of warranty liability	\$125,000
Tax basis of warranty liability	<u>0</u>
Cumulative temporary difference at 12/31/04	125,000
Tax rate	X 40%
12/31/04 deferred tax asset	<u>\$ 50,000</u>

BRIEF EXERCISE 19-6

Deferred tax asset, 12/31/04	\$59,000
Deferred tax asset, 12/31/03	<u>35,000</u>
Deferred tax benefit for 2004	(24,000)
Current tax expense for 2004	<u>61,000</u>
Total tax expense for 2004	<u>\$37,000</u>

BRIEF EXERCISE 19-7

Income Tax Expense.....	80,000	
Allowance to Reduce Deferred Tax Asset to Expected Realizable Value.....		80,000

BRIEF EXERCISE 19-8

Income before income taxes		\$175,000
Income tax expense		
Current	\$40,000	
Deferred	<u>30,000</u>	<u>70,000</u>
Net income		<u>\$105,000</u>

BRIEF EXERCISE 19-9

Income Tax Expense.....	71,100	
Income Tax Payable (\$144,000* X 45%)		64,800
Deferred Tax Liability (\$14,000 X 45%).....		6,300
*\$154,000 + \$4,000 - \$14,000 = \$144,000		

BRIEF EXERCISE 19-10

Year	Future taxable amount	X	Rate	=	Deferred tax liability
2005	\$ 42,000		34%		\$ 14,280
2006	294,000		34%		99,960
2007	294,000		40%		<u>117,600</u>
					<u>\$231,840</u>

BRIEF EXERCISE 19-11

Income Tax Expense	80,000	
Deferred Tax Liability (\$2,000,000 X 4%)		80,000

BRIEF EXERCISE 19-12

Income Tax Refund Receivable	135,000	
Benefit Due to Loss Carryback		135,000
\$97,500 + [(\$450,000–\$325,000) X 30%]		

BRIEF EXERCISE 19-13

Income Tax Refund Receivable (\$400,000 X .40)	160,000	
Benefit Due to Loss Carryback		160,000
Deferred Tax Asset (\$500,000 – \$400,000) X .40	40,000	
Benefit Due to Loss Carryforward		40,000

BRIEF EXERCISE 19-14

Income Tax Refund Receivable (\$400,000 X .40)	160,000	
Benefit Due to Loss Carryback		160,000
Deferred Tax Asset (\$500,000 – \$400,000) X .40	40,000	
Benefit Due to Loss Carryforward		40,000
Benefit Due to Loss Carryforward	40,000	
Allowance to Reduce Deferred Tax Asset to Expected Realizable Value		40,000

BRIEF EXERCISE 19-15

Current assets

Deferred tax asset (\$52,000 – \$38,000)	\$14,000
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Long-term liabilities

Deferred tax liability (\$96,000 – \$27,000)	\$69,000
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SOLUTIONS TO EXERCISES

EXERCISE 19-1 (15-20 minutes)

(a)	Pretax financial income for 2004	\$300,000
	Temporary difference resulting in future taxable amounts in 2005	(55,000)
	in 2006	(60,000)
	in 2007	<u>(65,000)</u>
	Taxable income for 2004	<u>\$120,000</u>
	 Taxable income for 2004	 \$120,000
	Enacted tax rate	<u>30%</u>
	Income tax payable for 2004	<u>\$ 36,000</u>

(b)	Future Years				
		2005	2006	2007	Total
	Future taxable (deductible) amounts	\$55,000	\$60,000	\$65,000	<u>\$180,000</u>
	Tax rate	<u>30%</u>	<u>30%</u>	<u>30%</u>	
	Deferred tax liability (asset)	<u>\$16,500</u>	<u>\$18,000</u>	<u>\$19,500</u>	<u>\$ 54,000</u>

	Deferred tax liability at the end of 2004	\$54,000
	Deferred tax liability at the beginning of 2004	<u>0</u>
	Deferred tax expense for 2004 (increase in deferred tax liability)	54,000
	Current tax expense for 2004 (Income tax payable)	<u>36,000</u>
	Income tax expense for 2004	<u>\$90,000</u>

	Income Tax Expense	90,000
	Income Tax Payable	36,000
	Deferred Tax Liability	54,000

(c)	Income before income taxes	\$300,000
	Income tax expense	
	Current	\$36,000
	Deferred	<u>54,000</u>
	Net income	<u>\$210,000</u>

EXERCISE 19-2 (15-20 minutes)

(a) Pretax financial income for 2003	\$300,000
Excess of tax depreciation over book depreciation	(40,000)
Rent received in advance	<u>20,000</u>
Taxable income	<u>\$280,000</u>

(b) Income Tax Expense (\$300,000 X .40).....	120,000	
Deferred Tax Asset.....	8,000	
Income Tax Payable (\$280,000 X .40)		112,000
Deferred Tax Liability		16,000

Temporary Difference	Future Taxable (Deductible) Amounts	Tax Rate	Deferred Tax	
			(Asset)	Liability
Depreciation	\$40,000	40%		\$16,000
Unearned rent	(20,000)	40%	\$(8,000)	
			\$(8,000)	\$16,000

(c) Income Tax Expense.....	134,000*	
Deferred Tax Liability (\$10,000 X .40).....	4,000	
Income Tax Payable (\$325,000 X .40)		130,000
Deferred Tax Asset.....		8,000

*(\$130,000 – \$4,000 + \$8,000)

EXERCISE 19-3 (15-20 minutes)

(a) Taxable income for 2004	\$405,000
Enacted tax rate	40%
Income tax payable for 2004	<u>\$162,000</u>

	Future Years		
	2005	2006	Total
Future taxable (deductible) amounts	\$175,000	\$175,000	<u>\$350,000</u>
Tax Rate	<u>40%</u>	<u>40%</u>	
Deferred tax liability (asset)	<u>\$ 70,000</u>	<u>\$ 70,000</u>	<u>\$140,000</u>

EXERCISE 19-3 (Continued)

Deferred tax liability at the end of 2004		\$140,000
Deferred tax liability at the beginning of 2004		<u>92,000</u>
Deferred tax expense for 2004 (increase required in deferred tax liability)		48,000
Current tax expense for 2004		<u>162,000</u>
Income tax expense for 2004		<u>\$210,000</u>
Income Tax Expense	210,000	
Income Tax Payable		162,000
Deferred Tax Liability		48,000
(c) Income before income taxes		\$525,000
Income tax expense		
Current	\$162,000	
Deferred	<u>48,000</u>	<u>210,000</u>
Net income		<u>\$315,000</u>

Note to instructor: Because of the flat tax rate for all years, the amount of cumulative temporary difference existing at the beginning of the year can be calculated by dividing \$92,000 by 40%, which equals \$230,000. The difference between the \$230,000 cumulative temporary difference at the beginning of 2004 and the \$350,000 cumulative temporary difference at the end of 2004 represents the net amount of temporary difference originating during 2004 (which is \$120,000). With this information, we can reconcile pretax financial income with taxable income as follows:

Pretax financial income	\$525,000
Temporary difference originating giving rise to net future taxable amounts	<u>(120,000)</u>
Taxable income	<u>\$405,000</u>

EXERCISE 19-4 (15-20 minutes)

(a) Pretax financial income for 2004	\$70,000
Excess depreciation per tax return	(16,000)
Excess rent collected over rent earned	22,000
Nondeductible fines	<u>11,000</u>
Taxable income	<u>\$87,000</u>
Taxable income	\$87,000
Enacted tax rate	<u>30%</u>
Income tax payable	<u>\$26,100</u>

EXERCISE 19-4 (Continued)

(b) Income Tax Expense.....	24,300	
Deferred Tax Asset.....	6,600	
Income Tax Payable		26,100
Deferred Tax Liability		4,800

Temporary Difference	Future Taxable (Deductible) Amounts	Tax Rate	Deferred Tax	
			(Asset)	Liability
Depreciation	\$16,000	30%		\$4,800
Unearned rent	<u>(22,000)</u>	30%	<u>\$(6,600)</u>	
Totals	<u>\$ (6,000)</u>		<u>\$(6,600)</u>	<u>\$4,800*</u>

*Because of a flat tax rate, these totals can be reconciled:
 $\$(6,000) \times 30\% = \$(6,600) + \$4,800.$

Deferred tax liability at the end of 2004	\$4,800
Deferred tax liability at the beginning of 2004	<u>0</u>
Deferred tax expense for 2004 (increase required in deferred tax liability)	<u>\$4,800</u>
Deferred tax asset at the end of 2004	\$ 6,600
Deferred tax asset at the beginning of 2004	<u>0</u>
Deferred tax benefit for 2004 (increase required in deferred tax asset)	<u>\$(6,600)</u>
Deferred tax expense for 2004	\$ 4,800
Deferred tax benefit for 2004	<u>(6,600)</u>
Net deferred tax benefit for 2004	(1,800)
Current tax expense for 2004 (Income tax payable)	<u>26,100</u>
Income tax expense for 2004	<u>\$24,300</u>

(c) Income before income taxes		\$70,000
Income tax expense		
Current	\$26,100	
Deferred	<u>(1,800)</u>	<u>24,300</u>
Net income		<u>\$45,700</u>

(d) $\frac{\$24,300}{\$70,000} = 34.7\%$ effective tax rate for 2004.

EXERCISE 19-5 (15-20 minutes)

(a) Taxable income	\$95,000
Enacted tax rate	<u>40%</u>
Income tax payable	<u>\$38,000</u>

(b) Income Tax Expense	80,000	
Deferred Tax Asset	14,000	
Income Tax Payable		38,000
Deferred Tax Liability		56,000

Temporary Difference	Future Taxable (Deductible) Amounts	Tax Rate	Deferred Tax	
			(Asset)	Liability
First one	\$240,000	40%		\$96,000
Second one	<u>(35,000)</u>	40%	\$(14,000)	
Totals	<u>\$205,000</u>		<u>\$(14,000)</u>	<u>\$96,000</u>

*Because of a flat tax rate, these totals can be reconciled:

$$\$205,000 \times 40\% = \$(14,000) + \$96,000.$$

Deferred tax liability at the end of 2004	\$96,000
Deferred tax liability at the beginning of 2004	<u>40,000</u>
Deferred tax expense for 2004 (increase required in deferred tax liability)	<u>\$56,000</u>

Deferred tax asset at the end of 2004	\$ 14,000
Deferred tax asset at the beginning of 2004	<u>0</u>
Deferred tax benefit for 2004 (increase required in deferred tax asset)	<u>\$(14,000)</u>

Deferred tax expense for 2004	\$56,000
Deferred tax benefit for 2004	<u>(14,000)</u>
Net deferred tax benefit for 2004	42,000
Current tax expense for 2004 (Income tax payable)	<u>38,000</u>
Income tax expense for 2004	<u>\$80,000</u>

(c) Income before income taxes		\$200,000
Income tax expense		
Current	\$38,000	
Deferred	<u>42,000</u>	<u>80,000</u>
Net income		<u>\$120,000</u>

EXERCISE 19-5 (Continued)

Note to instructor: Because of the flat tax rate for all years, the amount of cumulative temporary difference existing at the beginning of the year can be calculated by dividing the \$40,000 balance in Deferred Tax Liability by 40%, which equals \$100,000. This information may now be combined with the other facts given in the exercise to reconcile pretax financial income with taxable income as follows:

Pretax financial income	\$200,000
Net originating temporary difference giving rise to future taxable amounts (\$240,000 – \$100,000)	(140,000)
Originating temporary differences giving rise to future deductible amounts	<u>35,000</u>
Taxable income	<u>\$ 95,000</u>

EXERCISE 19-6 (10-15 minutes)

- | | |
|---------|----------|
| (a) (2) | (f) (2) |
| (b) (1) | (g) (3) |
| (c) (3) | (h) (3) |
| (d) (1) | (i) (3)* |
| (e) (2) | (j) (1) |

*When the cost method is used for financial reporting purposes, the dividends are recognized in the income statement in the period they are received, which is the same period they be must be reported on the tax return. However, depending on the level of ownership by the investor, 70% or 80% of the dividends received from other U.S. corporations may be excluded from taxation because of a “dividends received deduction.” These tax-exempt dividends create a permanent difference.

EXERCISE 19-7 (10-15 minutes)

- (a) greater than
- (b) \$190,000 = (\$76,000 divided by 40%)
- (c) are not
- (d) less than
- (e) benefit; \$15,000
- (f) \$3,500 = [(\$100,000 X 40%) – \$36,500]
- (g) debit
- (h) \$59,000 = (\$82,000 – \$23,000)
- (i) more likely than not; will not be
- (j) benefit

EXERCISE 19-8 (10-15 minutes)

(a)

2004

Income Tax Expense	336,000	
Deferred Tax Asset (\$20,000 x 40%)	8,000	
Deferred Tax Liability (\$30,000 x 40%)		12,000
Income Tax Payable (\$830,000 x 40%)		332,000

2005

Income Tax Expense	364,000	
Deferred Tax Asset (\$10,000 x 40%)	4,000	
Deferred Tax Liability (\$40,000 x 40%)		16,000
Income Tax Payable (\$880,000 x 40%)		352,000

2006

Income Tax Expense	378,000	
Deferred Tax Asset (\$8,000 x 40%)	3,200	
Deferred Tax Liability (\$10,000 x 40%)		4,000
Income Tax Payable (\$943,000 x 40%)		377,200

(b)

Current assets		
Deferred tax asset (\$8,000 + \$4,000 + \$3,200)		\$15,200
Long-term liabilities		
Deferred tax liability (\$12,000 + \$16,000 + \$4,000)		\$32,000

The warranty is classified as current because settlement is within one year.

The deferred tax liability is noncurrent because the related asset is noncurrent.

(c)

Pretax financial income		\$945,000
Income tax expense		
Current	\$377,200	
Deferred (\$10,000 – \$8,000) X .40	<u>800</u>	<u>378,000</u>
Net Income		<u>\$567,000</u>

EXERCISE 19-9 (15-20 minutes)

	2001		
Income Tax Expense.....		32,000	
Income Tax Payable (\$80,000 X 40%).....			32,000
	2002		
Income Tax Refund Receivable		72,000	
(\$160,000 X 45%)			
Benefit Due to Loss Carryback (Income Tax Expense)			72,000
	2003		
Income Tax Refund Receivable		32,000	
Benefit Due to Loss Carryback (Income Tax Expense)			32,000
(\$80,000 X 40%)			
	2003		
Deferred Tax Asset		120,000	
Benefit Due to Loss Carryforward (Income Tax Expense)			120,000
[40% X (\$380,000 – \$80,000)]			
	2004		
Income Tax Expense.....		48,000	
Deferred Tax Asset (40% X \$120,000)			48,000
	2005		
Income Tax Expense.....		40,000	
Deferred Tax Asset (\$100,000 X 40%)			40,000

Note: Benefit Due to Loss Carryback and Benefit Due to Loss Carryforward amounts are negative components of income tax expense.

EXERCISE 19-10 (20-25 minutes)

(a) Income Tax Refund Receivable—1998.....	5,950	
(\$17,000 X 35%)		
Income Tax Refund Receivable—1999.....	24,000	
(\$48,000 X 50%)		
Benefit Due to Loss Carryback.....		29,950

EXERCISE 19-10 (Continued)

Note: An acceptable alternative is to record only one Income Tax Refund Receivable account for the amount of \$29,950.

Deferred Tax Asset.....	34,000	
Benefit Due to Loss Carryforward		34,000
(\$150,000 – \$17,000 – \$48,000 = \$85,000)		
(\$85,000 X 40% = \$34,000)		
 (b) Operating loss before income taxes		\$(150,000)
Income tax benefit		
Benefit due to loss carryback	\$29,950	
Benefit due to loss carryforward	<u>34,000</u>	<u>63,950</u>
Net loss		<u>\$ (86,050)</u>
 (c) Income Tax Expense	36,000	
Deferred Tax Asset		34,000
Income Tax Payable		2,000
[40% X (\$90,000 – \$85,000)]		
 (d) Income before income taxes		\$90,000
Income tax expense		
Current	\$ 2,000	
Deferred	<u>34,000</u>	<u>36,000</u>
Net income		<u>\$54,000</u>
 (e) Income Tax Refund Receivable—2002.....	12,000	
(\$30,000 X 40%)		
Income Tax Refund Receivable—2003.....	12,000	
(\$30,000 X 40%)		
Benefit Due to Loss Carryback		24,000

Note: An acceptable alternative is to record only one Income Tax Refund Receivable account for the amount of \$24,000.

(f) Operating loss before income taxes		\$(60,000)
Income tax benefit		
Benefit due to loss carryback		<u>24,000</u>
Net loss		<u>\$(36,000)</u>

EXERCISE 19-11 (10-15 minutes)

Temporary Difference	Resulting Deferred Tax		Related Balance Sheet	
	(Asset)	Liability	Account	Classification
Depreciation		\$200,000	Plant Assets	Noncurrent
Lawsuit obligation	\$(50,000)		Lawsuit Obligation	Current
Installment sale		48,000*	Installment Receivable	Current
Installment sale		<u>177,000**</u>	Installment Receivable	Noncurrent
Totals	<u>\$(50,000)</u>	<u>\$425,000</u>		

*\$120,000 X 40% = \$48,000

**\$225,000 – \$48,000 = \$177,000

Current assets

Deferred tax asset (\$50,000 – \$48,000) \$ 2,000

Long-term liabilities

Deferred tax liability (\$200,000 + \$177,000) 377,000

EXERCISE 19-12 (20-25 minutes)

- (a) To complete a reconciliation of pretax financial income and taxable income, solving for the amount of pretax financial income, we must first determine the amount of temporary differences arising or reversing during the year. To accomplish that, we must determine the amount of cumulative temporary differences underlying the beginning balances of the deferred tax liability of \$60,000 and the deferred tax asset of \$20,000.

\$60,000 ÷ 40% = \$150,000 beginning cumulative temporary difference.

\$20,000 ÷ 40% = \$ 50,000 beginning cumulative temporary difference.

Cumulative temporary difference at 12/31/04	
which will result in future taxable amounts	\$230,000
Cumulative temporary difference at 1/1/04	
which will result in future taxable amounts	<u>150,000</u>
Originating difference in 2004 which will	
result in future taxable amounts	<u>\$ 80,000</u>

EXERCISE 19-12 (Continued)

Cumulative temporary difference at 12/31/04 which will result in future deductible amounts	\$ 95,000
Cumulative temporary difference at 1/1/04 which will result in future deductible amounts	<u>50,000</u>
Originating difference in 2004 which will result in future deductible amounts	<u>\$ 45,000</u>
Pretax financial income	\$ X
Originating difference which will result in future taxable amounts	(80,000)
Originating difference which will result in future deductible amounts	<u>45,000</u>
Taxable income for 2004	<u>\$105,000</u>

Solving for pretax financial income:
 $X - \$80,000 + \$45,000 = \$105,000$
 $X = \$140,000 = \text{Pretax financial income}$

(b) Income Tax Expense	56,000	
Deferred Tax Asset	18,000	
Income Tax Payable		42,000
(\$105,000 X 40%)		
Deferred Tax Liability		32,000

Temporary Difference	Future Taxable (Deductible) Amounts	Tax Rate	Deferred Tax	
			(Asset)	Liability
First one	\$230,000	40%		\$92,000
Second one	<u>(95,000)</u>	40%	\$(38,000)	
Totals	<u>\$135,000</u>		<u>\$(38,000)</u>	<u>\$92,000*</u>

*Because of a flat tax rate, these totals can now be reconciled:
 $\$135,000 \times 40\% = \$(38,000) + \$92,000.$

Deferred tax liability at the end of 2004	\$92,000
Deferred tax liability at the beginning of 2004	<u>60,000</u>
Deferred tax expense for 2004 (net increase required in deferred tax liability)	<u>\$32,000</u>

EXERCISE 19-12 (Continued)

Deferred tax asset at the end of 2004	\$ 38,000
Deferred tax asset at the beginning of 2004	<u>20,000</u>
Deferred tax benefit for 2004 (net increase required in deferred tax asset)	<u>\$(18,000)</u>
Deferred tax expense for 2004	\$32,000
Deferred tax benefit for 2004	<u>(18,000)</u>
Net deferred tax expense (benefit) for 2004	14,000
Current tax expense for 2004 (Income tax payable)	<u>42,000</u>
Income tax expense for 2004	<u>\$56,000</u>

(c) Income before income taxes	\$140,000
Income tax expense	
Current	\$42,000
Deferred	<u>14,000</u>
Net income	<u>\$ 84,000</u>

(d) Because of the flat tax rate for all years involved and no permanent differences, the effective rate should equal the statutory rate. The following calculation proves that it does: $\$56,000 \div \$140,000 = 40\%$ effective tax rate for 2004.

EXERCISE 19-13 (20-25 minutes)

(a) Income Tax Expense.....	178,500	
Income Tax Payable		128,000
Deferred Tax Liability		50,500
Taxable income for 2003		\$320,000
Enacted tax rate		<u>40%</u>
Income tax payable for 2003		<u>\$128,000</u>

	Future Years				Total
	2004	2005	2006	2007	
Future taxable (deductible) amounts	\$60,000	\$50,000	\$40,000	\$30,000	<u>\$180,000</u>
Enacted tax rate	<u>30%</u>	<u>30%</u>	<u>25%</u>	<u>25%</u>	
Deferred tax liability (asset)	<u>\$18,000</u>	<u>\$15,000</u>	<u>\$10,000</u>	<u>\$ 7,500</u>	<u>\$ 50,500</u>

EXERCISE 19-13 (Continued)

Deferred tax liability at the end of 2003	\$ 50,500
Deferred tax liability at the beginning of 2003	<u>0</u>
Deferred tax expense for 2003 (net increase required in deferred tax liability)	50,500
Current tax expense for 2003	<u>128,000</u>
Income tax expense for 2003	<u>\$178,500</u>

(b) Income Tax Expense	156,500	
Income Tax Payable		128,000
Deferred Tax Liability		28,500

The income tax payable for 2003 of \$128,000 and the \$50,500 balance for Deferred Tax Liability at December 31, 2003, would be computed the same as they were for part (a) of this exercise. The resulting change in the deferred tax liability and total income tax expense would be computed as follows:

Deferred tax liability at the end of 2003	\$ 50,500
Deferred tax liability at the beginning of 2003	<u>22,000</u>
Deferred tax expense for 2003 (net increase required in deferred tax liability)	28,500
Current tax expense for 2003 (Income tax payable)	<u>128,000</u>
Income tax expense for 2003	<u>\$156,500</u>

EXERCISE 19-14 (20-25 minutes)

(a) Income Tax Expense	298,000	
Deferred Tax Asset	30,000	
Income Tax Payable		328,000
 Taxable income		\$820,000
Enacted tax rate		<u>40%</u>
Income tax payable		<u>\$328,000</u>

Date	Cumulative Future Taxable (Deductible) Amounts	Tax Rate	Deferred Tax	
			(Asset)	Liability
12/31/04	\$(450,000)	40%	<u>\$(180,000)</u>	

EXERCISE 19-14 (Continued)

Deferred tax asset at the end of 2004	\$180,000
Deferred tax asset at the beginning of 2004	<u>150,000</u>
Deferred tax benefit for 2004 (increase in deferred tax asset account)	(30,000)
Current tax expense for 2004 (Income tax payable)	<u>328,000</u>
Income tax expense for 2004	<u>\$298,000</u>

(b) The journal entry at the end of 2004 to establish a valuation account:

Income Tax Expense.....	30,000	
Allowance to Reduce Deferred Tax Asset to Expected Realizable Value.....		30,000

Note to instructor: Although not requested by the instructions, the pretax financial income can be computed by completing the following reconciliation:

Pretax financial income for 2004	\$	X
Originating difference which will result in future deductible amounts		<u>75,000^a</u>
Taxable income for 2004		<u>\$820,000</u>

Solving for pretax financial income:
 $X + \$75,000 = \$820,000$
 $X = \$745,000 = \text{Pretax financial income}$

^a $\$450,000 - \$375,000 = \$75,000$

EXERCISE 19-15 (20-25 minutes)

(a) Income Tax Expense.....	298,000	
Deferred Tax Asset.....	30,000	
Income Tax Payable		328,000
Allowance to Reduce Deferred Tax Asset to Expected Realizable Value.....	45,000	
Income Tax Expense		45,000
Taxable income		\$820,000
Enacted tax rate		<u>40%</u>
Income tax payable		<u>\$328,000</u>

EXERCISE 19-15 (Continued)

Date	Cumulative Future Taxable (Deductible) Amounts	Tax Rate	Deferred Tax	
			(Asset)	Liability
12/31/04	\$(450,000)	40%	<u>\$(180,000)</u>	
Deferred tax asset at the end of 2004				\$180,000
Deferred tax asset at the beginning of 2004				<u>150,000</u>
Deferred tax benefit for 2004 (increase in deferred tax asset account)				(30,000)
Current tax expense for 2004 (Income tax payable)				<u>328,000</u>
Income tax expense for 2004				<u>\$298,000</u>
Valuation account needed at the end of 2004				\$ 0
Valuation account balance at the beginning of 2004				<u>45,000</u>
Reduction in valuation account during 2004				<u>\$45,000</u>
(b)				
Income Tax Expense			298,000	
Deferred Tax Asset			30,000	
Income Tax Payable				328,000
Income Tax Expense			135,000	
Allowance to Reduce Deferred Tax Asset to Expected Realizable Value				135,000
Taxable income				\$820,000
Enacted tax rate				<u>40%</u>
Income tax payable				<u>\$328,000</u>

Date	Cumulative Future Taxable (Deductible) Amounts	Tax Rate	Deferred Tax	
			(Asset)	Liability
12/31/04	\$(450,000)	40%	<u>\$(180,000)</u>	
Deferred tax asset at the end of 2004				\$180,000
Deferred tax asset at the beginning of 2004				<u>150,000</u>
Deferred tax benefit for 2004 (increase in deferred tax asset account)				(30,000)
Current tax expense for 2004 (Income tax payable)				<u>328,000</u>
Income tax expense for 2004				<u>\$298,000</u>

EXERCISE 19-15 (Continued)

Valuation account needed at the end of 2004	\$180,000
Valuation account balance at the beginning of 2004	<u>45,000</u>
Increase in valuation account during 2004	<u>\$135,000</u>

Note to instructor: Although not requested by the instructions, the pretax financial income can be computed by completing the following reconciliation:

Pretax financial income for 2004	\$ X
Originating difference which will result in future deductible amounts	<u>75,000^a</u>
Taxable income for 2004	<u>\$820,000</u>

Solving for pretax financial income:

$$X + \$75,000 = \$820,000$$

$$X = \$745,000 = \text{Pretax financial income}$$

$$^a\$450,000 - \$375,000 = \$75,000.$$

EXERCISE 19-16 (15-20 minutes)

(a)

	Future Years		Total
	2004	2005	
Future taxable (deductible) amounts	\$1,500,000	\$1,500,000	<u>\$3,000,000</u>
Tax rate	<u>40%*</u>	<u>34%</u>	
Deferred tax liability (asset)	<u>\$ 600,000</u>	<u>\$ 510,000</u>	<u>\$1,110,000</u>

*The prior tax rate of 40% is computed by dividing the \$1,200,000 balance of the deferred tax liability account at January 1, 2003, by the \$3,000,000 cumulative temporary difference at that same date.

Resulting Deferred Tax (Asset)	Liability	Related Balance Sheet Account	Classification
	\$600,000	Installment Receivable	Current
	\$510,000	Installment Receivable	Noncurrent*

EXERCISE 19-16 (Continued)

***One-half of the installment receivable is classified as a current asset and one-half is noncurrent. Therefore, the deferred tax liability related to the portion of the receivable coming due in 2004 is current and the deferred tax liability balance related to the portion of the receivable coming due in 2005 is noncurrent.**

(b) Deferred Tax Liability	90,000	
Income Tax Expense		90,000

There are no changes during 2003 in the cumulative temporary difference. The entire change in the deferred tax liability account is due to the change in the enacted tax rate. That change is computed as follows:

Deferred tax liability at the end of 2003 (computed in (a))		\$1,110,000
Deferred tax liability at the beginning of 2003		<u>1,200,000</u>
Deferred tax benefit for 2003 due to change in enacted tax rate (decrease in deferred tax liability required)		<u>\$ (90,000)</u>
(c) Income before income taxes		\$5,000,000*
Income tax expense		
Current	\$2,000,000**	
Adjustment due to change in tax rate	<u>(90,000)</u>	<u>1,910,000</u>
Net income		<u>\$3,090,000</u>

***Pretax financial income is equal to the taxable income for 2003 because there were no changes in the cumulative temporary difference and no permanent differences.**

**Taxable income for 2003	\$5,000,000
Tax rate for 2003 (computed in (a))	<u>40%</u>
Current tax expense	<u>\$2,000,000</u>

Current tax expense for 2003 would also need to be recorded. The entry would be a debit to Income Tax Expense and a credit to Income Tax Payable for \$2,000,000.

EXERCISE 19-17 (30-35 minutes)

Journal entry at December 31, 2003:

Income Tax Expense.....	67,900	
Deferred Tax Asset.....	4,500	
Income Tax Payable		65,200
Deferred Tax Liability		7,200
Taxable income for 2003		\$163,000
Enacted tax rate		<u>40%</u>
Income tax payable for 2003		<u>\$ 65,200</u>

The deferred tax account balances at December 31, 2003, are determined as follows:

Temporary Difference	Future Taxable (Deductible) Amounts	Rate	Deferred Tax	
			(Asset)	Liability
Installment sales	\$16,000	45%		\$7,200
Warranty costs	<u>(10,000)</u>	45%	<u>\$(4,500)</u>	
Totals	<u>\$ 6,000</u>		<u>\$(4,500)</u>	<u>\$7,200*</u>

*Because all deferred taxes were computed at the same rate, these totals can be reconciled as follows: $\$6,000 \times 45\% = \$(4,500) + \$7,200$.

Deferred tax liability at the end of 2003	\$7,200
Deferred tax liability at the beginning of 2003	<u>0</u>
Deferred tax expense for 2003 (net increase required in deferred tax liability)	<u>\$7,200</u>
Deferred tax asset at the end of 2003	\$ 4,500
Deferred tax asset at the beginning of 2003	<u>0</u>
Deferred tax expense (benefit) for 2003 (net increase required in deferred tax asset)	<u>\$(4,500)</u>
Deferred tax expense for 2003	\$ 7,200
Deferred tax benefit for 2003	<u>(4,500)</u>
Net deferred tax expense for 2003	2,700
Current tax expense for 2003 (Income tax payable)	<u>65,200</u>
Income tax expense for 2003	<u>\$67,900</u>

EXERCISE 19-17 (Continued)

Journal entry at December 31, 2004:

Income Tax Expense	94,500	
Deferred Tax Liability	3,600	
Income Tax Payable		95,850
Deferred Tax Asset		2,250
Taxable income		\$213,000
Enacted tax rate		<u>45%</u>
Income tax payable for 2004		<u>\$ 95,850</u>

The deferred tax account balances at December 31, 2004, are determined as follows:

Temporary Difference	Future Taxable (Deductible) Amounts	Rate	Deferred Tax	
			(Asset)	Liability
Installment sales	\$8,000	45%		\$3,600
Warranty costs	(5,000)	45%	\$(2,250)	
Totals	<u>\$3,000</u>		<u>\$(2,250)</u>	<u>\$3,600*</u>

*Because all deferred taxes were computed at the same rate, these totals can be reconciled as follows: $\$3,000 \times 45\% = \$(2,250) + \$3,600$.

Deferred tax liability at the end of 2004	\$ 3,600
Deferred tax liability at the beginning of 2004	<u>7,200</u>
Deferred tax benefit for 2004 (decrease required in deferred tax liability)	<u>\$(3,600)</u>
Deferred tax asset at the end of 2004	\$2,250
Deferred tax asset at the beginning of 2004	<u>4,500</u>
Deferred tax expense for 2004 (decrease required in deferred tax asset)	<u>\$2,250</u>
Deferred tax benefit for 2004	\$ (3,600)
Deferred tax expense for 2004	<u>2,250</u>
Net deferred tax benefit for 2004	(1,350)
Current tax expense for 2004	<u>95,850</u>
Income tax expense for 2004	<u>\$94,500</u>

EXERCISE 19-17 (Continued)

Journal entry at December 31, 2005:

Income Tax Expense.....	40,500	
Deferred Tax Liability.....	3,600	
Income Tax Payable		41,850
Deferred Tax Asset.....		2,250

Taxable income for 2005	\$93,000
Enacted tax rate	<u>45%</u>
Income tax payable for 2005	<u>\$41,850</u>

Deferred tax liability at the end of 2005	\$ 0
Deferred tax liability at the beginning of 2005	<u>3,600</u>
Deferred tax benefit for 2005 (decrease required in deferred tax liability)	<u>\$(3,600)</u>

Deferred tax asset at the end of 2005	\$ 0
Deferred tax asset at the beginning of 2005	<u>2,250</u>
Deferred tax expense for 2005 (decrease required in deferred tax asset)	<u>\$2,250</u>

Deferred tax benefit for 2005	\$ (3,600)
Deferred tax expense for 2005	<u>2,250</u>
Net deferred tax benefit for 2005	(1,350)
Current tax expense for 2005	<u>41,850</u>
Income tax expense for 2005	<u>\$40,500</u>

EXERCISE 19-18 (20-25 minutes)

	Temporary Difference	Future Taxable (Deductible) Amounts	Tax Rate	December 31, 2004	
				Deferred Tax (Asset)	Liability
Installment sales		\$ 96,000	40%		\$38,400
Depreciation		30,000	40%		12,000
Unearned rent		<u>(100,000)</u>	40%	<u>\$(40,000)</u>	
Totals		<u>\$ 26,000</u>		<u>\$(40,000)*</u>	<u>\$50,400*</u>

*Because of a flat tax rate, these totals can be reconciled:
 $\$26,000 \times 40\% = \$(40,000) + \$50,400.$

EXERCISE 19-18 (Continued)

(b) Pretax financial income for 2004		\$250,000
Excess gross profit per books		(96,000)
Excess depreciation per tax return		(30,000)
Excess rental income per tax return		<u>100,000</u>
Taxable income		\$224,000
(c) Income Tax Expense	111,200	
Deferred Tax Asset	40,000	
Income Tax Payable		100,800
Deferred Tax Liability		50,400
Taxable income		\$224,000
Tax rate		<u>45%</u>
Income tax payable		<u>\$100,800</u>
Deferred tax liability at the end of 2004		\$50,400
Deferred tax liability at the beginning of 2004		0
Deferred tax expense for 2004 (net increase required in deferred tax liability)		<u>\$50,400</u>
Deferred tax asset at the end of 2004		\$ 40,000
Deferred tax asset at the beginning of 2004		<u>0</u>
Deferred tax benefit for 2004 (net increase required in deferred tax asset)		<u>\$(40,000)</u>
Deferred tax expense for 2004		\$ 50,400
Deferred tax benefit for 2004		<u>(40,000)</u>
Net deferred tax expense for 2004		10,400
Current tax expense for 2004 (Income tax payable)		<u>100,800</u>
Income tax expense for 2004		<u>\$111,200</u>

EXERCISE 19-19 (25-30 minutes)

(a) (All figures are in millions.)

Temporary Difference	Rate	Resulting Deferred Tax		Related Balance Sheet Account	Classification
		(Asset)	Liability		
\$100 million estimated costs per books	40%	\$ (40)		Estimated Payable	Current
\$50 million excess depreciation per tax	40%		\$20	Plant Assets	Noncurrent
Totals		<u>\$ (40)</u>	<u>\$20</u>		

(b) Current assets

Deferred tax asset \$40,000,000

Long-term liabilities

Deferred tax liability \$20,000,000

(c) Income before income taxes \$85,000,000²

Income tax expense

Current

\$64,000,000¹

Deferred

(30,000,000)³

34,000,000⁴

Net income

\$51,000,000

¹Taxable income for 2004

\$160,000,000

Enacted tax rate

40%

Income tax payable for 2004

\$ 64,000,000

²\$10,000,000 ÷ 40% = \$25,000,000 cumulative taxable temporary difference at the beginning of 2004.

Cumulative taxable temporary difference at the end of 2004

\$50,000,000

Cumulative taxable temporary difference at the beginning of 2004

25,000,000

Taxable temporary difference originating during 2004

\$25,000,000

Cumulative deductible temporary difference at the end of 2004

\$100,000,000

Cumulative deductible temporary difference at the beginning of 2004

0

Deductible temporary difference originating during 2004

\$100,000,000

EXERCISE 19-19 (Continued)

Pretax financial income for 2004	\$	X
Taxable temporary difference originating		(25,000,000)
Deductible temporary difference originating		<u>100,000,000</u>
Taxable income for 2004		<u>\$160,000,000</u>

Solving for X:

$$X - \$25,000,000 + \$100,000,000 = \$160,000,000$$

$$X = \underline{\$85,000,000} = \text{Pretax financial income}$$

³ Deferred tax liability at the end of 2004	\$20,000,000
Deferred tax liability at the beginning of 2004	<u>10,000,000</u>
Deferred tax expense for 2004 (increase in deferred tax liability)	<u>\$10,000,000</u>
Deferred tax asset at the end of 2004	\$ 40,000,000
Deferred tax asset at the beginning of 2004	<u>0</u>
Deferred tax benefit for 2004 (increase in deferred tax asset)	(40,000,000)
Deferred tax expense for 2004	<u>10,000,000</u>
Net deferred tax benefit for 2004	<u>\$(30,000,000)</u>
⁴ Net deferred tax benefit for 2004	\$(30,000,000)
Current tax expense for 2004 (Income tax payable)	<u>64,000,000</u>
Income tax expense for 2004	<u>\$ 34,000,000</u>

EXERCISE 19-20 (15-20 minutes)

(a) Income Tax Expense	128,800	
Deferred Tax Asset.....	68,000	
Income Tax Payable		176,800
Deferred Tax Liability		20,000

	Future Years			Total
	2004	2005	2006	
Future taxable (deductible) amounts				
Depreciation	\$ 20,000	\$30,000	\$10,000	\$ 60,000
Warranty costs	(200,000)			<u>\$(200,000)</u>
Enacted tax rate	<u>34%</u>	<u>34%</u>	<u>30%</u>	
Deferred tax liability	<u>\$ 6,800</u>	<u>\$10,200</u>	<u>\$ 3,000</u>	<u>\$ 20,000</u>
Deferred tax (asset)	<u>\$(68,000)</u>			<u>\$ (68,000)</u>

EXERCISE 19-20 (Continued)

Taxable income for 2003	\$520,000
Tax rate	<u>34%</u>
Income tax payable for 2003	<u>\$176,800</u>
Deferred tax liability at the end of 2003	\$ 20,000
Deferred tax liability at the beginning of 2003	<u>0</u>
Deferred tax expense for 2003 (increase required in deferred tax liability account)	<u>\$ 20,000</u>
Deferred tax asset at the end of 2003	\$ 68,000
Deferred tax asset at the beginning of 2003	<u>0</u>
Deferred tax benefit for 2003 (increase in deferred tax asset)	<u>\$(68,000)</u>
Deferred tax benefit for 2003	\$ (68,000)
Deferred tax expense for 2003	<u>20,000</u>
Net deferred tax benefit for 2003	(48,000)
Current tax expense for 2003	<u>176,800</u>
Income tax expense for 2003	<u>\$128,800</u>

(b) Current assets

Deferred tax asset \$68,000

Long-term liabilities

Deferred tax liability \$20,000

The deferred tax asset is classified as current because the related warranty obligation is a current liability. The warranty obligation is classified as current because it is expected to be settled in the year that immediately follows the balance sheet date.

The deferred tax liability is classified as noncurrent because the related plant assets are in a noncurrent classification.

EXERCISE 19-21 (20-25 minutes)

(a) Income Tax Expense	242,880	
Deferred Tax Asset.....	12,920	
Income Tax Payable		170,000
Deferred Tax Liability		85,800
 Taxable income		\$500,000
Enacted tax rate		<u>34%</u>
Income tax payable		<u>\$170,000</u>

Temporary Difference	Future Taxable (Deductible) Amounts	Tax Rate	Deferred Tax		Classification
			(Asset)	Liability	
Installment sale	\$ 40,000	34% ¹		\$13,600	Current
Installment sale	190,000*	38% ²		72,200	Current
Loss accrual	<u>(34,000)**</u>	38%	<u>\$(12,920)</u>		Noncurrent
Totals	<u>\$196,000</u>		<u>\$(12,920)</u>	<u>\$85,800</u>	

*\$50,000 + \$60,000 + \$80,000 = \$190,000.

**\$15,000 + \$19,000 = \$34,000.

¹Tax rate for 2004.

²Tax rate for 2005-2008.

Deferred tax liability at the end of 2004	\$85,800
Deferred tax liability at the beginning of 2004	<u>0</u>
Deferred tax expense for 2004 (increase required in deferred tax liability)	<u>\$85,800</u>
 Deferred tax asset at the end of 2004	\$ 12,920
Deferred tax asset at the beginning of 2004	<u>0</u>
Deferred tax benefit for 2004 (increase required in deferred tax asset)	<u>\$(12,920)</u>
 Deferred tax expense for 2004	\$ 85,800
Deferred tax benefit for 2004	<u>(12,920)</u>
Net deferred tax expense for 2004	72,880
Current tax expense for 2004 (Income tax payable)	<u>170,000</u>
Income tax expense for 2004	<u>\$242,880</u>

(b) <u>Other assets (noncurrent)</u>	
Deferred tax asset	\$12,920
 <u>Current liabilities</u>	
Deferred tax liability	\$85,800

EXERCISE 19-21 (Continued)

The deferred tax asset is noncurrent because the related liability is noncurrent. The liability from the accrual of the loss contingency is noncurrent because it is expected to be settled in years later than the year immediately following the balance sheet date.

An alternative is to argue that the loss contingency should be classified as current because the operating cycle is 4 years. In that case, the deferred tax asset related to the loss contingency would be reported as current.

The deferred tax liability is current because it is assumed that the related installment receivable is classified as a current asset. The installment receivable is classified as current when it is a trade practice for the entity to sell on an installment basis. If you assume the installment receivable is related to an installment sale of an investment and, therefore, is classified as part current and part noncurrent, then \$13,600 ($\$40,000 \times 34\%$) of the deferred tax liability should be classified as current and \$72,200 ($\$190,000 \times 38\%$) of it should be classified as noncurrent.

EXERCISE 19-22 (15-20 minutes)

(a) Income Tax Expense.....	125,800	
Deferred Tax Asset.....	10,200	
Income Tax Payable		119,000
Deferred Tax Liability		17,000

Taxable income	\$350,000
Enacted tax rate	34%
Income tax payable	<u>\$119,000</u>

Temporary Difference	Future Taxable (Deductible) Amounts	Tax Rate	Deferred Tax	
			(Asset)	Liability
Accounts receivable	\$50,000	34%		\$17,000
Litigation liability	<u>(30,000)</u>	34%	<u>\$(10,200)</u>	
Totals	<u>\$20,000</u>		<u>\$(10,200)</u>	<u>\$17,000</u>

*Because of a flat tax rate for all periods, these totals can be reconciled as follows: $\$20,000 \times 34\% = \$(10,200) + \$17,000$.

EXERCISE 19-22 (Continued)

Deferred tax liability at the end of 2003	\$17,000
Deferred tax liability at the beginning of 2003	<u>0</u>
Deferred tax expense for 2003 (increase required in deferred tax liability)	<u>\$17,000</u>
Deferred tax asset at the end of 2003	\$ 10,200
Deferred tax asset at the beginning of 2003	<u>0</u>
Deferred tax benefit for 2003 (increase required in deferred tax asset)	<u>\$(10,200)</u>
Deferred tax expense for 2003	\$ 17,000
Deferred tax benefit for 2003	<u>(10,200)</u>
Net deferred tax expense for 2003	6,800
Current tax expense for 2003 (Income tax payable)	<u>119,000</u>
Income tax expense for 2003	<u>\$125,800</u>

(b)

Temporary Difference	<u>Resulting Deferred Tax</u>		Related Balance Sheet Account	Classification
	(Asset)	Liability		
Accounts receivable		\$17,000	Accounts Receivable	Current
Litigation liability	\$(10,200)		Lawsuit Obligation	Current
Totals	<u>\$(10,200)</u>	<u>\$17,000</u>		

The deferred tax asset is current because the related liability is current. The liability from the accrual of the litigation loss is current because it is expected to be settled in the year that immediately follows the balance sheet date.

The deferred tax liability is current because the related accounts receivable is classified as a current asset. The entire accounts receivable balance is classified as current because the operating cycle of the business is two years.

EXERCISE 19-23 (30-35 minutes)

(a)

	2002	
Income Tax Expense		40,800
Income Tax Payable (\$120,000 X 34%)		40,800

EXERCISE 19-23 (Continued)

2003

Income Tax Expense.....	30,600	
Income Tax Payable (\$90,000 X 34%).....		30,600

2004

Income Tax Refund Receivable	71,400	
Deferred Tax Asset.....	26,600	
Benefit Due to Loss Carryback.....		71,400*
Benefit Due to Loss Carryforward.....		26,600**

*[34% X \$(120,000)] + [34% X \$(90,000)] = \$71,400

**38% X (\$280,000 – \$120,000 – \$90,000) = \$26,600

2005

Income Tax Expense.....	83,600	
Income Tax Payable		57,000*
Deferred Tax Asset.....		26,600

*[(\$220,000 – \$70,000) X 38%]

(b) Operating loss before income taxes		\$(280,000)
Income tax benefit		
Benefit due to loss carryback	\$71,400	
Benefit due to loss carryforward	<u>26,600</u>	<u>98,000</u>
Net loss		<u><u>\$(182,000)</u></u>

(c) **2004**

Income Tax Refund Receivable	71,400	
Deferred Tax Asset.....	26,600	
Benefit Due to Loss Carryback.....		71,400*
Benefit Due to Loss Carryforward.....		26,600**

*[34% X \$(120,000)] + [34% X \$(90,000)] = \$71,400

**38% X (\$280,000 – \$120,000 – \$90,000) = \$26,600

Benefit Due to Loss Carryforward.....	6,650	
Allowance to Reduce Deferred Tax Asset to Expected Realizable Value		6,650
(25% X \$26,600)		

EXERCISE 19-23 (Continued)

2005

Income Tax Expense	83,600	
Deferred Tax Asset		26,600
Income Tax Payable		57,000
[(\$220,000 – \$70,000) X 38%]		
Allowance to Reduce Deferred Tax Asset to Expected Realizable Value	6,650	
Benefit Due to Loss Carryforward		6,650
(d) Operating loss before income taxes		\$(280,000)
Income tax benefit		
Benefit due to loss carryback	\$71,400	
Benefit due to loss carryforward	19,950	91,350
Net loss		<u>\$(188,650)</u>

Note: Using the assumption in part (a), the income tax section of the 2005 income statement would appear as follows:

Income before income taxes		\$220,000
Income tax expense		
Current	\$57,000	
Deferred	26,600	83,600
Net income		<u>\$136,400</u>

Note: Using the assumption in part (c), the income tax section of the 2005 income statement would appear as follows:

Income before income taxes		\$220,000
Income tax expense		
Current	\$57,000	
Deferred	26,600	
Benefit due to loss carry- forward	(6,650)	76,950
Net income		<u>\$143,050</u>

EXERCISE 19-24 (30-35 minutes)

(a)	2002		
	Income Tax Expense.....	48,000	
	Income Tax Payable (\$120,000 X 40%).....		48,000
	2003		
	Income Tax Expense.....	36,000	
	Income Tax Payable (\$90,000 X 40%).....		36,000
	2004		
	Income Tax Refund Receivable	84,000	
	Deferred Tax Asset.....	31,500	
	Benefit Due to Loss Carryback.....		84,000*
	Benefit Due to Loss Carryforward.....		31,500**
	*[40% X \$(120,000)] + [40% X \$(90,000)] = \$84,000		
	**45% X (\$280,000 – \$120,000 – \$90,000) = \$31,500		
	Benefit Due to Loss Carryforward.....	15,750	
	Allowance to Reduce Deferred Tax Asset to Expected Realizable Value..... (50% X \$31,500)		15,750
	2005		
	Income Tax Expense.....	54,000	
	Deferred Tax Asset.....		31,500
	Income Tax Payable		22,500
	[\$120,000 – \$70,000) X 45%]		
	Allowance to Reduce Deferred Tax Asset to Expected Realizable Value.....	15,750	
	Benefit Due to Loss Carryforward.....		15,750
(b)	Operating loss before income taxes		\$(280,000)
	Income tax benefit		
	Benefit due to loss carryback	\$84,000	
	Benefit due to loss carryforward	<u>15,750</u>	<u>99,750</u>
	Net loss		<u><u>\$(180,250)</u></u>

EXERCISE 19-24 (Continued)

(c) Income before income taxes		\$120,000
Income tax expense		
Current	\$22,500	
Deferred	31,500	
Benefit due to loss carry-forward	(15,750)	38,250
Net income		<u>\$ 81,750</u>

EXERCISE 19-25 (15-20 minutes)

(a)	2004		
	Income Tax Expense (\$120,000 X .40)	48,000	
	Income Tax Payable		48,000
	2005		
	Income Tax Refund Receivable	167,000	
	Deferred Tax Asset	40,000	
	Benefit Due to Loss Carryback		167,000*
	Benefit Due to Loss Carryforward		40,000**
	*(\$350,000 X .34) + (\$120,000 X .40)		
	**[(\$570,000 – \$350,000 – \$120,000) X .40]		
	Benefit Due to Loss Carryforward	8,000	
	Allowance to Reduce Deferred Tax Asset to Expected Realizable Value		8,000
	(1/5 X \$40,000)		
	2006		
	Income Tax Expense (\$180,000 X .40)	72,000	
	Income Tax Payable		32,000
	[(\$180,000 – \$100,000) X .40]		
	Deferred Tax Asset		40,000
	Allowance to Reduce Deferred Tax Asset to Expected Realizable Value	8,000	
	Benefit Due to Loss Carryforward		8,000

EXERCISE 19-25 (Continued)

(b) Loss before income taxes		\$(570,000)
Income tax benefit		
Benefit due to loss carryback	\$167,000	
Benefit due to loss carryforward	<u>32,000</u>	<u>199,000</u>
Net loss		<u><u>\$(371,000)</u></u>

TIME AND PURPOSE OF PROBLEMS

Problem 19-1 (Time 40-45 minutes)

Purpose—to provide the student with an understanding of how to compute and properly classify deferred income taxes when there are three types of temporary differences. A single tax rate applies. The student is required to compute and classify deferred income taxes. Also, the student must use data given to solve for both taxable income and pretax financial income. The latter computation is complicated by the fact there are deferred taxes at the beginning of the year.

Problem 19-2 (Time 50-60 minutes)

Purpose—to provide the student with a situation where: (1) a temporary difference originates over a three-year period and begins to reverse in the fourth period, (2) a change in an enacted tax rate occurs in a year in which there is a change in the amount of cumulative temporary difference, (3) the amount of originating or reversing temporary difference must be calculated each year in order to determine the cumulative temporary difference at the end of each year, and (4) there is a permanent difference along with a temporary difference each year. Journal entries are required for each of four years, including the entry for the adjustment of deferred taxes due to the change in the enacted tax rate.

Problem 19-3 (Time 40-45 minutes)

Purpose—to provide the student with an understanding of how future temporary differences for existing depreciable assets are considered in determining the future years in which existing temporary differences result in taxable or deductible amounts. The student is given information about pretax financial income, one temporary difference, and one permanent difference. The student must compute all amounts related to income taxes for the current year and prepare the journal entry to record them. In order to determine the beginning balance in a deferred tax account, the student must calculate deferred taxes for the prior year's balance sheet. An income statement presentation is also required and an extraordinary gain is recognized in the current period.

Problem 19-4 (Time 40-50 minutes)

Purpose—to provide the student with an understanding of permanent and temporary differences when there are multiple differences and a single rate.

Problem 19-5 (Time 20-25 minutes)

Purpose—to provide the student with a situation involving an actual net operating loss which can be partially offset by prior taxes paid using the carryback provision. Journal entries for the loss year and two subsequent years are required. The benefits of the loss carryforward are realized in the year following the loss year. Income statement presentations are required for the loss year where the benefits of the carryback and the carryforward are recognized and the year following the loss year where the benefits of the carryforward are realized.

Problem 19-6 (Time 20-25 minutes)

Purpose—to provide the student with an understanding of how the computation and classification of deferred income taxes are affected by the individual future year(s) in which future taxable and deductible amounts are scheduled to occur because of existing temporary differences. Two situations are given and the student is required to compute and classify the deferred income taxes for each. A net deferred tax asset results in both cases.

Problem 19-7 (Time 45-50 minutes)

Purpose—to provide the student with a situation where: (1) a temporary difference originates in one period and reverses over the following two periods, (2) a change in an enacted tax rate occurs in a year in which there is a change in the amount of cumulative temporary difference, and (3) the amount of originating or reversing temporary difference must be calculated each year in order to determine the cumulative temporary difference at the end of each year. Journal entries are required for each of three years, including the entry for the adjustment of deferred taxes due to the change in the enacted tax rate.

Time and Purpose of Problems (Continued)

Problem 19-8 (Time 40-50 minutes)

Purpose—to test a student's understanding of the relationships that exist in the subject area of accounting for income taxes. The student is required to compute and classify deferred income taxes for two successive years. The journal entry to record income taxes is also required for each year. A draft of the income tax expense section of the income statement is also required for each year. An interesting twist to this problem is that the student must compute taxable income for two individual periods based on facts about the tax rate and amount of taxes paid for each period and then combine that information with data on temporary differences to compute pretax financial income.

Problem 19-9 (Time 40-50 minutes)

Purpose—to test a student's ability to compute and classify deferred taxes for three temporary differences and to draft the income tax expense section of the income statement for the year.

SOLUTIONS TO PROBLEMS

PROBLEM 19-1

- (a) $X(.40) = \$360,000$ taxes due for 2003
 $X = \$360,000 \div .40$
 $X = \$900,000$ taxable income for 2003

(b) Taxable income [from part (a)]	\$900,000
Excess depreciation	100,000
Municipal interest	10,000
Unearned rent	<u>(40,000)</u>
Pretax financial income for 2003	<u>\$970,000</u>

	2003	
(c)	Income Tax Expense	381,000
	Deferred Tax Asset (\$40,000 X .35)	14,000
	Income Tax Payable (\$900,000 X .40)	360,000
	Deferred Tax Liability (\$100,000 X .35)	35,000

	2004	
	Income Tax Expense	341,250
	Deferred Tax Liability	8,750
	[(\$100,000 ÷ 4) X .35]	
	Income Tax Payable	343,000
	(\$980,000 X .35)	
	Deferred Tax Asset	7,000
	[(\$40,000 ÷ 2) X .35]	

(d) Income before income taxes	\$970,000
Income tax expense	
Current	\$360,000
Deferred (\$35,000 – \$14,000)	<u>21,000</u>
Net income	<u>\$589,000</u>

PROBLEM 19-2

- (a) Before deferred taxes can be computed, the amount of temporary difference originating (reversing) each period and the resulting cumulative temporary difference at each year-end must be computed:

	2004	2005	2006	2007
Pretax financial income	\$280,000	\$320,000	\$350,000	\$ 420,000
Nondeductible expense	<u>30,000</u>	<u>30,000</u>	<u>30,000</u>	<u>30,000</u>
Subtotal	310,000	350,000	380,000	450,000
Taxable income	<u>180,000</u>	<u>225,000</u>	<u>270,000</u>	<u>580,000</u>
Temporary difference originating (reversing)	<u>\$130,000</u>	<u>\$125,000</u>	<u>\$110,000</u>	<u>\$(130,000)</u>

**Cumulative Temporary
Difference At End of Year**

2004	\$130,000	
2005	\$255,000	(\$130,000 + \$125,000)
2006	\$365,000	(\$255,000 + \$110,000)
2007	\$235,000	(\$365,000 – \$130,000)

Because the temporary difference causes pretax financial income to exceed taxable income in the period it originates, the temporary difference will cause future taxable amounts.

Taxable income for 2004	\$180,000
Enacted tax rate for 2004	<u>35%</u>
Current tax expense for 2004 (Income tax payable)	<u>\$ 63,000</u>

2004

Income Tax Expense.....	108,500	
Income Tax Payable		63,000
Deferred Tax Liability		45,500

PROBLEM 19-2 (Continued)

The deferred taxes at the end of 2004 would be computed as follows:

Temporary Difference	Future Taxable (Deductible) Amounts	Tax Rate	Deferred Tax	
			(Asset)	Liability
Depreciation	\$130,000	35%		<u>\$45,500</u>
Deferred tax liability at the end of 2004				\$45,500
Deferred tax liability at the beginning of 2004				<u>0</u>
Deferred tax expense for 2004 (increase in deferred tax liability)				<u>\$45,500</u>
Deferred tax expense for 2004				\$ 45,500
Current tax expense for 2004				<u>63,000</u>
Income tax expense for 2004				<u>\$108,500</u>

2005

Income Tax Expense	6,500*	
Deferred Tax Liability		6,500
(To record the adjustment for the increase in the enacted tax rate)		
Income Tax Expense	140,000	
Income Tax Payable		90,000
Deferred Tax Liability		50,000
(To record income taxes for 2005)		

*The adjustment due to the change in the tax rate is computed as follows:

Cumulative temporary difference at the end of 2004	\$130,000
Newly enacted tax rate for future year	<u>40%</u>
Adjusted balance of deferred tax liability at the end of 2004	52,000
Current balance of deferred tax liability	<u>45,500</u>
Adjustment due to increase in enacted tax rate	<u>\$ 6,500</u>

PROBLEM 19-2 (Continued)

Taxable income for 2005	\$225,000
Enacted tax rate	<u>40%</u>
Current tax expense for 2005 (Income tax payable)	<u>\$ 90,000</u>

The deferred taxes at December 31, 2005, are computed as follows:

Temporary Difference	Future Taxable (Deductible) Amounts	Tax Rate	Deferred Tax	
			(Asset)	Liability
Depreciation	\$255,000	40%		<u>\$102,000</u>
Deferred tax liability at the end of 2005				\$102,000
Deferred tax liability at the beginning of 2005 after adjustment				<u>52,000</u>
Deferred tax expense for 2005 exclusive of adjustment due to change in tax rate (increase in deferred tax liability)				<u>\$ 50,000</u>
Deferred tax expense for 2005				\$ 50,000
Current tax expense for 2005				<u>90,000</u>
Income tax expense (total) for 2005, exclusive of adjustment due to change in tax rate				<u>\$140,000</u>

2006

Income Tax Expense.....	152,000	
Income Tax Payable		108,000
Deferred Tax Liability		44,000
Taxable income for 2006		\$270,000
Enacted tax rate		<u>40%</u>
Current tax expense for 2006 (Income tax payable)		<u>\$108,000</u>

The deferred taxes at December 31, 2006, are computed as follows:

Temporary Difference	Future Taxable (Deductible) Amounts	Tax Rate	Deferred Tax	
			(Asset)	Liability
Depreciation	\$365,000	40%		<u>\$146,000</u>

PROBLEM 19-2 (Continued)

Deferred tax liability at the end of 2006	\$146,000
Deferred tax liability at the beginning of 2006	<u>102,000</u>
Deferred tax expense for 2006 (increase in deferred tax liability)	<u>\$ 44,000</u>
Deferred tax expense for 2006	\$ 44,000
Current tax expense for 2006	<u>108,000</u>
Income tax expense for 2006	<u>\$152,000</u>

2007

Income Tax Expense	180,000	
Deferred Tax Liability	52,000	
Income Tax Payable		232,000
Taxable income for 2007		\$580,000
Enacted tax rate		<u>40%</u>
Current tax expense for 2007 (Income tax payable)		<u>\$232,000</u>

The deferred taxes at December 31, 2007, are computed as follows:

Temporary Difference	Future Taxable (Deductible) Amounts	Tax Rate	Deferred Tax (Asset) Liability
Depreciation	\$235,000	40%	<u>\$94,000</u>

Deferred tax liability at the end of 2007	\$ 94,000
Deferred tax liability at the beginning of 2007	<u>146,000</u>
Deferred tax benefit for 2007 (decrease in deferred tax liability)	<u>\$(52,000)</u>
Deferred tax benefit for 2007	\$(52,000)
Current tax expense for 2007	<u>232,000</u>
Income tax expense for 2007	<u>\$180,000</u>

(b)

2005

Income before income taxes		\$320,000
Income tax expense	\$90,000	
Current	50,000	
Deferred		
Adjustment due to change In tax rate	<u>6,500</u>	<u>146,000</u>
Net income		<u>\$173,500</u>

PROBLEM 19-3

	Book Depreciation	Tax Depreciation	Difference
2003	\$ 125,000	\$ 100,000*	\$ 25,000
2004	125,000	200,000	(75,000)
2005	125,000	200,000	(75,000)
2006	125,000	200,000	(75,000)
2007	125,000	200,000	(75,000)
2008	125,000	100,000*	25,000
2009	125,000	0	125,000
2010	125,000	0	125,000
Totals	<u>\$1,000,000</u>	<u>\$1,000,000</u>	<u>\$ 0</u>

*(\$1,000,000 ÷ 5) x .5

(a) Pretax financial income for 2004	\$1,400,000
Nontaxable interest	(60,000)
Excess depreciation (\$200,000 – \$125,000)	<u>(75,000)</u>
Taxable income for 2004	1,265,000
Tax rate	<u>35%</u>
Income tax payable for 2004	<u>\$ 442,750</u>

(b) Income Tax Expense.....	469,000	
Income Tax Payable		442,750
Deferred Tax Liability		17,500
Deferred Tax Asset.....		8,750

Scheduling—End of 2004

	Future Years		
	2005	2006	2007
Future taxable (deductible) amounts	\$(75,000)	\$(75,000)	\$(75,000)
Enacted tax rate	<u>35%</u>	<u>35%</u>	<u>35%</u>
Deferred tax (asset) liability	<u>\$(26,250)</u>	<u>\$(26,250)</u>	<u>\$(26,250)</u>

PROBLEM 19-3 (Continued)

	Future Years			Total
	2008	2009	2010	
Future taxable (deductible) amounts	\$ (25,000)	\$ (125,000)	\$ (125,000)	<u>\$ (50,000)</u>
Enacted tax rate	<u>35%</u>	<u>35%</u>	<u>35%</u>	
Deferred tax (asset) liability	<u>\$ (8,750)</u>	<u>\$ (43,750)</u>	<u>\$ 43,750</u>	<u>\$ (17,500)</u>

The net deferred tax asset at December 31, 2004, is \$17,500.

Scheduling-End of 2003

	Future Years			
	2004	2005	2006	2007
Future taxable (deductible) amounts	\$ (75,000)	\$ (75,000)	\$ (75,000)	<u>\$ (75,000)</u>
Enacted tax rate	<u>35%</u>	<u>35%</u>	<u>35%</u>	
Deferred tax (asset) liability	<u>\$ (26,250)</u>	<u>\$ (26,250)</u>	<u>\$ (26,250)</u>	<u>\$ (26,250)</u>

	Future Years			Total
	2008	2009	2010	
Future taxable (deductible) amounts	\$25,000	\$125,000	\$125,000	<u>\$ (25,000)</u>
Enacted tax rate	<u>35%</u>	<u>35%</u>	<u>35%</u>	
Deferred tax (asset) liability	<u>\$ 8,750</u>	<u>\$ 43,750</u>	<u>\$ 43,750</u>	<u>\$ (8,750)</u>

The net deferred tax asset at December 31, 2003, is \$8,750.

Deferred tax liability at the end of 2004	\$17,500
Deferred tax liability at the beginning of 2004	<u>0</u>
Deferred tax expense for 2004 (increase in deferred tax liability)	<u>\$17,500</u>
Deferred tax asset at the end of 2004	\$ 0
Deferred tax asset at the beginning of 2004	<u>8,750</u>
Deferred tax expense for 2004 (decrease in deferred tax asset)	<u>\$ 8,750</u>

PROBLEM 19-3 (Continued)

Deferred tax expense for 2004 (from deferred tax liability)		\$17,500
Deferred tax expense for 2004 (from deferred tax asset)		<u>8,750</u>
Net deferred tax expense for 2004		<u>\$26,250</u>
Current tax expense for 2004 (Income tax payable)		\$442,750
Deferred tax expense for 2004		<u>26,250</u>
Income tax expense for 2004		<u>\$469,000</u>

(c) Income before income taxes and extraordinary item		\$1,200,000 ^a
Income tax expense		
Current (\$442,750 – \$70,000 ^b)	\$372,750	
Deferred	<u>26,250</u>	<u>399,000</u>
Income before extraordinary item		801,000
Extraordinary gain	200,000	
Less applicable income tax	<u>70,000</u>	<u>130,000</u>
Net income		<u>\$ 931,000</u>

^a\$1,400,000 pretax financial income – \$200,000 extraordinary item = \$1,200,000.

^b(\$200,000 X 35%)

(d) \$(78,750) + \$96,250 = \$17,500 net deferred tax liability at December 31, 2004.

Long-term liabilities

Deferred tax liability \$17,500

PROBLEM 19-4

(a) **Schedule of Pretax Financial Income
and Taxable Income for 2004**

Pretax financial income	\$850,000		
Permanent differences			
Insurance expense	9,000		
Bond interest revenue	(4,000)		
Pollution fines	<u>4,200</u>		
	859,200	x 30% =	\$257,760
Temporary differences			
* Depreciation expense	(20,000)	x 30% =	(6,000)
Installment sales (\$100,000 - \$75,000)	(25,000)	x 30% =	(7,500)
Warranty expense (\$60,000 - \$10,000)	<u>50,000</u>	x 30% =	<u>15,000</u>
Taxable income	\$864,200	x 30% =	<u>\$259,260</u>
* Depreciation for books (\$200,000 / 5)	=	\$40,000	
Depreciation tax return (\$200,000 x 30%)	=	<u>60,000</u>	
Difference		\$20,000	

(b) Income Tax Expense	257,760*		
Deferred Tax Asset	15,000		
Deferred Tax Liability (\$6,000 + \$7,500) ..			13,500
Income Tax Payable.....			259,260
*Deferred tax expense for 2004 (from deferred tax liability)		\$ 13,500	
Deferred tax benefit for 2004 (from deferred tax asset)		<u>(15,000)</u>	
Net deferred tax benefit for 2004		(1,500)	
Current tax expense for 2004 (income tax payable)		<u>259,260</u>	
Income tax expense for 2004		<u>\$257,760</u>	

PROBLEM 19-5

(a)

2003

Income Tax Refund Receivable—2001.....	18,000	
(\$60,000 X 30%)		
Income Tax Refund Receivable—2002.....	32,000	
(\$80,000 X 40%)		
Benefit Due to Loss Carryback.....		50,000

Note: An acceptable alternative is to record only one Income Tax Refund Receivable account for the amount of \$50,000.

Deferred Tax Asset.....	24,000	
Benefit Due to Loss Carryforward.....		24,000
(\$200,000 – \$60,000 – \$80,000 = \$60,000)		
(\$60,000 X 40% = \$24,000)		

2004

Income Tax Expense.....	28,000	
Deferred Tax Asset.....		24,000
Income Tax Payable		4,000
[(\$70,000 – \$60,000) X 40%]		

2005

Income Tax Expense.....	31,500	
Income Tax Payable (\$90,000 X 35%).....		31,500

(b) One or more income tax refund receivable accounts totaling \$50,000 will be reported under current assets on the balance sheet at December 31, 2003. This type of receivable is usually listed immediately above inventory in the current assets section. This receivable is normally collectible within two months of filing the amended tax returns reflecting the carryback. A deferred tax asset of \$24,000 should also be classified as a current asset because the benefits of the loss carryforward are expected to be realized in the year that immediately follows the loss year which means the benefits are expected to be realized in 2004. A current deferred tax asset is usually listed at or near the end of the list of current assets on the balance sheet. Also, retained earnings is increased by \$74,000 (\$50,000 + \$24,000) as a result of the entries to record the benefits of the loss carryback and the loss carryforward.

PROBLEM 19-5 (Continued)

(c) 2003 Income Statement

Operating loss before income taxes		\$(200,000)
Income tax benefit		
Benefit due to loss carryback	\$50,000	
Benefit due to loss carryforward	<u>24,000</u>	<u>74,000</u>
Net loss		<u>\$(126,000)</u>

(d) 2004 Income Statement

Income before income taxes		\$70,000
Income tax expense		
Current	\$ 4,000^a	
Deferred	<u>24,000</u>	<u>28,000</u>
Net income		<u>\$42,000</u>

^a Loss (2003)		\$200,000
Loss carryback (2001)		(60,000)
Loss carryback (2002)		<u>(80,000)</u>
Loss carryforward (2004)		(60,000)
Taxable income 2004 before carryforward		<u>70,000</u>
Taxable income 2004		10,000
Enacted tax rate for 2004		<u>40%</u>
Income tax payable for 2004		<u>\$ 4,000</u>

PROBLEM 19-6

1.

Temporary Difference	Future Taxable (Deductible) Amounts	Tax Rate	Deferred Tax	
			(Asset)	Liability
First one	\$ 300	30% ^a		\$ 90
First one	300	30% ^b		90
First one	300	30% ^c		90
First one	300	35% ^d		105
First one	300	35% ^e		105
Second one	<u>(1,400)</u>	35% ^d	\$(490)	
Totals	<u>\$ 100</u>		<u>\$(490)</u>	<u>\$480</u>

^aTax rate for 2004.

^bTax rate for 2005.

^cTax rate for 2006.

^dTax rate for 2007

^eTax rate for 2008.

**PIRATES CO.
Balance Sheet
December 31, 2003**

Other assets (noncurrent)

Deferred tax asset (\$490 – \$480)

\$10

2.

Temporary Difference	Future Taxable (Deductible) Amounts	Tax Rate	Deferred Tax	
			(Asset)	Liability
First one	\$ 300	30% ^a		\$ 90
First one	300	30% ^b		90
First one	300	30% ^c		90
First one	300	35% ^d		105
Second one	<u>(2,000)</u>	30% ^c	\$(600)	
Totals	<u>\$ (800)</u>		<u>\$(600)</u>	<u>\$375</u>

^aTax rate for 2004.

^bTax rate for 2005.

^cTax rate for 2006

^dTax rate for 2007.

PROBLEM 19-6 (Continued)

**EAGLES CO.
Balance Sheet
December 31, 2003**

Other assets (noncurrent)

Deferred tax asset (\$600 – \$375)

\$225

PROBLEM 19-7

- (a) Before deferred taxes can be computed, the amount of cumulative temporary difference existing at the end of each year must be computed:

	2003	2004	2005
Pretax financial income	\$130,000	\$70,000	\$70,000
Taxable income	<u>90,000</u>	<u>90,000</u>	<u>90,000</u>
Temporary difference originating (reversing)	40,000	(20,000)	(20,000)
Cumulative temporary difference at the beginning of the year	<u>0</u>	<u>40,000</u>	<u>20,000</u>
Cumulative temporary difference at the end of the year	<u>\$ 40,000</u>	<u>\$20,000</u>	<u>\$ 0</u>

2003

Income Tax Expense.....	45,500	
Income Tax Payable		31,500
Deferred Tax Liability		14,000
Taxable income for 2003		\$90,000
Enacted tax rate for 2003		<u>35%</u>
Current tax expense for 2003 (Income tax payable)		<u>\$31,500</u>

	Future Taxable (Deductible) Amounts	Tax Rate	December 31, 2004 Deferred Tax	
Temporary Difference			(Asset)	Liability
Installment Accounts Receivable	\$ 40,000	35% ^a		<u>\$14,000</u>

^aTax rate enacted for 2003.

Deferred tax liability at the end of 2003	\$14,000
Deferred tax liability at the beginning of 2003	<u>0</u>
Deferred tax expense for 2003 (increase in deferred tax liability)	<u>\$14,000</u>

PROBLEM 19-7 (Continued)

Deferred tax expense for 2003	\$14,000
Current tax expense for 2003 (Income tax payable)	<u>31,500</u>
Income tax expense for 2003	<u>\$45,500</u>

2004

Deferred Tax Liability	2,000	
Income Tax Expense		2,000*
(To record the adjustment for the decrease in the enacted tax rate)		
Income Tax Expense	21,000	
Deferred Tax Liability	6,000	
Income Tax Payable		27,000
*Cumulative temporary difference at the end of 2003		\$40,000
Newly enacted tax rate for future year		<u>30%</u>
Adjusted balance of deferred tax liability at the end of 2003		12,000
Current balance of deferred tax liability		<u>14,000</u>
Adjustment due to decrease in enacted tax rate		<u>\$ (2,000)</u>
Taxable income for 2004		\$90,000
Enacted tax rate for 2004		<u>30%</u>
Current tax expense for 2004 (Income tax payable)		<u>\$27,000</u>

Temporary Difference	Future Taxable (Deductible) Amounts	Tax Rate	Deferred Tax	
			(Asset)	Liability
Installment Accounts Receivable	\$20,000	30%^b		<u>\$ 6,000</u>

^bTax rate enacted for 2004.

Deferred tax liability at the end of 2004	\$ 6,000
Deferred tax liability at the beginning of 2004 after adjustment (\$14,000 – \$2,000)	<u>12,000</u>
Deferred tax benefit for 2004 (decrease in deferred tax liability)	<u>\$ (6,000)</u>

PROBLEM 19-7 (Continued)

Deferred tax benefit for 2004	\$ (6,000)
Current tax expense for 2004 (Income tax payable)	<u>27,000</u>
Income tax expense for 2004	<u>\$21,000</u>

2005

Income Tax Expense.....	21,000	
Deferred Tax Liability.....	6,000	
Income Tax Payable		27,000

Taxable income for 2005	\$90,000
Enacted tax rate for 2005	<u>30%</u>
Current tax expense for 2005 (Income tax payable)	<u>\$27,000</u>

Temporary Difference	Future Taxable (Deductible) Amounts	Tax Rate	December 31, 2004	
			Deferred Tax (Asset)	Liability
Installment Accounts Receivable	\$—0—	30%		<u>\$—0—</u>
Deferred tax liability at the end of 2005				\$ 0
Deferred tax liability at the beginning of 2005				<u>6,000</u>
Deferred tax benefit for 2005 (decrease in deferred tax liability)				<u>\$ (6,000)</u>
Deferred tax benefit for 2005				\$ (6,000)
Current tax expense for 2005				<u>27,000</u>
Income tax expense for 2005				<u>\$21,000</u>

(b) December 31, 2003

<u>Current liabilities</u>	
Deferred tax liability	\$14,000

December 31, 2004

<u>Current liabilities</u>	
Deferred tax liability	\$ 6,000

December 31, 2005

There is no deferred tax liability to be reported at this date.

PROBLEM 19-7 (Continued)

(c)	<u>2003</u>		
Income before income taxes			\$130,000
Income tax expense			
Current	\$31,500		
Deferred	<u>14,000</u>		<u>45,500</u>
Net income			<u>\$ 84,500</u>
	<u>2004</u>		
Income before income taxes			\$70,000
Income tax expense			
Current	\$27,000		
Deferred	(6,000)		
Adjustment due to decrease in tax rate	<u>(2,000)</u>		<u>19,000</u>
Net income			<u>\$51,000</u>
	<u>2005</u>		
Income before income taxes			\$70,000
Income tax expense			
Current	\$27,000		
Deferred	<u>(6,000)</u>		<u>21,000</u>
Net income			<u>\$49,000</u>

PROBLEM 19-8

(a)

Temporary Difference	Future Taxable (Deductible) Amounts	Tax Rate	Deferred Tax	
			(Asset)	Liability
Depreciation	\$(40,000)*	40%	<u>\$(16,000)</u>	

*(Computation shown on next page.)

Other assets (noncurrent)

Deferred tax asset \$16,000

This answer may differ from what is expected. Usually, depreciation is faster for tax purposes; in this situation, there is excess depreciation for book purposes in the first year for depreciation (2003).

(b) Income Tax Expense.....	124,000	
Deferred Tax Asset.....	16,000	
Income Tax Payable		140,000

\$140,000 taxes due for 2003 ÷ 40% 2003 tax rate = \$350,000 taxable income for 2003.

Taxable income for 2003	\$350,000
Tax rate	<u>40%</u>
Income tax payable for 2003 (also given data)	<u>\$140,000</u>
Deferred tax asset at the end of 2003	\$ 16,000
Deferred tax asset at the beginning of 2003	<u>0</u>
Deferred tax benefit for 2003 (increase in deferred tax asset)	(16,000)
Current tax expense for 2003 (Income tax payable)	<u>140,000</u>
Income tax expense for 2003	<u>\$124,000</u>

(c) Income before income taxes		\$310,000 ^a
Income tax expense		
Current	\$140,000	
Deferred	<u>(16,000)</u>	<u>124,000</u>
Net income		<u>\$186,000</u>

^a Pretax financial income	\$	X
Excess depreciation per books		<u>40,000^b</u>
Taxable income [from (b) above]		<u>\$350,000</u>

Solving for X; X + \$40,000 = \$350,000; X = \$310,000 pretax financial income.

PROBLEM 19-8 (Continued)

	Book Depreciation	Tax Depreciation	^b Difference
2003	\$ 80,000	\$ 40,000*	\$40,000
2004	80,000	80,000	0
2005	80,000	80,000	0
2006	80,000	80,000	0
2007	80,000	80,000	0
2008	<u>0</u>	<u>40,000</u>	<u>(40,000)</u>
Totals	<u>\$400,000</u>	<u>\$400,000</u>	<u>\$ 0</u>

*(\$400,000 ÷ 5) X .5

(d)

Temporary Difference	Future Taxable (Deductible) Amounts	Tax Rate	<u>Deferred Tax</u>	
			(Asset)	Liability
Depreciation	\$ (40,000)	40%	\$(16,000)	
Unearned rent	(75,000)	40%	(30,000)	
Unearned rent	(75,000)	40%	<u>(30,000)</u>	
Totals	<u>\$(190,000)</u>		<u>\$(76,000)</u>	

Temporary Difference	<u>Resulting Deferred Tax</u>		Related Balance Sheet Account	Classification
	(Asset)	Liability		
Depreciation	\$(16,000)		Plant Assets	Noncurrent
Unearned rent	(30,000)		Unearned Rent	Current
Unearned rent	<u>(30,000)</u>		Unearned Rent	Noncurrent
Totals	<u>\$(76,000)</u>			

Current assets

Deferred tax asset

\$30,000

Other assets (noncurrent)

Deferred tax asset

\$46,000^c

^c\$30,000 + \$16,000 = \$46,000

PROBLEM 19-8 (Continued)

(e) Income Tax Expense.....	52,000	
Deferred Tax Asset.....	60,000	
Income Tax Payable		112,000

\$112,000 taxes due for 2004 ÷ 40% 2004 tax rate = \$280,000 taxable income for 2004.

Taxable income for 2004	\$280,000
Tax rate for 2004	<u>40%</u>
Income tax payable for 2004 (also given data)	<u>\$112,000</u>

Deferred tax asset at the end of 2004	\$ 76,000
Deferred tax asset at the beginning of 2004	<u>16,000</u>
Deferred tax benefit for 2004 (increase in deferred tax asset)	<u>\$ (60,000)</u>

Deferred tax benefit for 2004	\$ (60,000)
Current tax expense for 2004 (Income tax payable)	<u>112,000</u>
Income tax expense for 2004	<u>\$ 52,000</u>

(f) Income before income taxes		\$130,000 ^d
Income tax expense		
Current	\$112,000	
Deferred	<u>(60,000)</u>	<u>52,000</u>
Net income		<u>\$ 78,000</u>

^d Pretax financial income	\$	X
Excess rent collected over rent earned		<u>150,000</u>
Taxable income [from (e) above]		<u>\$280,000</u>

Solving for X:

$$X + \$150,000 = \$280,000$$

$$X = \$130,000 \text{ pretax financial income.}$$

PROBLEM 19-9

(a)	Pretax financial income	\$100,000
	Permanent differences:	
	Fine for pollution	3,500
	Tax-exempt interest	(1,400)
	Originating temporary differences:	
	Excess warranty expense per books (\$5,000 – \$2,000)	3,000
	Excess construction profits per books (\$92,000 – \$62,000)	(30,000)
	Excess depreciation per tax (\$80,000 – \$60,000)	<u>(20,000)</u>
	Taxable income	<u>\$ 55,100</u>

(b)		Future Taxable	Tax	Deferred Tax	
	Temporary Difference	(Deductible) Amounts	Rate	(Asset)	Liability
	Warranty costs	\$ (3,000)	40%	\$(1,200)	
	Construction profits	30,000	40%		\$12,000
	Depreciation	<u>20,000</u>	40%		<u>8,000</u>
	Totals	<u>\$47,000</u>		<u>\$(1,200)</u>	<u>\$20,000*</u>

*Because of a flat tax rate, these totals can be reconciled:
 $\$47,000 \times 40\% = \$1,200 + \$20,000.$

(c)	Income Tax Expense	40,840
	Deferred Tax Asset	1,200
	Deferred Tax Liability	20,000
	Income Tax Payable	22,040
	Taxable income for 2004 [answer part (a)]	\$55,100
	Tax rate	40%
	Income tax payable for 2004	<u>\$22,040</u>
	Deferred tax liability at the end of 2004 [part (b)]	\$20,000
	Deferred tax liability at the beginning of 2004	<u>0</u>
	Deferred tax expense for 2004	<u>\$20,000</u>

PROBLEM 19-9 (Continued)

Deferred tax asset at the end of 2004			\$ 1,200
Deferred tax asset at the beginning of 2004			<u>0</u>
Deferred tax benefit for 2004			<u>\$ (1,200)</u>
Deferred tax expense for 2004			\$20,000
Deferred tax benefit for 2004			<u>(1,200)</u>
Net deferred tax expense for 2004			<u>\$18,800</u>
Current tax expense for 2004 (Income tax payable)			\$22,040
Deferred tax expense for 2004			<u>18,800</u>
Income tax expense for 2004			<u>\$40,840</u>
(d) Income before income taxes			\$100,000
Income tax expense			
Current	\$22,040		
Deferred	<u>18,800</u>		<u>40,840</u>
Net income			<u>\$ 59,160</u>

TIME AND PURPOSE OF CASES

Case 19-1 (Time 15-20 minutes)

Purpose—to have the student explain the objectives in accounting for income taxes in the financial statements and the basic principles that are applied in meeting the objectives. The student is also required to list the steps involved in the annual computation of deferred income taxes.

Case 19-2 (Time 20-25 minutes)

Purpose—to provide the student an opportunity to discuss the principles of the asset-liability method, how the deferred tax effects of temporary differences are computed, and how the deferred tax consequences of temporary differences are classified on a balance sheet.

Case 19-3 (Time 20-25 minutes)

Purpose—to develop an understanding of temporary and permanent differences. The student is required to explain the nature of four differences and to explain why each is a permanent or temporary difference. Two of the four situations are challenging. Also, the nature of and the classification of deferred tax accounts are examined.

Case 19-4 (Time 20-25 minutes)

Purpose—to develop an understanding of deferred taxes and balance sheet disclosure. This case has two parts. In the first part, the student is required to indicate whether deferred income taxes should be recognized for each of four items. In the second part, the student must discuss the conditions under which deferred taxes will be classified as a noncurrent item in the balance sheet.

Case 19-5 (Time 20-25 minutes)

Purpose—to develop an understanding of how to determine the appropriate tax rate to use in computing deferred taxes when different tax rates are enacted for various years affected by existing temporary differences.

Case 19-6 (Time 20-25 minutes)

Purpose—to develop an understanding of the concept of future taxable amounts and future deductible amounts. Also, to develop an understanding of how the carryback and carryforward provisions affect the computation of deferred tax assets and liabilities when there are multiple tax rates enacted for the various periods affected by existing temporary differences.

Case 19-7 (Time 20-25 minutes)

Purpose—to provide the student an opportunity to examine the income effects of deferred taxes, including ethical issues.

SOLUTIONS TO CASES

CASE 19-1

- (a) The objectives in accounting for income taxes are:
1. To recognize the amount of taxes payable or refundable for the current year.
 2. To recognize deferred tax liabilities and assets for the future tax consequences of events that have been recognized in the financial statements or tax returns.
- (b) To implement the objectives, the following basic principles are applied in accounting for income taxes at the date of the financial statements:
1. A current tax liability or asset is recognized for the estimated taxes payable or refundable on the tax return for the current year.
 2. A deferred tax liability or asset is recognized for the estimated future tax effects attributable to temporary differences and loss carryforwards using the enacted marginal tax rate.
 3. The measurement of current and deferred tax liabilities and assets is based on provisions of the enacted tax law; the effects of future changes in tax laws or rates are not anticipated.
 4. The measurement of deferred tax assets is adjusted, if necessary, to not recognize tax benefits that, based on available evidence, are not expected to be realized.
- (c) The procedures for the annual computation of deferred income taxes are as follows:
1. Identify: (1) the types and amounts of existing temporary differences and (2) the nature and amount of each type of operating loss and tax credit carryforward and the remaining length of the carryforward period.
 2. Measure the total deferred tax liability for taxable temporary differences using the enacted marginal tax rate.
 3. Measure the total deferred tax asset for deductible temporary differences and operating loss carryforwards using the enacted marginal tax rate.
 4. Measure deferred tax assets for each type of tax credit carryforward.
 5. Reduce deferred tax assets by a valuation allowance if, based on the weight of available evidence, it is more likely than not that some portion or all of the deferred tax assets will not be realized. The valuation allowance should be sufficient to reduce the deferred tax asset to the amount that is more likely than not to be realized.

CASE 19-2

- (a) The following basic principles are applied in accounting for income taxes at the date of the financial statements:
1. A current tax liability or asset is recognized for the estimated taxes payable or refundable on the tax return for the current year.
 2. A deferred tax liability or asset is recognized for the estimated future tax effects attributable to temporary differences and loss carryforwards using the enacted marginal tax rate.
 3. The measurement of current and deferred tax liabilities and assets is based on provisions of the enacted tax law; the effects of future changes in tax laws or rates are not anticipated.
 4. The measurement of deferred tax assets is adjusted, if necessary, to not recognize tax benefits that, based on available evidence, are not expected to be realized.
- (b) Majoli should do the following in accounting for the temporary differences.
1. Identify the types and amounts of existing temporary differences. The depreciation policies give rise to a temporary difference that will result in net future taxable amounts (because depreciation for tax purposes exceeds the depreciation for financial statements). Rents are taxed in the year they are received but reported on the income statement in the year earned. The collection of rent revenue in advance will cause future deductible amounts.

CASE 19-2 (Continued)

2. Measure the total deferred tax liability for the taxable temporary difference using the enacted marginal tax rate.
 3. Measure the total deferred tax asset for the deductible temporary difference using the enacted marginal tax rate.
 4. Reduce the deferred tax asset by a valuation allowance, if based on the weight of available evidence, it is more likely than not that some portion or all of the deferred tax asset will not be realized.
- (c) Deferred tax accounts are reported on the balance sheet as assets and liabilities. They should be classified in a net current and a net noncurrent amount. An individual deferred tax liability or asset is classified as current or noncurrent based on the classification of the related asset or liability for financial reporting. A deferred tax asset or liability is considered to be related to an asset or liability if reduction of the asset or liability will cause the temporary difference to reverse or turn around. A deferred tax liability or asset that is not related to an asset or liability for financial reporting, including deferred tax assets related to loss carryforwards, shall be classified according to the expected reversal date of the temporary difference.

Majoli's deferred tax liability resulting from the depreciation difference should be reported as a long-term liability because a related asset (the asset being depreciated) is in a noncurrent classification.

Majoli's deferred tax asset resulting from the advance collection of rents should be reported as a current asset because the related obligation (Unearned Revenue) is classified as a current liability.

CASE 19-3

- (a)
1. Temporary difference. The full estimated three years of warranty costs reduce the current year's pretax financial income, but will reduce taxable income in varying amounts each respective year, as paid. Assuming the estimate as to each warranty is valid, the total amounts deducted for accounting and for tax purposes will be equal over the three-year period for a given warranty. This is an example of an expense that, in the first period, reduces pretax financial income more than taxable income and, in later years, reverses. This type of temporary difference will result in future deductible amounts which will give rise to the current recognition of a deferred tax asset. Another way to evaluate this situation is to compare the carrying value of the warranty liability with its tax basis (which is zero). When the liability is settled in a future year an expense will be recognized for tax purposes but none will be recognized for financial reporting purposes. Therefore, tax benefits for the tax deductions should result from the future settlement of the liability.
 2. Temporary difference. The difference between the tax basis and the reported amount (book basis) of the depreciable property will result in taxable or deductible amounts in future years when the reported amount of the asset is recovered (through use or sale of the asset); hence, it is a temporary difference.
 3. Temporary difference and permanent difference. The investor's share of earnings of an investee (other than subsidiaries and corporate joint ventures) accounted for by the equity method is included in pretax financial income while only 20% of dividends received from some domestic corporations are included in taxable income. Of the amount included in pretax financial income, 80% is a permanent difference attributable to the dividends-received deduction permitted when computing taxable income. Twenty percent of the amount included in pretax financial income is potentially a temporary difference which will reverse as dividends are received. If the investee distributes 10% of its earnings, then one-half of the potential temporary difference is eliminated and 10% of the amount included in pretax financial income is a temporary difference.

CASE 19-3 (Continued)

4. Temporary difference. For financial reporting purposes, any gain experienced in an involuntary conversion of a nonmonetary asset to a monetary asset must be recognized in the period of conversion. For tax purposes, this gain may be deferred if the total proceeds are reinvested in replacement property within a certain period of time. When such a gain is deferred, the tax basis of the replacement property is less than its carrying value and this difference will result in future taxable amounts. Hence, this is a temporary difference.

(b) Deferred tax accounts are reported on the balance sheet as assets and liabilities. They should be classified in a net current and a net noncurrent amount. An individual deferred tax liability or asset is classified as current or noncurrent based on the classification of the related asset or liability for financial reporting. A deferred tax asset or liability is considered to be related to an asset or liability if reduction of the asset or liability will cause the temporary difference to reverse or turn around. A deferred tax liability or asset that is not related to an asset or liability for financial reporting, including deferred tax assets related to loss carryforwards, shall be classified according to the expected reversal date of the temporary difference.

Thus, a deferred tax account may be reported as a current asset, a current liability, a noncurrent asset or a noncurrent liability. Generally, a noncurrent deferred tax asset appears in the "Other assets" section of the balance sheet while a noncurrent deferred tax liability appears in the "Long-term liabilities" section.

CASE 19-4

Part A.

(a) Deferred income taxes are reported in the financial statements when temporary differences exist at the balance sheet date. Deferred taxes are never reported for permanent differences.

The tax consequences of most events recognized in the financial statements for a year are included in determining income taxes currently payable. However, tax laws often differ from the recognition and measurement requirements of financial accounting standards, and differences can arise between: (1) the amount of taxable income and pretax financial income for a year and (b) the tax bases of assets or liabilities and their reported amounts in financial statements. An assumption inherent in an enterprise's statement of financial position prepared in accordance with generally accepted accounting principles is that the reported amounts of assets and liabilities will be recovered and settled, respectively. Based on that assumption, a difference between the tax basis of an asset or a liability and its reported amount in the statement of financial position will result in taxable or deductible amounts in some future year(s) when the reported amounts of assets are recovered and the reported amounts of liabilities are settled.

A deferred tax liability is reported for the increase in taxes payable in future years as a result of taxable temporary differences existing at the balance sheet date. A deferred tax asset is reported for the increase in taxes refundable in future years as a result of deductible temporary differences existing at the balance sheet date. The most common temporary differences arise from including revenues or expenses in taxable income in a period later or earlier than the period in which they are included in pretax financial income.

(b) 1. Gross profit on installment sales—Deferred income taxes would be recognized when gross profit on installment sales is included in pretax financial income in the year of sale and included in taxable income when later collected.

2. Revenues on long-term construction contracts—Deferred income taxes would be recognized whenever revenues on long-term construction contracts are recognized for financial reporting purposes on the percentage-of-completion basis but deferred for tax purposes.

CASE 19-4 (Continued)

3. Estimated costs of product warranty contracts—Deferred income taxes should usually be recognized because estimated costs of product warranty contracts should be recognized for financial reporting purposes in the year of sale and reported for tax purposes when paid.
4. Premiums on officers' life insurance with Davenport as beneficiary—This is a permanent difference and deferred income taxes should not be recognized. Premiums on officers' life insurance with Davenport as beneficiary should be recognized in Davenport Company's income statement but are not a deductible expense for tax purposes.

Part B.

Deferred income taxes related to a noncurrent asset or liability would be classified as a noncurrent item in the balance sheet. Deferred income taxes are related to an asset or liability if reduction of the asset or liability causes the underlying temporary difference to reverse.

Deferred income taxes that are not related to an asset or liability because: (1) there is no associated asset or liability or (2) reduction of an associated asset or liability will not cause the temporary difference to reverse, would be classified based on the expected reversal date of the specific temporary difference. An expected reversal date beyond one year (or the normal operating cycle) would require noncurrent classification of the deferred income taxes.

Deferred income taxes are to be reported in the balance sheet in the net current and net noncurrent portions. Therefore, deferred income taxes would be classified in the balance sheet as a noncurrent liability when the noncurrent deferred tax liabilities relating to temporary differences exceed the noncurrent deferred tax assets relating to temporary differences. Conversely, they would be classified in the balance sheet as a noncurrent asset when the noncurrent deferred tax assets relating to temporary differences exceed the noncurrent deferred tax liabilities relating to temporary differences.

CASE 19-5

- (a) The 45% tax rate would be used in computing the deferred tax liability at December 31, 2004, if a net operating loss (an NOL) is expected in 2005 that is to be carried back to 2004 (the enacted tax rate is 45% in 2004). (See discussion below.)
- (b) The 40% tax rate would be used in computing the deferred tax liability at December 31, 2004, if taxable income is expected in 2005 (the tax rate enacted for 2005 is 40% and 2005 is the year in which the future taxable amount is expected to occur). (See discussion below.)
- (c) The 34% tax rate would be used in computing the deferred tax liability at December 31, 2004, if a net operating loss (an NOL) is expected in 2005 that is to be carried forward to 2006 (the tax rate enacted for 2006 is 34%). (See discussion below.)

Discussion:

In determining the future tax consequences of temporary differences, it is helpful to prepare a schedule which shows in which future years existing temporary differences will result in taxable or deductible amounts. The appropriate enacted tax rate is applied to these future taxable and deductible amounts. In determining the appropriate tax rate, you must make assumptions about whether the entity will report taxable income or losses in the various future years expected to be affected by the reversal of existing temporary differences. Thus, you calculate the taxes payable or refundable in the future due to existing temporary differences. In making these calculations, you apply the provisions of the tax laws and enacted tax rates for the relevant periods.

CASE 19-5 (Continued)

For future taxable amounts:

1. If taxable income is expected in the year that a future taxable amount is scheduled, use the enacted rate for that future year to calculate the related deferred tax liability.
2. If an NOL is expected in the year that a future taxable amount is scheduled, use the enacted rate of what would be the prior year the NOL would be carried back to or the enacted rate of the future year to which the carryforward would apply, whichever is appropriate, to calculate the related deferred tax liability.

For future deductible amounts:

1. If taxable income is expected in the year that a future deductible amount is scheduled, use the enacted rate for that future year to calculate the related deferred tax asset.
2. If an NOL is expected in the year that a future deductible amount is scheduled, use the enacted rate of what would be the prior year the NOL would be carried back to or the enacted rate of the future year to which the carryforward would apply, whichever is appropriate, to calculate the related deferred tax asset.

CASE 19-6

- (a) Future taxable amounts increase taxable income relative to pretax financial income in the future due to temporary differences existing at the balance sheet date. Future deductible amounts decrease taxable income relative to pretax financial income in the future due to existing temporary differences.

A deferred tax liability should be recorded for the deferred tax consequences attributable to the future taxable amounts scheduled and a deferred tax asset should be recorded for the deferred tax consequences attributable to the future deductible amounts scheduled.

- (b) The carryback and carryforward provisions will affect the amounts to be reported for the resulting deferred tax asset and deferred tax liability.

In computing deferred tax account balances to be reported at a balance sheet date, the appropriate enacted tax rate is applied to future taxable and deductible amounts related to temporary differences existing at the balance sheet date. In determining the appropriate tax rate, you must make assumptions about whether the entity will report taxable income or losses in the various future years expected to be affected by the existing temporary differences. Thus, you calculate the taxes payable or refundable in the future due to existing temporary differences. In making these calculations, you apply the provisions of the tax laws and enacted tax rates for the relevant periods.

For future taxable amounts:

1. If taxable income is expected in the year that a future taxable amount is scheduled, use the enacted rate for that future year to calculate the related deferred tax liability.
2. If an NOL is expected in the year that a future taxable amount is scheduled, use the enacted rate of what would be the prior year the NOL would be carried back to or the enacted rate of the future year to which the carryforward would apply, whichever is appropriate, to calculate the related deferred tax liability.

For future deductible amounts:

1. If taxable income is expected in the year that a future deductible amount is scheduled, use the enacted rate for that future year to calculate the related deferred tax asset.
2. If an NOL is expected in the year that a future deductible amount is scheduled, use the enacted rate of what would be the prior year the NOL would be carried back to or the enacted rate of the future year to which the carryforward would apply, whichever is appropriate, to calculate the related deferred tax asset.

CASE 19-7

- (a) To realize a sizable deferred tax liability, Mesa must have used an accelerated depreciation method for tax purposes while using straight-line depreciation for its financial statements. Once the temporary difference reversed, taxable income would exceed financial accounting income. Mesa would be required to pay the taxes it “deferred” from the years when tax depreciation exceeded book depreciation. To stop this from happening, Mesa would have to sell these fixed assets. It probably would have to report a gain on sale, but it likely would be taxed at the favorable capital gains rates. If Mesa buys new fixed assets and again uses accelerated depreciation for tax purposes and straight-line for books, it will perpetuate a “deferral” of income taxes.
- (b) The deferral of income taxes means that due to temporary differences caused by the difference in financial accounting principles and tax laws, a company will be able to withhold paying its income taxes (or reaping an income tax benefit) until future periods. The practice of selling-off assets before the temporary difference reverses means that the company may pay a lesser amount of taxes to the government.
- (c) The primary stakeholders who could be harmed by Mesa’s income tax practice are the federal government, which receives fewer taxes as a result of this practice. Ultimately, other taxpayers have to pay more. In addition, if replacement fixed assets are very costly to acquire, positive cash flow is reduced. Though the impact should not be great, investors and creditors are affected negatively.
- (d) As a CPA, Henrietta is obligated to uphold objectivity and integrity in the practice of financial reporting. If she thinks that this practice is unethical, then she needs to communicate her concerns to the highest levels of management within Mesa, including members of the Board of Directors and/or the Audit Committee. However, it would appear here that Mesa is simply trying to minimize its income taxes which should not be considered unethical.

FINANCIAL REPORTING PROBLEM

- (a) (1) Per 3M's 2001 income statement:
- | | |
|-----------------------------------|----------------|
| “Provision for income taxes | \$702 million” |
|-----------------------------------|----------------|
- (2) Per 3M's December 31, 2001 balance sheet:
- | | |
|-----------------------------|----------------|
| In current assets: | |
| “Deferred income taxes..... | \$290 million” |
| In other assets: | |
| “Deferred income taxes..... | \$152 million” |
| In current liabilities: | |
| “Deferred income taxes..... | \$16 million” |
| In other liabilities: | |
| “Deferred income taxes..... | \$469 million” |
- (3) Per 3M's 2001 statement of cash flows:
- | | |
|---|----------------|
| In cash flows provided by operating activities: | |
| “Deferred income tax provision | \$1 million” |
| “Income taxes payable | \$148 million” |
| In supplemental cash flow information: | |
| “Cash income tax payments..... | \$520 million” |
- (b) 3M's effective tax rates:
1999: (35.8%), 2000: (34.5%), 2001: (32.1%)
- (c) Provision for income taxes:
- | | |
|--------------------------------|--------------|
| Current (\$376 + \$47 + \$278) | \$701 |
| Deferred ((-\$7) + \$6 + \$2) | <u>1</u> |
| Total | <u>\$702</u> |
- (d) Significant components of 3M's deferred tax assets and liabilities at fiscal year-ends were as follows:

FINANCIAL REPORTING PROBLEM (Continued)

<u>(In millions)</u>	<u>2001</u>
Employee benefit costs	\$ 225
Product and other claims	173
Severance and other restructuring costs	73
Product and other insurance receivables	(286)
Accelerated depreciation	(464)
Other	<u>236</u>
Net deferred tax asset (liability)	<u>\$ (43)</u>

FINANCIAL STATEMENT ANALYSIS CASE

- (a) Of the total provision for income taxes (reported in the income statement) the “current taxes” portion represents the taxes payable in cash while the “deferred taxes” represent the taxes payable in future years (although in this case, because the deferred taxes are a credit, they represent tax benefits receivable in future years).
- (b) Future taxable amounts increase taxable income relative to pretax financial income in the future due to temporary differences existing at the balance sheet date. Future deductible amounts decrease taxable income relative to pretax financial income in the future due to existing temporary differences.

A deferred tax liability should be recorded for the deferred tax consequences attributable to the future taxable amounts scheduled and a deferred tax asset should be recorded for the deferred tax consequences attributable to the future deductible amounts scheduled.

- (c) The carryback and carryforward provisions will affect the amounts to be reported for the resulting deferred tax asset and deferred tax liability.

In computing deferred tax account balances to be reported at a balance sheet date, the appropriate enacted tax rate is applied to future taxable and deductible amounts related to temporary differences existing at the balance sheet date. In determining the appropriate tax rate, you must make assumptions about whether the entity will report taxable income or losses in the various future years expected to be affected by the existing temporary differences. Thus, you calculate the taxes payable or refundable in the future due to existing temporary differences. In making these calculations, you apply the provisions of the tax laws and enacted tax rates for the relevant periods.

For future taxable amounts:

1. If taxable income is expected in the year that a future taxable amount is scheduled, use the enacted rate for that future year to calculate the related deferred tax liability.

FINANCIAL STATEMENT ANALYSIS CASE (Continued)

- 2. If an NOL is expected in the year that a future taxable amount is scheduled, use the enacted rate of what would be the prior year the NOL would be carried back to or the enacted rate of the future year to which the carryforward would apply, whichever is appropriate, to calculate the related deferred tax liability.**

For future deductible amounts:

- 1. If taxable income is expected in the year that a future deductible amount is scheduled, use the enacted rate for that future year to calculate the related deferred tax asset.**
- 2. If an NOL is expected in the year that a future deductible amount is scheduled, use the enacted rate of what would be the prior year the NOL would be carried back to or the enacted rate of the future year to which the carryforward would apply, whichever is appropriate, to calculate the related deferred tax asset.**

COMPARATIVE ANALYSIS CASE

(a) 2001 provision for income taxes:

Coca-Cola:	Current portion	\$1,635,000,000
	Deferred portion	<u>56,000,000</u>
	Total expense	<u>\$1,691,000,000</u>
PepsiCo:	Current portion	\$ 1,205,000,000
	Deferred portion	<u>162,000,000</u>
	Total expense	<u>\$ 1,367,000,000</u>

(b) 2001 income tax payments:

Coca-Cola	Approximately \$1,351,000,000
PepsiCo	\$857,000,000

(c) The 2001 U.S. Federal statutory tax rate was 35%.

Coca-Cola's effective tax rate in 2001 was 29.8%.

PepsiCo's effective tax rate in 2001 was 33.9%.

Their effective tax rates differ due to the items listed in the reconciliation of U.S. Federal statutory tax rate and effective tax rates. PepsiCo's rate is higher because of merger-related costs and impairment and restructuring charges.

(d) (In millions)	Coca-Cola	PepsiCo
1. Gross deferred tax assets	\$1,553	\$ (1,681)
Gross deferred tax liabilities	1,020	2,257

(e) Net operating loss carryforwards at year-end 2001:

Coca-Cola had \$1,229 million of operating loss carryforwards available to reduce future taxable income of certain international subsidiaries. Its loss carryforwards of \$440 million must be utilized within the next five years, and \$789 million can be utilized over an indefinite period.

PepsiCo had \$3.2 billion of net operating loss carryforwards available to reduce future taxable income of certain subsidiaries. \$.1 billion expire in 2002, \$2.8 billion expire at various times between 2002 and 2017, and \$.3 billion may be carried forward indefinitely.

RESEARCH CASES

CASE 1

The answer depends on the companies selected.

CASE 2

- (a) The major issue is whether deferred tax liabilities are true liabilities. For growing firms, temporary differences originating in a given period will exceed temporary differences reversing in the same period. When this is the case, net temporary differences do not require cash outflows. Another issue is that even if cash outflows are required in some future period, the liability is overstated because it is not recorded at its present value.
- (b) Some analysts will treat the deferred tax liability as equity instead of debt, based on the argument that prior income tax expense was overstated. Other analysts may argue that treating the deferred tax liability as debt is appropriate as it represents a conservative approach to analysis. A third approach is to treat the deferred tax liability as part debt and part equity if the likelihood of net reversals is considered to be high.

INTERNATIONAL REPORTING CASE

- | | | | |
|------------|---|-------------|-------------|
| (a) | Income Tax Expense..... | 8.2 | |
| | Deferred Tax Liability (or Asset)..... | | 8.2 |
| (b) | Deferred Tax Asset..... | 87.5 | |
| | Retained Earnings..... | | 87.5 |
- (c) The note indicates that Tomkins does not recognize deferred tax assets for post-retirement benefits. If like in the U.S., U.K. companies deduct these expenses in the future when paid, the future payments reflect future deductible amounts. This would result in a deferred tax asset and could explain the entry in part (b).**
- (d) While U.K. rules are based on the liability method, these liabilities are recorded only when it is probable that the liabilities will be realized. In the U.S., deferred taxes are recognized for tax consequences of events that have been recognized in the financial statements. Only for deferred tax assets is the probability of realization considered. Thus, deferred tax liabilities are likely understated for U.K. companies compared to U.S. companies.**

PROFESSIONAL SIMULATION

Journal Entries

Income Tax Expense	40,840	
Deferred Tax Asset.....	1,200	
Deferred Tax Liability		20,000
Income Tax Payable		22,040

Calculation of Deferred Taxes

Temporary Difference	Future Taxable (Deductible) Amounts	Tax Rate	Deferred Tax	
			(Asset)	Liability
Warranty costs	\$ (3,000)	40%	\$(1,200)	
Construction profits	30,000	40%		\$12,000
Depreciation	<u>20,000</u>	40%		<u>8,000</u>
Totals	<u>\$47,000</u>		<u>\$(1,200)</u>	<u>\$20,000*</u>

*Because of a flat tax rate, these totals can be reconciled:
 $\$47,000 \times 40\% = \$1,200 + \$20,000.$

Calculation of Taxable Income

Pretax financial income	\$100,000
Permanent differences	
Fine for pollution	3,500
Tax-exempt interest	(1,400)
Originating temporary differences	
Excess warranty expense per books (\$5,000 – \$2,000)	3,000
Excess construction profits per books (\$92,000 – \$62,000)	(30,000)
Excess depreciation per tax (\$80,000 – \$60,000)	(20,000)
Taxable income	<u>\$ 55,100</u>
Taxable income for 2004	\$ 55,100
Tax rate	<u>40%</u>
Income tax payable for 2004	<u>\$ 20,040</u>

PROFESSIONAL SIMULATION (Continued)

Deferred tax liability at the end of 2004		\$ 20,000
Deferred tax liability at the beginning of 2004		<u>0</u>
Deferred tax expense for 2004		<u>\$ 20,000</u>
Deferred tax asset at the end of 2004		\$ 1,200
Deferred tax asset at the beginning of 2004		<u>0</u>
Deferred tax benefit for 2004		<u>\$ (1,200)</u>

Financial Statements

Income before income taxes		\$100,000
Income tax expense		
Current	\$22,040	
Deferred	<u>18,800</u>	<u>40,840</u>
Net income		<u>\$ 59,160</u>

CHAPTER 20

Accounting for Pensions and Postretirement Benefits

ASSIGNMENT CLASSIFICATION TABLE

Topics	Questions	Brief			Cases
		Exercises	Exercises	Problems	
1. Basic definitions and concepts related to pension plans.	1, 2, 3, 4, 5, 6, 7, 8, 9, 13, 14, 24		16		1, 2, 3, 7
2. Work sheet preparation.		3	3, 4, 7, 10, 12, 15	1, 2, 7, 8, 9	
3. Income statement recognition, computation of pension expense.	10, 11, 12, 14, 17, 18	1, 4	1, 2, 3, 6, 12, 13, 14, 15, 16, 17, 18, 20, 21	1, 2, 3, 4, 5, 6, 9	4, 5
4. Balance sheet recognition, computation of pension expense.	16, 20, 21, 22, 23	2	3, 9, 11, 13, 14, 15, 17, 18, 19	2, 3, 4, 5, 6, 9	4, 5, 6, 7
5. Minimum liability computation.	20, 22	8, 9, 10	11, 12, 13, 14, 16, 17, 18, 19	3, 4, 5, 7, 8, 9	2, 4
6. Corridor calculation.	19	7	8, 14, 20, 21	3, 5, 6, 7, 8, 9	3, 5, 6
7. Reconciliation schedule.	25	6	3, 9, 10, 14, 15, 19	1, 2, 3, 4, 6	
8. Prior service cost.	13, 14, 22	5, 8, 9, 10	1, 2, 3, 5, 9, 11, 12, 13, 14, 15, 19, 21	1, 2, 3, 4, 5, 7, 8, 9	1
9. Unrecognized net gain or loss.	15, 17	7	8, 9, 14, 19, 20, 21	1, 2, 3, 4, 5, 6, 7, 8, 9	4
10. Disclosure issues.	25		12, 13		3, 4
11. Special types of plans.	26				
*12. Postretirement benefits.	27, 28, 29, 30, 31	11, 12	22, 23, 24, 25	10	

*This material is dealt with in an Appendix to the chapter.

ASSIGNMENT CHARACTERISTICS TABLE

Item	Description	Level of Difficulty	Time (minutes)
E20-1	Pension expense, journal entries.	Simple	5-10
E20-2	Computation of pension expense.	Simple	10-15
E20-3	Preparation of pension work sheet with reconciliation.	Moderate	15-25
E20-4	Basic pension work sheet.	Simple	10-15
E20-5	Application of years-of-service method.	Moderate	15-25
E20-6	Computation of actual return.	Simple	10-15
E20-7	Basic pension work sheet.	Moderate	15-25
E20-8	Application of the corridor approach.	Moderate	20-25
E20-9	Disclosures: Pension expense and reconciliation schedule.	Moderate	25-35
E20-10	Pension work sheet with reconciliation schedule.	Moderate	20-25
E20-11	Computation of minimum liability, entry.	Moderate	10-15
E20-12	Pension expense, journal entries, statement presentation, minimum liability.	Moderate	20-30
E20-13	Pension expense, journal entries, minimum liability, statement presentation.	Moderate	20-30
E20-14	Computation of actual return, gains and losses, corridor test, prior service cost, minimum liability, pension expense, and reconciliation.	Complex	35-45
E20-15	Work sheet for E20-14.	Complex	40-50
E20-16	Pension expense, minimum liability, journal entries.	Moderate	15-20
E20-17	Pension expense, minimum liability, statement presentation.	Moderate	30-45
E20-18	Minimum liability, journal entries, balance sheet items.	Moderate	20-25
E20-19	Reconciliation schedule, minimum liability, and unrecognized loss.	Moderate	20-25
E20-20	Amortization of unrecognized net gain or loss (corridor approach), pension expense computation.	Moderate	25-35
E20-21	Amortization of unrecognized net gain or loss (corridor approach).	Moderate	30-40
*E20-22	Postretirement benefit expense computation.	Simple	10-12
*E20-23	Postretirement benefit expense computation.	Simple	10-12
*E20-24	Postretirement benefit work sheet.	Moderate	15-20
*E20-25	Postretirement benefit reconciliation schedule.	Simple	10-15
P20-1	Two-year work sheet and reconciliation schedule.	Moderate	40-50
P20-2	Three-year work sheet, journal entries, and reconciliation schedules.	Complex	45-55
P20-3	Pension expense, journal entries, minimum pension liability, amortization of unrecognized loss, reconciliation schedule.	Complex	40-50
P20-4	Pension expense, minimum liability, journal entries for two years.	Moderate	30-40
P20-5	Computation of pension expense, amortization of unrecognized net gain or loss (corridor approach), journal entries for three years, and minimum pension liability computation.	Complex	45-55
P20-6	Computation of unrecognized prior service cost amortization, pension expense, journal entries, net gain or loss, and reconciliation schedule.	Complex	45-60
P20-7	Pension work sheet, minimum liability.	Moderate	35-45

ASSIGNMENT CHARACTERISTICS TABLE (Continued)

Item	Description	Level of Difficulty	Time (minutes)
P20-8	Comprehensive 2-year work sheet.	Complex	45-60
P20-9	Comprehensive 2-year work sheet.	Moderate	40-45
*P20-10	Postretirement benefit work sheet with reconciliation.	Moderate	30-35
C20-1	Pension terminology and theory.	Moderate	30-35
C20-2	Pension terminology.	Moderate	25-30
C20-3	Basic terminology.	Simple	20-25
C20-4	Major pension concepts.	Moderate	30-35
C20-5	Implications of FASB Statement No. 87.	Complex	50-60
C20-6	Unrecognized gains and losses, corridor amortization.	Moderate	30-40
C20-7	Nonvested employees—an ethical dilemma	Moderate	20-30

ANSWERS TO QUESTIONS

1. A **private pension plan** is an arrangement whereby a company undertakes to provide its retired employees with benefits that can be determined or estimated in advance from the provisions of a document or from the company's practices.

In a **contributory** pension plan the employees bear part of the cost of the stated benefits whereas in a **noncontributory** plan the employer bears the entire cost.

2. A **defined contribution plan** specifies the employer's contribution to the plan usually based on a formula, which may consider such factors as age, length of service, employer's profit, or compensation levels.

A **defined benefit plan** specifies a determinable pension benefit that the employee will receive at a time in the future. The employer must determine the amount that should be contributed now to provide for the future promised benefits.

In a **defined contribution plan**, the employer's obligation is simply to make a contribution to the plan each year based on the plan formula. The benefit of gain or risk of loss from assets contributed to the plan is borne by the employee. In a **defined benefit plan**, the employer's obligation is to make sufficient contributions each year to provide for the promised future benefits. Therefore, the employer is at risk to the extent that contributions will not be adequate to meet the promised benefits.

3. The **employer** is the organization sponsoring the pension plan. The employer incurs the costs and makes contributions to the pension fund. Accounting for the employer involves: (1) allocating the cost of the pension plan to the proper accounting periods, (2) measuring the amount of pension obligation resulting from the plan, and (3) disclosing the status and effects of the plan in the financial statements.

The **pension fund** or plan is the entity which receives the contributions from the employer, administers the pension assets, and makes the benefit payments to the pension recipients. Accounting for the fund involves identifying receipts as contributions from the employer sponsor, income from fund investments, and computing the amounts due to individual pension recipients. Accounting for the pension costs and obligations of the employer is the topic of this chapter; accounting for the pension fund is not.

4. When the term "fund" is used as a **noun**, it refers to assets accumulated in the hands of a funding agency for the purpose of meeting pension benefits when they become due. When the term "fund" is used as a **verb**, it means to pay over to a funding agency (as to fund future pension benefits or to fund pension cost).

5. An actuary's role is to ensure that the company has established an appropriate funding pattern to meet its pension obligations, to make predictions and assumptions about future events and conditions that affect pension costs, and to assist the accountant in measuring facets of the pension plan that must be reported (costs, liabilities and assets). In order to determine the company's pension obligation, the actuary must first determine the expected benefits that will be paid in the future. To accomplish this requires the actuary to make actuarial assumptions, which are estimates of the occurrence of future events affecting pension costs, such as mortality, withdrawals, disablement and retirement, changes in compensation, and changes in discount rates to reflect the time value of money.

6. In measuring the amount of pension benefits under a defined benefit pension plan, an actuary must consider such factors as mortality rates, employee turnover, interest and earnings rates, early retirement frequency, and future salaries.

Questions Chapter 20 (Continued)

7. One measure of the pension obligation is the **vested benefit obligation**. This measure uses only current salary levels and includes only vested benefits; that is, benefits the employee is already entitled to receive even if the employee renders no additional services under the plan.

A company's **accumulated benefit obligation** is the actuarial present value of benefits attributed by the pension benefit formula to service before a specified date and is based on employee service and compensation prior to that date. The accumulated benefit obligation differs from the projected benefit obligation in that it includes no assumption about future compensation levels. The **projected benefit obligation** is based on vested and nonvested services using future salaries.

8. **Noncapitalization** in pension accounting means no asset or liability is recorded and reported unless the amount funded is different from the amount expensed by the employer. Unrecognized is the real pension obligation, the pension plan assets, prior service costs (retroactive benefits), and unamortized gains and losses.

The **capitalization** approach supports the economic substance of the pension plan as opposed to its legal form and records and reports all assets and liabilities of the plan as they relate to the employer. The employer is the ultimate source of funds to meet the benefit obligations.

The FASB compromised and chose a method of pension accounting that leans toward capitalization but does not require recognition of the pension plan assets and liabilities, only disclosure of all such items.

9. **Cash-basis** accounting recognizes pension cost as being equal to the amount of cash paid by the employer to the pension fund in any period; pension funding serves as the basis for cost recognition under the cash basis.

Accrual-basis accounting recognizes pension cost as it is incurred and attempts to recognize pension cost in the same period in which the company receives benefits from the services of its employees.

Not infrequently, the amount which an employer must fund for pension purposes during a particular period is unrelated to the economic benefits derived from the pension plan in that period. Cash-basis accounting recognizes the amount funded as periodic pension cost and the amount funded may be discretionary and vary widely from year to year. Funding is a matter of financial management, based on working capital availability, tax considerations, and other matters unrelated to accounting considerations.

10. The five components of pension expense are:
- (1) Service cost component—the actuarial present value of benefits attributed by the pension benefit formula to employee service during the period.
 - (2) Interest cost component—the increase in the projected benefit obligation as a result of the passage of time.
 - (3) Actual return on plan assets component—the reduction in pension cost for actual investment income from plan assets and the change in the market value of plan assets.
 - (4) Amortization of prior service cost—the cost of retroactive benefits granted in a plan amendment (including initiation of a plan).
 - (5) Gains and losses—a change in the value of either the projected benefit obligation or the plan assets resulting from experience different from that assumed or expected or from a change in an actuarial assumption.

Questions Chapter 20 (Continued)

11. The **service cost component** of net periodic pension expense is determined as the actuarial present value of benefits attributed by the pension benefit formula to employee service during the period. The plan's benefit formula provides a measure of how much benefit is earned and, therefore, how much cost is incurred in each individual period. The FASB concluded that future compensation levels had to be considered in measuring the present obligation and periodic pension expense if the plan benefit formula incorporated them.
12. The **interest component** is the interest for the period on the projected benefit obligation outstanding during the period. The assumed discount rate should reflect the rates at which pension benefits could be effectively settled (settlement rates). Other rates of return on high-quality fixed-income investments might also be employed.
13. **Service cost** is the actuarial present value of benefits attributed by the pension benefit formula to employee service during the period. Actuaries compute service cost at the present value of the new benefits earned by employees during the year. **Prior service cost** is the cost of retroactive benefits granted in a plan amendment or initiation of a pension plan. The cost of the retroactive benefits is the increase in the projected benefit obligation at the date of the amendment.
14. When a defined benefit plan is either initiated or amended, credit is often given to employees for years of service provided before the date of initiation or amendment. The cost of these retroactive benefits are referred to as **prior service costs**. Employers grant retroactive benefits because they expect to receive benefits in the future. As a result, prior service cost should not be recognized as pension expense entirely in the year of amendment or initiation, but should be recognized during the service periods of those employees who are expected to receive benefits under the plan. Consequently, unrecognized prior service cost is amortized over the service life of employees who will receive benefits and is a component of net periodic pension expense each period.
15. **Liability gains and losses** are unexpected gains or losses from changes in the projected benefit obligation. Liability gains (resulting from unexpected decreases) and liability losses (resulting from unexpected increases) are deferred and combined in the Unrecognized Net Gain or Loss account. They are accumulated from year to year in a memo record account.
16. If pension expense recognized in a period exceeds the current amount funded, a liability account referred to as **Accrued Pension Cost** arises; the account would be reported either as a current or long-term liability, depending on the ultimate date of payment.

If the current amount funded exceeds the amount recognized as pension expense, an asset account referred to as **Prepaid Pension Cost** arises; the account would be reported as a current asset if it is current in nature; if noncurrent, it would be reported in the other assets section. Often, one general account is used referred to as Accrued/Prepaid Pension Cost. If it has a credit balance, it is identified as a liability; if a debit balance, it is an asset.

17. Computation of actual return on plan assets

Fair value of plan assets at end of period		\$10,150,000
Deduct: Fair value of plan assets at beginning of period		<u>9,200,000</u>
Increase in fair value of assets		950,000
Deduct: Contributions to plan during the period	\$1,000,000	
Less benefits paid during the period	<u>1,400,000</u>	<u>(400,000)</u>
Actual return on plan assets		<u>\$ 1,350,000</u>

18. An **asset gain** occurs when the actual return on the plan assets is greater than the expected return on plan assets while an **asset loss** occurs when the actual return is less than the expected return on the plan assets. A **liability gain** results from unexpected decreases in the pension obligation and a **liability loss** results from unexpected increases in the pension obligation.

Questions Chapter 20 (Continued)

19. **Corridor amortization** occurs when the accumulated unrecognized net gain or loss balance gets too large. The gain or loss is too large when it exceeds the arbitrarily selected FASB criterion of 10% of the larger of the beginning balances of the projected benefit obligation or the market-related value of the plan assets. The excess unrecognized gain or loss balance may be amortized using any systematic method but the amortization cannot be less than the amount computed using the straight-line method over the average remaining service-life of active employees expected to receive benefits.
20. A **minimum liability** is recognized when the accumulated benefit obligation exceeds the fair value of plan assets at the end of any year. The minimum liability amount is reported in two separate accounts, Prepaid/Accrued Pension Cost and Additional Pension Liability. The balances in these accounts are combined into one amount and reported as accrued pension cost or pension liability.
21. Whenever it is necessary to adjust the accounts to recognize a minimum pension liability, the offsetting debit is to an intangible asset account referred to as Deferred Pension Cost. The rationale for the debit to an intangible asset is that these costs (unrecognized prior service cost) are to be recognized in the future, not presently.

If the debit to the intangible asset account results in that account's balance exceeding the amount of unrecognized prior service cost, then it must mean that the company has experienced an actuarial loss. The excess amount by which the intangible asset exceeds the unrecognized prior service cost should be debited to Excess of Additional Pension Liability over Unrecognized Prior Service Cost and charged to other comprehensive income. The total account balance (contra stockholders' equity account) should be reported as a component of accumulated other comprehensive income as a reduction of stockholders' equity.

22. The amount of the minimum pension liability to be reported on the company's balance sheet is as follows:

Accumulated benefit obligation	\$(400,000)
Pension plant assets	<u>300,000</u>
Minimum pension liability	<u>\$(100,000)</u>

The additional liability is \$141,000. In the financial statements, the company will report a net pension liability of \$100,000 and an intangible asset of \$141,000 (\$100,000 + \$41,000). Neither the plan assets nor the accumulated benefit obligation are reported in the financial statements (but they are both disclosed in the notes).

23. The unrecognized prior service cost is not reported on the balance sheet. An intangible asset—Deferred Pension Cost—in the amount of \$9,150,000 would be reported in the intangible asset section. The remaining \$1,350,000 is debited to Excess of Additional Pension Liability over Unrecognized Prior Service Cost and charged to other comprehensive income. The total account balance (contra stockholders' equity account) should be reported as a component of accumulated other comprehensive income as a reduction of stockholders' equity.
24. (a) A **contributory plan** is a pension plan under which employees contribute part of the cost. In some contributory plans, employees wishing to be covered must contribute; in other contributory plans, employee contributions result in increased benefits.
- (b) **Vested benefits** are benefits for which the employee's right to receive a present or future pension benefit is no longer contingent on remaining in the service of the employer.
- (c) **Retroactive benefits** are benefits granted in a plan amendment (or initiation) that are attributed by the pension benefit formula to employee services rendered in periods prior to the amendment.
- (d) The **years-of-service method** is used to allocate prior service cost to the remaining years of service of the affected employees. Each year receives a fraction of the original cost with the fraction depicting the number of service-years received out of the total service-years to be worked by the affected employees.

Questions Chapter 20 (Continued)

25. Compromises by the FASB to full capitalization or recognition in the financial statements of relevant pension data resulted in nonrecognition of the projected benefit obligation, plan assets, prior service cost, and gains and losses. These unrecognized items are disclosed in a separate schedule in such a way that the total obligation and funded status (either over- or underfunded) of the pension plan are reconciled to the prepaid/accrued pension cost reported in the balance sheet by acknowledging the unrecognized pension elements (plan assets, prior service cost, and deferred gains and losses).
26. The accounting issue that arises from these terminations is whether a gain should be recognized by the corporation when these assets revert (often called asset reversion transactions) to the company. The profession requires that these gains or losses be reported immediately in most situations. Otherwise, the gain is deferred and amortized over at least ten years in the future.
- *27. **Postretirement benefits other than pensions** include health care and other welfare benefits provided to retirees, their spouses, dependents, and beneficiaries. The other welfare benefits include life insurance offered outside a pension plan, dental care as well as medical care, eye care, legal and tax services, tuition assistance, day care, and housing activities.
- *28. The FASB did not cover both pensions and health care benefits in the earlier pension accounting statement (**No. 87**) because of the significant differences between the two types of postretirement benefits. These differences are listed in the following schedule:

Differences between Postretirement Health Care Benefits and Pensions

Item	Pensions	Health Care Benefits
Funding Benefit	Generally funded. Well-defined and level dollar amount.	Generally NOT funded. Generally uncapped and great variability.
Beneficiary	Retiree (maybe some benefit to surviving spouse).	Retiree, spouse, and other dependents.
Benefit Payable Predictability	Monthly. Variables are reasonably predictable.	As needed and used. Utilization difficult to predict. Level of cost varies geographically and fluctuates over time.

Additionally, although health care benefits are generally covered by the fiduciary and reporting standards for employee benefit funds under ERISA, the stringent minimum vesting, participation, and funding standards that apply to pensions do not apply to health care benefits.

- *29. Under **FASB Statement No. 106**, accounting for postretirement benefits, the transition amount (obligation or asset—almost always an obligation) is computed as the difference between the accumulated postretirement benefit obligation and the fair value of the plan assets (plus any accrued obligation or less any prepaid cost). It may be written off immediately or amortized on a straight-line basis over the average remaining service period to expected retirement of employees in place at the time of transition and expected to receive benefits. If the remaining service period is less than 20 years, the employer may elect a 20-year amortization period.

Accounting for transition amounts is so controversial because of the potentially significant impact on earnings.

Questions Chapter 20 (Continued)

*30. The major differences between pension benefits and postretirement benefits are listed below:

Differences between Postretirement Health Care Benefits and Pensions

Item	Pensions	Health Care Benefits
Funding Benefit	Generally funded. Well-defined and level dollar amount.	Generally NOT funded. Generally uncapped and great variability.
Beneficiary	Retiree (maybe some benefit to surviving spouse).	Retiree, spouse, and other dependents.
Benefit Payable Predictability	Monthly. Variables are reasonably predictable.	As needed and used. Utilization difficult to predict. Level of cost varies geographically and fluctuates over time.

*31. EPBO (expected postretirement benefit obligation) is the actuary's present value of all benefits expected to be paid after retirement, while APBO (accumulated postretirement benefit obligation) is the actuarial present value of future benefits attributed to employees' services rendered to a particular date.

The components of postretirement expense are service cost, interest cost, actual return on plan assets, amortization of prior service cost, gains and losses, and amortization of transition obligation.

SOLUTIONS TO BRIEF EXERCISES

BRIEF EXERCISE 20-1

Service cost	\$ 260,000
Interest on PBO	515,000
Return on plan assets	(539,000)
Amortization of unrecognized prior service cost	11,000
Amortization of unrecognized net loss	<u>22,000</u>
Pension expense	<u>\$ 269,000</u>

BRIEF EXERCISE 20-2

Ending plan assets		\$2,000,000
Beginning plan assets		<u>1,680,000</u>
Increase in plan assets		320,000
Deduct: Contributions	\$120,000	
Less benefits paid	<u>(200,000)</u>	<u>(80,000)</u>
Actual return on plan assets		<u>\$ 400,000</u>

BRIEF EXERCISE 20-3

UDDIN COMPANY

General Journal Entries

Memo Record

Items	Pension Expense	Cash	Prepaid/ Accrued Cost	Projected Benefit Obligation	Plan Assets
1/1/05				250,000 Cr	250,000 Dr
Service cost	27,500 Dr			27,500 Cr	
Interest cost	25,000 Dr			25,000 Cr	
Actual return	25,000 Cr				25,000 Dr
Contributions		20,000 Cr			20,000 Dr
Benefits				<u>17,500 Dr</u>	<u>17,500 Cr</u>
Journal entry	<u>27,500 Dr</u>	<u>20,000 Cr</u>	<u>7,500 Cr</u>		
12/31/05			<u>7,500 Cr</u>	<u>285,000 Cr</u>	<u>277,500 Dr</u>

BRIEF EXERCISE 20-4

Prepaid Pension Cost	134,000	
Cash		122,000
Pension Expense		12,000

BRIEF EXERCISE 20-5

Cost per service year:
 $\$120,000/2,000 = \60

2005 amortization:
 $350 \times \$60 = \underline{\$21,000}$

BRIEF EXERCISE 20-6

Project benefit obligation	\$ (510,000)
Plan assets at fair value	<u>322,000</u>
PBO in excess of plan assets (or funded status)	(188,000)
Unrecognized prior service cost	<u>127,000</u>
Accrued pension cost	<u>\$ (61,000)</u>

BRIEF EXERCISE 20-7

Unrecognized net loss	\$475,000
Corridor (10% X \$3,300,000)	<u>330,000</u>
Excess	145,000
Average remaining service life	÷ 7.5
Minimum amortization	<u>\$ 19,333</u>

BRIEF EXERCISE 20-8

Accumulated benefit obligation	\$2,800,000
Fair value of plan assets	<u>2,000,000</u>
Minimum liability	800,000
Accrued pension cost	<u>200,000</u>
Additional liability	<u>\$ 600,000</u>

BRIEF EXERCISE 20-9

Intangible Asset—Deferred Pension Cost.....	145,000	
Additional Pension Liability.....		145,000*

*Accumulated benefit obligation	\$3,400,000
Fair value of plan assets	<u>2,420,000</u>
Minimum liability	980,000
Accrued pension cost	<u>235,000</u>
Additional liability required	745,000
Previous additional liability	<u>600,000</u>
Increase in additional liability	<u>\$ 145,000</u>

BRIEF EXERCISE 20-10

Intangible Asset—Deferred Pension Cost.....	425,000	
Excess of Additional Pension Liability over Unrecognized Prior Service Cost	175,000	
Additional Pension Liability.....		600,000

***BRIEF EXERCISE 20-11**

Service cost	\$40,000
Interest cost	52,400
Actual return on plan assets	(26,900)
Amortization of unrecognized transition amount	<u>24,600</u>
Postretirement expense	<u>\$90,100</u>

***BRIEF EXERCISE 20-12**

Postretirement Expense	240,900	
Cash.....		160,000
Prepaid/Accrued Cost		80,900

SOLUTIONS TO EXERCISES

EXERCISE 20-1 (5-10 minutes)

(a) Computation of pension expense:

Service cost	\$ 60,000
Interest cost ($\$500,000 \times .10$)	50,000
Actual (expected) return on plan assets	(12,000)
Unrecognized prior service cost amortization	<u>8,000</u>
Pension expense for 2004	<u><u>\$106,000</u></u>

(b) Pension Expense	106,000	
Cash		95,000
Prepaid/Accrued Pension Cost.....		<u>11,000</u>

EXERCISE 20-2 (10-15 minutes)

Computation of pension expense:

Service cost	\$ 90,000
Interest cost ($\$800,000 \times 10\%$)	80,000
Actual (and expected) return on plan assets	(64,000)
Unrecognized prior service cost amortization	<u>10,000</u>
Pension expense for 2005	<u><u>\$116,000</u></u>

EXERCISE 20-3 (15-25 minutes)

**Rebekah Company
Pension Work Sheet—2005**

	General Journal Entries			Memo Record		
	Annual Pension Expense	Cash	Prepaid/Accrued Cost	Projected Benefit Obligation	Plan Assets	Unrecognized Prior Service Cost
Balance, January 1, 2005			10,000 Cr.	800,000 Cr.	640,000 Dr.	150,000 Dr.
(a) Service cost	90,000 Dr.			90,000 Cr.		
(b) Interest cost	80,000 Dr.			80,000 Cr.		
(c) Actual return	64,000 Cr.				64,000 Dr.	
(d) Amortization of PSC	10,000 Dr.					10,000 Cr.
(e) Contributions		105,000 Cr.				
(f) Benefits			11,000 Cr.	40,000 Dr.	105,000 Dr.	
Journal entry	<u>116,000 Dr.</u>	<u>105,000 Cr.</u>	<u>21,000 Cr.</u>	<u>930,000 Cr.</u>	<u>769,000 Dr.</u>	<u>140,000 Dr.</u>
Balance, January 31, 2005						

(b) $\$80,000 = \$800,000 \times 10\%$.

Reconciliation Schedule

Projected benefit obligation	\$(930,000)
Plan assets at fair value	<u>769,000</u>
Funded status	(161,000)
Unrecognized prior service cost	<u>140,000</u>
Prepaid/accrued pension cost	<u>\$ (21,000)</u>

EXERCISE 20-4 (10-15 minutes)

**Trudy Borke Inc.
Pension Work Sheet—2005**

Items	General Journal Entries			Memo Record	
	Annual Pension Expense	Prepaid/Accrued Cost	Cash	Projected Benefit Obligation	Plan Assets
Balance, January 1, 2005				490,000 Cr.	490,000 Dr.
(a) Service cost	40,000 Dr.			40,000 Cr.	
(b) Interest cost	41,650 Dr.			41,650 Cr.	
(c) Actual returns	49,700 Cr.				49,700 Dr.
(d) Contributions			30,000 Cr.		30,000 Dr.
(e) Benefits					
Journal entry, December 31	<u>31,950 Dr.</u>	<u>1,950 Cr.</u>	<u>30,000 Cr.</u>	<u>33,400 Dr.</u>	<u>33,400 Cr.</u>
Balance, December 31, 2005		<u>1,950 Cr.</u>		<u>538,250 Cr.</u>	<u>536,300 Dr.</u>

(b) $\$41,650 = \$490,000 \times .085$.

EXERCISE 20-5 (15-25 minutes)**Computation of Service-Years**

Year	Ed	Paul	Mary	Dave	Caroline	Total
2005	1	1	1	1	1	5
2006	1	1	1	1	1	5
2007	1	1	1	1	1	5
2008		1	1	1	1	4
2009			1	1	1	3
2010			1	1	1	<u>3</u>
	<u>3</u>	<u>4</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>25</u>

Cost per service-year: $\$60,000 \div 25 = \$2,400$

Computation of Annual Prior Service Cost Amortization

Year	Total Service-Years	Cost Per Service-Year	Annual Amortization
2005	5	\$2,400	\$12,000
2006	5	2,400	12,000
2007	5	2,400	12,000
2008	4	2,400	9,600
2009	3	2,400	7,200
2010	3	2,400	<u>7,200</u>
			<u>\$60,000</u>

EXERCISE 20-6 (10-15 minutes)**Computation of Actual Return on Plan Assets**

Fair value of plan assets at 12/31/05		\$2,725,000
Fair value of plan assets at 1/1/05		<u>2,300,000</u>
Increase in fair value of plan assets		425,000
Deduct: Contributions to plan during 2005	\$250,000	
Less benefits paid during 2005	<u>350,000</u>	<u>(100,000)</u>
Actual return on plan assets for 2005		<u>\$ 525,000</u>

EXERCISE 20-7 (15-25 minutes)

Doreen Corp.
Pension Work Sheet—2005

Items	General Journal Entries				Memo Record	
	Annual Pension Expense	Cash	Prepaid/Accrued Cost	Projected Benefit Obligation	Plan Assets	Unrecognized Prior Service Cost
Balance, January 1, 2005			13,800 Cr.	560,000 Cr.	546,200 Dr.	
(a) Prior service cost				<u>100,000 Cr.</u>		<u>100,000 Dr.</u>
New balance, January 1, 2005			13,800 Cr.	660,000 Cr.	546,200 Dr.	100,000 Dr.
(b) Service cost	58,000 Dr.			58,000 Cr.		
(c) Interest cost	59,400 Dr.			59,400 Cr.		
(d) Actual return	52,280 Cr.				52,280 Dr.	
(e) Amortization of PSC	17,000 Dr.					17,000 Cr.
(f) Contributions		55,000 Cr.				
(g) Benefits			27,120 Cr.	40,000 Dr.		
Journal entry, December 31	<u>82,120 Dr.</u>	<u>55,000 Cr.</u>	<u>27,120 Cr.</u>			
Balance, December 31, 2005			<u>40,920 Cr.</u>	<u>737,400 Cr.</u>	<u>613,480 Dr.</u>	<u>83,000 Dr.</u>

(c) \$59,400 = \$660,000 X .09.

EXERCISE 20-8 (20-25 minutes)

Corridor and Minimum Loss Amortization

Year	Projected Benefit Obligation (a)	Plan Asset Value (a)	10% Corridor	Cumulative Unrecognized Net Loss (a)	Minimum Amortization of Loss
2003	\$2,000,000	\$1,900,000	\$200,000	\$ 0	\$ 0
2004	2,400,000	2,500,000	250,000	280,000	3,000 (b)
2005	2,900,000	2,600,000	290,000	367,000 (c)	6,417 (d)
2006	3,600,000	3,000,000	360,000	370,583 (e)	882 (f)

- (a) As of the beginning of the year.
 (b) $(\$280,000 - \$250,000) \div 10 \text{ years} = \$3,000$
 (c) $\$280,000 - \$3,000 + \$90,000 = \$367,000$
 (d) $(\$367,000 - \$290,000) \div 12 \text{ years} = \$6,417$
 (e) $\$367,000 - \$6,417 + \$10,000 = \$370,583$
 (f) $\$370,583 - \$360,000) \div 12 \text{ years} = \882

EXERCISE 20-9 (25-35 minutes)

- (a) Note to financial statements disclosing components of 2005 pension expense:

Note X: Net pension expense for 2005 is composed of the following components of pension cost:

Service cost	\$ 94,000
Interest cost	253,000
Expected return on plan assets	(175,680)
Prior service cost amortization	<u>45,000</u>
Net pension expense	<u>\$216,320</u>

- (b) The following schedule reconciles the funded status of the plan with the amount reported in the balance sheet at December 31, 2005:

Projected benefit obligation	\$(2,737,000)
Plan assets at fair value	<u>2,278,329</u>
Projected benefit obligation in excess of plan assets (funded status)	(458,671)
Unrecognized prior service cost	205,000
Unrecognized net loss	<u>45,680</u>
Accrued pension cost liability	<u>\$ (207,991)</u>

EXERCISE 20-10 (20-25 minutes)

(a) **Tim Buhl Corp.**
Pension Work Sheet

Items	General Journal Entries				Memo Record		
	Annual Pension Expense	Cash	Prepaid/Accrued Cost	Projected Benefit Obligation	Plan Assets	Unrecognized Prior Service Cost	Unrecognized Net Gain or Loss
Balance, January 1, 2005			45,000 Cr.	625,000 Cr.	480,000 Dr.	100,000 Dr.	
(a) Service cost	90,000 Dr.			90,000 Cr.			
(b) Interest cost	56,250 Dr.			56,250 Cr.			
(c) Actual return	57,000 Cr.				57,000 Dr.		
(d) Unexpected gain	5,000 Dr.						5,000 Cr.
(e) Amortization of PSC	19,000 Dr.					19,000 Cr.	
(f) Liability increase				76,000 Cr.			76,000 Dr.
(g) Contributions		99,000 Cr.			99,000 Dr.		
(h) Benefits				85,000 Dr.	85,000 Cr.		
Journal entry	<u>113,250 Dr.</u>	<u>99,000 Cr.</u>	<u>14,250 Cr.</u>	<u>762,250 Cr.</u>	<u>551,000 Dr.</u>	<u>81,000 Dr.</u>	<u>71,000 Dr.</u>

- (b) $\$56,250 = \$625,000 \times .09$.
 (d) Expected return = \$52,000.
 Unexpected gain = Actual return minus expected return; $\$5,000 = \$57,000 - \$52,000$.

(b) **Reconciliation Schedule—12/31/05**

Projected benefit obligation (Credit)	\$ (762,250)
Plan assets at fair value (Debit)	<u>551,000</u>
Funded status	(211,250)
Unrecognized prior service cost (Debit)	81,000
Unrecognized net loss (Debit)	<u>71,000</u>
Prepaid/Accrued Pension Cost—Liability	<u>\$ (59,250)</u>

EXERCISE 20-11 (10-15 minutes)

(a) Additional Liability Computations

	December 31	
	2004	2005
Accumulated benefit obligation	\$(260,000)	\$(370,000)
Fair value plan of assets	<u>255,000</u>	<u>300,000</u>
Minimum liability	(5,000)	(70,000)
Prepaid (accrued) pension cost	<u>30,000</u>	<u>(45,000)</u>
Additional liability to report	(35,000)	(25,000)
Less: Beginning additional liability	<u>—</u>	<u>(35,000)</u>
Additional liability to record	<u>\$ (35,000)</u>	<u>\$ 10,000</u>

(b)

2004	
Intangible Asset—Deferred Pension Cost.....	35,000
Additional Pension Liability.....	35,000

2005	
Additional Pension Liability.....	10,000
Intangible Asset—Deferred Pension Cost.....	10,000

EXERCISE 20-12 (20-30 minutes)

(a) Pension expense for 2004 composed of the following:

Service cost	\$ 56,000
Interest on projected benefit obligation (9% X \$1,000,000)	90,000
Actual and expected return on plan assets	(54,000)
Amortization of unrecognized gain or loss	0
Amortization of unrecognized prior service cost	<u>40,000</u>
Pension expense	<u>\$132,000</u>

(b)

Pension Expense	132,000
Prepaid/Accrued Pension Cost	13,000*
Cash	145,000
(To record pension expense and employer's contribution)	

*\$145,000 – \$132,000

EXERCISE 20-12 (Continued)

(c) Income Statement:

Pension expense	<u>\$132,000</u>
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Balance Sheet:

Assets

Intangible asset—deferred pension cost	<u>\$44,000</u>
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Liabilities

Accrued pension cost	<u>\$31,000</u>
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Minimum liability computation:

12/31/04

Accumulated benefit obligation	\$(830,000)
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Plan assets at fair value	<u>799,000^a</u>
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Minimum liability	\$ (31,000)
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Prepaid/accrued pension cost (an asset)	<u>13,000</u>
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Additional liability	(44,000)
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Unrecognized prior service cost	<u>360,000^b</u>
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Contra equity charge	<u>\$ 0</u>
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^a\$799,000 = \$600,000 + \$145,000 + \$54,000

^b\$360,000 = \$400,000 – \$40,000

EXERCISE 20-13 (20-30 minutes)

(a) Pension expense for 2004 composed of the following:

Service cost	\$ 77,000
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Interest on projected benefit obligation	200,000
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(10% X \$2,000,000)

Actual and expected return on plan assets	(80,000)
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(10% X \$800,000)

Amortization of unrecognized net gain or loss	0
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Amortization of unrecognized prior service cost	<u>115,000</u>
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Pension expense	<u>\$312,000</u>
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(b) Pension Expense	312,000
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Cash	250,000
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Prepaid/Accrued Pension Cost.....	62,000
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(To record pension expense and
employer's contribution)

EXERCISE 20-13 (Continued)

(c) Income Statement:

Pension expense	<u>\$312,000</u>
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Balance Sheet:

Assets

Intangible asset—deferred pension cost	<u>\$528,000</u>
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Liabilities

Accrued pension cost	<u>\$590,000</u>
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Minimum liability computation:

12/31/04

Accumulated benefit obligation	\$(1,720,000)
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Plan assets at fair value	<u>1,130,000</u>
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Minimum liability	(590,000)
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Prepaid/accrued pension cost	<u>(62,000)</u>
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Additional liability	(528,000)
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Unrecognized prior service cost	<u>1,085,000*</u>
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Contra equity charge	<u>\$ 0</u>
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*($\$1,200,000 - \$115,000$)

Note: Beginning of year prior service cost must be \$1,200,000, since there are no unrecognized gains or losses.

EXERCISE 20-13 (Continued)

Note to instructor: To prove the amounts reported, a work sheet might be prepared as follows:

	<u>Journal Entries</u>			<u>Memo Record</u>		
	<u>Annual Pension Expense</u>	<u>Prepaid/Accrued Cost</u>	<u>Projected Benefit Obligation</u>	<u>Plan Assets</u>	<u>Unrecognized Prior Service Cost</u>	<u>Unrecognized Net Gain or Loss</u>
Balance, Jan. 1, 2004		0	2,000,000 Cr.	800,000 Dr.	1,200,000 Dr.*	0
(a) Service cost	77,000 Dr.		77,000 Cr.			
(b) Interest cost	200,000 Dr.		200,000 Cr.			
(c) Actual return	80,000 Cr.			80,000 Dr.		
(d) Amortization of PSC	115,000 Dr.				115,000 Cr.	
(e) Contributions		250,000 Cr.		250,000 Dr.		
(f) Liability gain			200,000 Dr.			200,000 Cr.
Journal entry, Dec. 31	<u>312,000 Dr.</u>	<u>62,000 Cr.</u>				
Balance, Dec. 31, 2004		<u>62,000 Cr.</u>	<u>2,077,000 Cr.</u>	<u>1,130,000 Dr.</u>	<u>1,085,000 Dr.</u>	<u>200,000 Cr.</u>

*This number is a plug as the problem states there is no unrecognized gain or loss.

EXERCISE 20-14 (35-45 minutes)

(a) Actual Return = (Ending – Beginning) – (Contributions – Benefits)

Fair value of plan assets, December 31, 2005		\$2,620
Deduct: Fair value of plan assets, January 1, 2005		<u>1,700</u>
Increase in fair value of plan assets		920
Deduct: Contributions	\$800	
Less benefits paid	<u>200</u>	<u>600</u>
Actual return on plan assets in 2005		<u>\$ 320</u>

(b) Computation of pension liability gains and losses and pension asset gains and losses.

1. Difference between 12/31/05 actuarially computed PBO and 12/31/05 recorded projected benefit obligation (PBO):

PBO at end of year		\$3,645
PBO per memo records:		
1/1/05 PBO	\$2,800	
Add interest (10%)	280	
Add service cost	400	
Less benefit payments	<u>(200)</u>	<u>3,280</u>
Liability loss		<u>\$365</u>

2. Difference between actual fair value of plan assets and expected fair value:

12/31/05 actual fair value of plan assets		2,620
Expected fair value		
1/1/05 fair value of plan assets	1,700	
Add expected return (\$1,700 X 10%)	170	
Add contribution	800	
Less benefits paid	<u>(200)</u>	<u>2,470</u>
Asset gain		<u>(150)</u>
Unrecognized net (gain) or loss		<u>\$215</u>

(c) Because no unrecognized net gain or loss existed at the beginning of the period, no amortization occurs. Therefore, the corridor calculation is not needed. An example of how the corridor would have been computed is illustrated below, assuming an unrecognized net loss of \$240.

EXERCISE 20-14 (Continued)

Beginning-of-the-Year

Year	PBO	Plan Assets (FV)	10% Corridor	Unrecognized Net Loss	Loss Amortization
2005	\$2,800	\$1,700	\$280	\$240	-0-

(d) Prior service cost amortization: $\$1,100 \times 1/20 = \underline{\$55}$ per year.

(e) Minimum liability computation:

Accumulated benefit obligation, 12/31/05	\$(2,730)
Plan assets at fair value	<u>2,620</u>
Minimum liability	(110)
Prepaid pension cost, 12/31/05 (\$800 – \$565)	<u>235</u>
Additional liability	<u>\$ (345)</u>

(f) Pension expense for 2005:

Service cost	\$400
Interest cost (\$2,800 X 10%)	280
Actual return on plan assets [from (a)]	(320)
Unexpected gain [from (b)2.]	150
Amortization of prior service cost	<u>55</u>
Pension expense for 2005	<u>\$565</u>

(g) Reconciliation schedule:

Projected benefit obligation	\$(3,645)
Fair value of plan assets	<u>2,620</u>
Funded status	(1,025)
Unrecognized prior service cost (\$1,100 – \$55)	1,045
Unrecognized net (gain) or loss	<u>215</u>
Prepaid/accrued pension cost	235
Adjustment required to recognize minimum liability	<u>(345)</u>
Accrued pension cost recognized in the balance sheet	<u>\$ (110)</u>

EXERCISE 20-15 (Continued)

Journal entries 12/31/05

1. Pension Expense.....	565	
Prepaid/Accrued Pension Cost.....	235	
Cash.....		800
2. Pension Intangible Asset.....	345	
Additional Pension Liability.....		345

Reconciliation Schedule

Projected benefit obligation	\$(3,645)
Fair value of plan assets	<u>2,620</u>
Funded status	(1,025)
Unrecognized prior service cost	1,045
Unrecognized net (gain) or loss	<u>215</u>
Prepaid pension cost	235
Additional liability	<u>(345)</u>
Pension liability reported	<u>\$ (110)</u>

EXERCISE 20-16 (15-20 minutes)

(a) Computation of pension expense:

Service cost	\$ 90,000
Interest cost (\$700,000 X .10)	70,000
Actual (expected) return on plan assets	<u>(15,000)</u>
Pension expense for 2004	<u>\$145,000</u>

Pension Expense.....	145,000	
Prepaid/Accrued Pension Cost.....	5,000	
Cash.....		150,000

(b) Minimum liability computation:

Accumulated benefit obligation	\$(400,000)
Fair value of plan assets	<u>350,000</u>
Minimum liability	(50,000)
Prepaid (accrued) pension cost (\$25,000 – \$5,000)	<u>(20,000)</u>
Additional liability to report	(30,000)
Less: Beginning additional liability	<u>(10,000)</u>
Additional liability to record	<u>\$ (20,000)</u>

EXERCISE 20-16 (Continued)

Excess of Additional Pension Liability over Unrecognized Prior Service Cost.....	20,000	
Additional Pension Liability		20,000

EXERCISE 20-17 (30-45 minutes)

(a)/(b) Journal Entries—2004

Pension Expense	95,000	
Prepaid/Accrued Pension Cost	15,000*	
Cash		110,000
Intangible Asset—Deferred Pension Cost.....	113,000	
Additional Pension Liability		113,000**
(To record an additional liability to reflect the minimum liability)		

*Prepaid/accrued pension cost at beginning of year	\$ 0
Pension expense	(95,000)
Contribution	110,000
Prepaid/accrued pension cost at end of year	<u>\$ 15,000</u>

**Accumulated benefit obligation	\$(378,000)
Plan assets (at fair value)	<u>280,000</u>
Unfunded accumulated benefit obligation (minimum liability)	(98,000)
Prepaid pension cost	<u>15,000</u>
Additional liability required	<u>\$(113,000)</u>

Journal Entries—2005

Pension Expense	128,000	
Prepaid/Accrued Pension Cost	22,000	
Cash		150,000
Intangible Asset—Deferred Pension Cost.....	38,000	
Additional Pension Liability		38,000*
(To record an additional liability to reflect the minimum liability)		

EXERCISE 20-17 (Continued)

*Prepaid/accrued pension cost at beginning of year	\$ 15,000
Pension expense	(128,000)
Contribution	<u>150,000</u>
Prepaid/accrued pension cost at end of year	<u>\$ 37,000</u>
Accumulated benefit obligation	\$(512,000)
Plan assets (at fair value)	<u>398,000</u>
Unfunded accumulated benefit obligation (minimum liability)	\$(114,000)
Prepaid pension cost	<u>37,000</u>
Additional liability—2005	(151,000)
Additional liability—2004	<u>113,000</u>
Additional liability required—2005	<u>\$ (38,000)</u>

Journal Entries—2006

Pension Expense	130,000	
Cash		125,000
Prepaid/Accrued Pension Cost.....		5,000
Additional Pension Liability.....	151,000	
Intangible Asset—Deferred Pension Cost.....		151,000*
(To reverse additional liability no longer required because plan assets exceed accumulated benefit obligation)		

*Prepaid/accrued pension cost at beginning of year	\$ 37,000
Pension expense	(130,000)
Contribution	<u>125,000</u>
Prepaid/accrued pension cost at end of year	<u>\$ 32,000</u>
Accumulated benefit obligation	\$(576,000)
Plan assets (at fair value)	<u>586,000</u>
Excess of plan assets over accumulated benefit obligation	<u>\$ 10,000</u>

EXERCISE 20-17 (Continued)

	<u>2004</u>	<u>2005</u>	<u>2006</u>
Income Statement:			
Pension expense	\$ 95,000	\$128,000	\$130,000
Balance Sheet:			
Assets			
Intangible asset—			
deferred pension cost	\$113,000	\$151,000	\$ 0
Prepaid pension cost			32,000
Liabilities			
Accrued pension cost*	\$ 98,000	\$114,000	\$ 0

*For financial statement presentation, the Additional Pension Liability balance is combined with the Prepaid/Accrued Pension Cost account balance to arrive at Accrued Pension Cost.

EXERCISE 20-18 (20-25 minutes)

(a) In 2004, the balance sheet reports as an asset “prepaid pension cost” of \$19,000.

In 2005, the balance sheet reports as an asset “prepaid pension cost” of \$16,000 as given.

In 2006, the balance sheet reports as a liability “accrued pension cost” of \$110,000 and as an intangible asset \$103,000 (\$110,000 – \$7,000).

The computation for 2006 is as follows:

Accumulated benefit obligation	\$(2,060,000)
Plan assets (at fair value)	<u>1,950,000</u>
Unfunded accumulated benefit obligation (minimum liability)	<u>\$ (110,000)</u>

(b)	<u>2004</u>	
Pension Expense		250,000
Prepaid/Accrued Pension Cost		19,000
Cash		269,000
(To record pension expense for the period)		

EXERCISE 20-18 (Continued)

<u>2005</u>		
Pension Expense	268,000	
Prepaid/Accrued Pension Cost.....		3,000
Cash		265,000
(To record pension expense for the period)		

<u>2006</u>		
Pension Expense	300,000	
Prepaid/Accrued Pension Cost.....		23,000
Cash		277,000
(To record pension expense for the period)		

- (c) 2004—No entry necessary.
2005—No entry necessary.

In 2006, the journal entry is as follows:

Intangible Asset—Deferred Pension Cost.....	103,000	
Additional Pension Liability.....		103,000*
(To record an additional liability to reflect the minimum liability)		

*Unfunded accumulated benefit obligation [part (a)]	\$(110,000)
Accrued pension cost (2006)	<u>7,000</u>
Additional liability required	<u>\$(103,000)</u>

Note to instructor: The debit is to Intangible Asset—Deferred Pension Cost because this amount is less than the unrecognized prior service cost of \$637,000.

EXERCISE 20-19 (20-25 minutes)

(a) Actuarial present value of benefit obligations:

Projected benefit obligation	\$(930,000) ^a
Plan assets at fair value	<u>700,000^a</u>
Projected benefit obligation in excess of plan assets (funded status)	(230,000)
Prior service cost not yet recognized in pension expense	<u>120,000^a</u>
Prepaid/accrued pension cost	(110,000)
Adjustment required to recognize minimum liability	<u>(55,000)^c</u>
Liability recognized in the balance sheet	<u><u>\$(165,000)^b</u></u>

^aAll given.

^b Accumulated benefit obligation	\$(865,000)
Pension plan assets (at fair value)	<u>700,000</u>
Unfunded accumulated benefit obligation (minimum liability)	<u><u>\$(165,000)</u></u>

The \$165,000 is the amount to be reported on the balance sheet.

^cDifference between the accrued pension cost (before adjustment) \$110,000 (\$230,000 – \$120,000) and the liability recognized in the balance sheet.

(b) If an additional unrecognized loss is reported, it would increase the adjustment required to recognize the minimum liability. The lower section of the reconciliation would be as follows: [Top part same as (a)]

Projected benefit obligation in excess of plan assets	\$(230,000)
Unrecognized net loss	16,000
Prior service cost not yet recognized in pension expense	<u>120,000</u>
Prepaid/accrued pension cost	(94,000)
Adjustment required to recognize minimum liability	<u>(71,000)</u>
Liability recognized in the balance sheet	<u><u>\$ 165,000</u></u>

EXERCISE 20-19 (Continued)

- (c) The prior service cost not yet recognized in periodic expense should be deducted from the projected benefit obligation in excess of plan assets because, for accounting purposes, it has not been recognized. As a result, the liability for accounting purposes is lower, and, therefore, to reconcile to this lower number, the prior service cost not yet recognized must be deducted.

The unrecognized loss has either increased the project benefit obligation or decreased the fair value of the plan assets, but has not been recognized for accounting purposes. As a result, the accounting obligation is lower by this amount. In reconciling from the project benefit obligation in excess of plan assets to the accounting liability, this unrecognized loss must be deducted.

EXERCISE 20-20 (25-35 minutes)

The excess of the cumulative unrecognized net gain or loss over the corridor amount is amortized by dividing the excess by the average remaining service period of employees. The average remaining service period is computed as follows:

$$\frac{\text{Expected future years of service}}{\text{Number of employees}} = \text{Average remaining service life per employee}$$

$$\text{Average remaining service life per employee} = \frac{5,600}{400} = 14.$$

Amortization of Unrecognized Net (Gain) or Loss

<u>(Gain) or Loss For the Year Ended December 31,</u>	<u>Amount</u>
2004	300,000
2005	480,000
2006	(210,000)
2007	(290,000)

EXERCISE 20-20 (Continued)

Year	Projected Benefit Obligation (a)	Plan Assets (a)	Corridor (b)	Cumulative Unrecognized (Gain) Loss (a)	Minimum Amortization of (Gain) Loss
2004	\$4,000,000	\$2,400,000	\$400,000	\$ 0	\$ 0
2005	4,520,000	2,200,000	452,000	300,000	0
2006	4,980,000	2,600,000	498,000	780,000	20,143 (c)
2007	4,250,000	3,040,000	425,000	549,857 (d)	8,918 (e)

(a) As of the beginning of the year.

(b) The corridor is 10 percent of the greater of projected benefit obligation or plan assets.

(c) $\$780,000 - \$498,000 = \$282,000$; $\$282,000/14 = \$20,143$.

(d) $\$780,000 - \$20,143 - \$210,000 = \$549,857$.

(e) $\$549,857 - \$425,000 = \$124,857$; $\$124,857/14 = \$8,918$.

EXERCISE 20-21 (30-40 minutes)

(a)

Year	Unrecognized Prior Service Cost Amortized	
2004	\$110,000	$(\$1,155,000 \div 10.5 \text{ years})$
2005	110,000	$(\$1,155,000 \div 10.5 \text{ years})$

(b) The excess of the cumulative unrecognized net gain or loss over the corridor amount is amortized by dividing the excess by the average remaining service life per employee. The average service life is 10.5 years.

Amortization of Unrecognized Net (Gain) or Loss

(Gain) or Loss For the Year Ended December 31,	Amount
2004	\$101,000
2005	(24,000)

EXERCISE 20-21 (Continued)

Year	Projected Benefit Obligation (a)	Plan Assets (a)	10% Corridor (b)	Cumulative Unrecognized (Gain) Loss (a)	Minimum Amortization of (Gain) Loss
2004	\$2,800,000	\$1,700,000	\$280,000	\$ 0	\$ -0-
2005	3,650,000	2,900,000	365,000	101,000	-0- (c)

(a) As of the beginning of the year.

(b) The corridor is 10 percent of the greater of the projected benefit obligation or plan assets.

(c) \$365,000 is greater than \$101,000; therefore, no amortization.

(c) Pension expense for 2004 composed of the following:

Service cost	\$400,000
Interest on projected benefit obligation (\$2,800,000 X 11%)	308,000
Expected return on plan assets (\$1,700,000 X 10%)	(170,000)
Amortization of unrecognized net gain or loss	0
Amortization of unrecognized prior service cost	<u>110,000</u>
Pension expense	<u>\$648,000</u>

Pension expense for 2005 composed of the following:

Service cost	\$475,000
Interest on projected benefit obligation (\$3,650,000 X 8%)	292,000
Expected return on plan assets (\$2,900,000 X 10%)	(290,000)
Amortization of unrecognized prior service cost	<u>110,000</u>
Pension expense	<u>\$587,000</u>

*EXERCISE 20-22 (10-12 minutes)

Service cost	\$ 88,000
Interest on accumulated postretirement benefit obligation (10% X \$810,000)	81,000
Expected return on plan assets	(34,000)
Amortization of prior service cost	21,000
Amortization of transition amount	<u>5,000</u>
Postretirement expense	<u>\$161,000</u>

***EXERCISE 20-23 (10-12 minutes)**

Service cost	\$ 90,000
Interest on accumulated postretirement benefit obligation (9% X \$810,000)	72,900
Expected return on plan assets	(62,000)
Amortization of prior service cost	3,000
Amortization of transition amount	5,000
Postretirement expense	<u>\$108,900</u>

***EXERCISE 20-24 (15-20 minutes)**

See work sheet on next page.

***EXERCISE 20-25 (10-15 minutes)**

(a) Accumulated postretirement benefit obligation (Credit)	\$(950,000)
Plan assets at fair value (Debit)	<u>650,000</u>
Funded status (Credit)	(300,000)
Unrecognized prior service cost (Debit)	60,000
Unrecognized transition amount (Debit)	<u>100,000</u>
Accrued postretirement benefit cost (Credit)	<u>\$(140,000)</u>

(b) Accumulated postretirement benefit obligation (Credit)	\$(950,000)
Plan assets at fair value (Debit)	<u>650,000</u>
Funded status (Credit)	(300,000)
Unrecognized prior service cost (Debit)	60,000
Unrecognized transition amount (Debit)	100,000
Unrecognized loss (Debit)	<u>20,000</u>
Accrued postretirement benefit cost (Credit)	<u>\$(120,000)</u>

***EXERCISE 20-24 (15-20 minutes)**

**Marvelous Marvin Co.
Postretirement Benefits Work Sheet—2005**

Items	General Journal Entries				Memo Record		
	Annual Post-retirement Expense	Cash	Prepaid/Accrued Cost	Accumulated Postretirement Obligation	Plan Assets	Unrecognized Transition Amount	Unrecognized Prior Service Cost
Balance, Jan. 1, 2005			0	810,000 Cr.	710,000 Dr.	80,000 Dr.	20,000 Dr.
(a) Service cost	90,000 Dr.			90,000 Cr.			
(b) Interest cost	*72,900 Dr.			72,900 Cr.			
(c) Actual return	62,000 Cr.				62,000 Dr.		
(d) Contributions		16,000 Cr.			16,000 Dr.		
(e) Benefits				40,000 Dr.	40,000 Cr.		
(f) Amortization: Transition						5,000 Cr.	
Prior service cost	3,000 Dr.						3,000 Cr.
Journal entry for 2005	<u>108,900 Dr.</u>	<u>16,000 Cr.</u>	<u>92,900 Cr.</u>				
Balance, Dec. 31, 2005			<u>92,900 Cr.</u>	<u>932,900 Cr.</u>	<u>748,000 Dr.</u>	<u>75,000 Dr.</u>	<u>17,000 Dr.</u>

*(\$710,000 X 9%)

TIME AND PURPOSE OF PROBLEMS

Problem 20-1 (Time 40-50 minutes)

Purpose—to provide a problem that requires preparation of a pension work sheet for two separate years' pension transactions accompanied with a reconciliation schedule at the end of the second year. Included in the problem are an unexpected loss and prior service cost amortization.

Problem 20-2 (Time 45-55 minutes)

Purpose—to provide a problem that requires preparation of a pension work sheet for three separate years' pension transactions, three years of general journal entries for the pension plan, and a reconciliation schedule at the end of each year.

Problem 20-3 (Time 40-50 minutes)

Purpose—to provide a problem that requires computation of the annual pension expense, preparation of the pension journal entries, measurement and recognition of the minimum liability, measurement of unrecognized gains and losses and their amortization, and preparation of a reconciliation schedule.

Problem 20-4 (Time 30-40 minutes)

Purpose—to provide a problem that requires computation of pension expense, preparation of the pension journal entries, and adjustment to the minimum liability.

Problem 20-5 (Time 45-55 minutes)

Purpose—to provide a problem that requires computation of the pension expense for three separate years and the preparation of the pension journal entries for three years with recognition of the minimum pension liability.

Problem 20-6 (Time 45-60 minutes)

Purpose—to provide a problem that requires computation and amortization of unrecognized prior service cost, computation of pension expense, preparation of pension journal entries, and preparation of a reconciliation schedule.

Problem 20-7 (Time 35-45 minutes)

Purpose—to provide a problem that requires preparation of a work sheet, including computation of the minimum liability.

Problem 20-8 (Time 45-60 minutes)

Purpose—to provide a problem that requires preparation of a comprehensive work sheet for two years, covering all facets of pension accounting.

Problem 20-9 (Time 40-45 minutes)

Purpose—to provide a problem that requires preparation of a work sheet for two years, journal entries, and a schedule reconciling funded status to accrued pension cost.

***Problem 20-10** (Time 30-35 minutes)

Purpose—to provide a problem that requires preparation of a work sheet and a reconciliation schedule for postretirement benefit expense.

SOLUTIONS TO PROBLEMS

PROBLEM 20-1

Diana Peter Company Pension Work Sheet—2005 and 2006		Memo Record						
General Journal Entries		Annual Pension Expense	Cash	Prepaid/Accrued Cost	Projected Benefit Obligation	Plan Assets	Unrecognized Prior Service Cost	Unrecognized Net Gain or Loss
(a)	Balance, Jan. 1, 2005				4,200,000 Cr.	4,200,000 Dr.		
	(a) Service cost	150,000 Dr.			150,000 Cr.			
	(b) Interest cost	420,000 Dr.			420,000 Cr.			
	(c) Actual return	252,000 Cr.				252,000 Dr.		
	(d) Funding		140,000 Cr.			140,000 Dr.		
	(e) Benefits				200,000 Dr.	200,000 Cr.		
	Journal entry, 12/31/05	<u>318,000 Dr.</u>	<u>140,000 Cr.</u>	<u>178,000 Cr.</u>		<u>4,392,000 Dr.</u>		
	Balance, Dec. 31, 2005			<u>178,000 Cr.</u>	<u>4,570,000 Cr.</u>	<u>4,392,000 Dr.</u>	500,000 Dr.	
	(f) Prior service cost, 1/1/06				<u>500,000 Cr.</u>			
	(g) Service cost	180,000 Dr.			180,000 Cr.			
	(h) Interest cost	507,000 Dr.			507,000 Cr.			
	(i) Actual return	260,000 Cr.				260,000 Dr.		
	(j) Unexpected loss	91,360 Cr.						91,360 Dr.
	(k) Amortization of PSC	90,000 Dr.					90,000 Cr.	
	(l) Funding		185,000 Cr.					
	(m) Benefits				280,000 Dr.	280,000 Cr.		
	Journal entry, 12/31/06	<u>425,640 Dr.</u>	<u>185,000 Cr.</u>	<u>240,640 Cr.</u>		<u>4,557,000 Dr.</u>		
	Balance, Dec. 31, 2006			<u>418,640 Cr.</u>	<u>5,477,000 Cr.</u>	<u>4,557,000 Dr.</u>	<u>410,000 Dr.</u>	<u>91,360 Dr.</u>
	(b) \$420,000 = \$4,200,000 X 10%.							
	(h) \$507,000 = \$5,070,000 X 10%.							
	(j) \$91,360 = (\$4,392,000 X .08) - \$260,000.							
	(b) Reconciliation Schedule—12/31/06							
	Projected benefit obligation			\$(5,477,000)				
	Fair value of plan assets			4,557,000				
	Funded status			(920,000)				
	Unrecognized prior service cost			410,000				
	Unrecognized net (gain) or loss			91,360				
	Accrued pension cost liability			<u>\$ (418,640)</u>				

Katie Day Company
Pension Work Sheet—2005, 2006, 2007

(a)

	General Journal Entries				Memo Record		
	Annual Pension Expense	Cash	Prepaid/Accrued Cost	Projected-Benefit Obligation	Plan Assets	Unrecognized Net Gain or Loss	Unrecognized Prior Service Cost
Balance, Jan. 1, 2005				200,000 Cr.	200,000 Dr.		
(a) Service cost	16,000 Dr.			16,000 Cr.			
(b) Interest cost	20,000 Dr.			20,000 Cr.			
(c) Actual return	17,000 Cr.				17,000 Dr.		
(d) Unexpected loss	3,000 Cr.					3,000 Dr.	
(e) Contributions		16,000 Cr.			16,000 Dr.		
(f) Benefits		<u>16,000 Cr.</u>		14,000 Dr.	14,000 Cr.		
Journal entry, 12/31/05				<u>222,000 Cr.</u>	<u>219,000 Dr.</u>	<u>3,000 Dr.</u>	
Balance, Dec. 31, 2005	<u>16,000 Dr.</u>						
(g) Prior service cost, 1/1/06				<u>160,000 Cr.</u>			<u>160,000 Dr.</u>
Balance, Jan. 1, 2006				382,000 Cr.	219,000 Dr.	3,000 Dr.	160,000 Dr.
(h) Service cost	19,000 Dr.			19,000 Cr.			
(i) Interest cost	38,200 Dr.			38,200 Cr.			
(j) Actual return	21,900 Cr.				21,900 Dr.		
(k) Amortization of PSC	54,400 Dr.						54,400 Cr.
(l) Contributions		40,000 Cr.		16,400 Dr.	40,000 Dr.		
(m) Benefits		<u>40,000 Cr.</u>		<u>16,400 Cr.</u>	<u>16,400 Cr.</u>		
Journal entry, 12/31/06				<u>422,800 Cr.</u>	<u>264,500 Dr.</u>	<u>3,000 Dr.</u>	
Balance, Dec. 31, 2006	<u>89,700 Dr.</u>						<u>105,600 Dr.</u>
(n) Service cost	26,000 Dr.			26,000 Cr.			
(o) Interest cost	42,280 Dr.			42,280 Cr.			
(p) Actual return	24,000 Cr.				24,000 Dr.		
(q) Unexpected loss	2,450 Cr.					2,450 Dr.	
(r) Amortization of PSC	41,600 Dr.						41,600 Cr.
(s) Contributions		48,000 Cr.			48,000 Dr.		
(t) Benefits				21,000 Dr.	21,000 Cr.		
(u) Unexpected liability loss				49,920 Cr.		49,920 Dr.	
Journal entry, 12/31/07				<u>35,430 Cr.</u>	<u>315,500 Dr.</u>	<u>55,370 Dr.</u>	
Balance, Dec. 31, 2007	<u>83,430 Dr.</u>			<u>520,000 Cr.</u>	<u>315,500 Dr.</u>	<u>55,370 Dr.</u>	<u>64,000 Dr.</u>

PROBLEM 20-2

PROBLEM 20-2 (Continued)

Work sheet computations:

- (b) $\$20,000 = \$200,000 \times 10\%$
- (d) $\$3,000 = (\$200,000 \times 10\%) - \$17,000$; expected return exceeds actual return.
- (i) $\$38,200 = \$382,000 \times 10\%$
- (j) Expected return and actual return are the same.
- (o) $\$42,280 = \$422,800 \times 10\%$
- (q) $\$2,450 = (\$264,500 \times 10\%) - \$24,000$; expected return exceeds actual return.

(Note to instructor: Because the amount of unrecognized net gain or loss does not exceed 10% of the larger of the projected benefit obligation or the fair value of the plan assets at the beginning of any of the years, no amortization is recorded. The minimum liability could not be computed in this problem because no accumulated benefit obligation was given for any of the years.)

(b) Journal entries:

	2005	
Pension Expense	16,000	
Cash		16,000
2006		
Pension Expense	89,700	
Cash		40,000
Accrued Pension Cost.....		49,700
2007		
Pension Expense	83,430	
Cash		48,000
Accrued Pension Cost.....		35,430

(c) Reconciliation Schedule 2005

Projected benefit obligation	\$(222,000)
Fair value of plan assets	<u>219,000</u>
Projected benefit obligation in excess of plan assets (funded status)	(3,000)
Unrecognized net (gain) or loss	<u>3,000</u>
Prepaid/accrued pension cost	<u><u>\$ 0</u></u>

PROBLEM 20-2 (Continued)

Reconciliation Schedule 2006

Projected benefit obligation	\$(422,800)
Fair value of plan assets	<u>264,500</u>
Projected benefit obligation in excess of plan assets (funded status)	(158,300)
Unrecognized net (gain) or loss	3,000
Unrecognized prior service cost	<u>105,600</u>
Accrued pension cost	<u>\$ (49,700)</u>

Reconciliation Schedule 2007

Projected benefit obligation	\$(520,000)
Fair value of plan assets	<u>315,500</u>
Projected benefit obligation in excess of plan assets (funded status)	(204,500)
Unrecognized net (gain) or loss	55,370
Unrecognized prior service cost	<u>64,000</u>
Accrued pension cost	<u>\$ (85,130)</u>

PROBLEM 20-3

(a) Pension expense for 2004 comprises the following:

Service cost	\$52,000
Interest on projected benefit obligation (10% X \$350,000)	35,000
Actual return on plan assets	(11,000)
Unexpected loss	(9,000)*
Amortization of unrecognized gain or loss in 2004	0
Amortization of unrecognized prior service cost (\$150,000 ÷ 10.5 years)	14,286**
Pension expense	<u>\$81,286</u>

*([10% X \$200,000] – \$11,000)

**Amortization: \$150,000 ÷ 10.5 years = \$14,286

(b) Journal Entries—2004

Pension Expense	81,286	
Cash		65,000
Prepaid/Accrued Pension Cost.....		16,286

(c) Intangible Asset—Deferred Pension Cost..... 72,714

Additional Pension Liability.....		72,714
(To record an additional liability to reflect the minimum liability)		

Prepaid/accrued pension cost at beginning of year	\$ 0
Pension expense	(81,286)
Contribution	<u>65,000</u>
Prepaid/accrued pension cost at end of year	<u>\$(16,286)</u>
Accumulated benefit obligation	\$(365,000)
Plan assets (at fair value)	<u>276,000</u>
Unfunded accumulated benefit obligation (minimum liability)	(89,000)
Accrued pension cost	<u>(16,286)</u>
Additional liability required	<u>\$ (72,714)</u>

PROBLEM 20-3 (Continued)

(d) 2004 Increase/Decrease in Unrecognized Gains/Losses

(1)	12/31/04 new actuarially computed PBO	\$452,000	
	Less: Projected benefit obligation per memo record:		
	1/1/04 PBO	\$350,000	
	Add interest (10% X \$350,000)	35,000	
	Add service cost (given)	52,000	
	Less benefit payments	<u>0</u>	
		<u>437,000</u>	
	Liability loss		\$15,000
(2)	12/31/04 fair value of plan assets	\$276,000	
	Less: Expected fair value 1/1/04 fair value of plan assets	\$200,000*	
	Add expected return (10% X \$200,000)	20,000	
	Add pension plan contribution	65,000	
	Less benefit payments	<u>0</u>	
		<u>285,000</u>	
	Asset loss		<u>9,000</u>
	Unrecognized net loss at 12/31/04		<u>\$24,000</u>

***Note:** The statement allows either the fair value of plan assets or an average of fair values to be used as the market-related asset value. However, if the problem gives you both the fair value of plan assets and market-related asset value, use the market-related asset value in computing expected return. In this problem, fair value and market-related value are the same.

The \$24,000 net loss in the Unrecognized Net Gain or Loss account becomes the beginning balance in 2005. The corridor at 1/1/05 is 10% of the greater of \$452,000 (PBO) or \$276,000 (market-related asset value). Since the corridor of \$45,200 is greater than the balance in the unamortized gain/loss account of \$24,000, there will be no gain/loss amortization in 2005. It follows that no amortization occurs in 2004 because no balance existed in the Unrecognized Net Gain or Loss account at the beginning of 2004.

PROBLEM 20-3 (Continued)

(e) Reconciliation of Pension-Related Amounts

	<u>Dr (Cr)</u>
Projected benefit obligation	\$(452,000)
Fair value of plan assets	<u>276,000</u>
Projected benefit obligation in excess of plan assets (funded status)	(176,000)
Unrecognized net (gain) or loss	24,000
Unrecognized prior service cost (\$150,000 – \$14,286)	<u>135,714</u>
Prepaid/accrued pension cost	(16,286)
Additional pension liability	<u>(72,714)</u>
Accrued pension liability (minimum liability recognized in financial statements: additional pension liability, \$72,714, plus accrued pension cost, \$16,286)	<u>\$ (89,000)</u>

PROBLEM 20-4

(a) Computation of pension expense:

	2004	2005
Service cost	\$ 60,000	\$ 90,000
Interest cost (\$600,000 X .09) and (\$700,000 X .09)	54,000	63,000
Actual (expected) return on plan assets	(24,000)	(30,000)
Amortization of prior service cost	10,000	12,000
Pension expense	\$100,000	\$135,000

(b)

	2004	2005
Pension Expense	100,000	135,000
Cash	110,000	120,000
Prepaid/Accrued Pension Cost	10,000	15,000

(c) Minimum liability computation:

	2004	2005
Accumulated benefit obligation	\$(500,000)	\$(550,000)
Fair value of plan assets	380,000	465,000
Minimum liability	(120,000)	(85,000)
Prepaid (accrued) pension cost (\$40,000 – \$10,000) and (\$30,000 + \$15,000)	(30,000)	(45,000)
Additional liability to report	(90,000)	(40,000)
Less: Beginning additional liability	(50,000)	(90,000)
Additional liability to record	\$ (40,000)	\$ 50,000

(d)

	2004		2005
Intangible Asset—Deferred Pension Cost	40,000		
Additional Pension Liability			40,000
		2005	
Additional Pension Liability		50,000	
Intangible Asset—Deferred Pension Cost			50,000

PROBLEM 20-5

- (a) Pension expense for 2004 consisted only of the service cost component amounting to \$55,000. There were no unrecognized prior service cost, unrecognized net gain or loss, pension assets, or projected benefit obligation as of January 1, 2004.

Pension expense for 2005 comprised the following:

Service cost	\$85,000
Interest on projected benefit obligation (\$55,000 X 11%)	6,050
Expected return on plan assets (\$50,000 X 10%)	(5,000)
Amortization of unrecognized net gain or loss	0
Amortization of unrecognized prior service cost	0
Pension expense	<u>\$86,050</u>

Pension expense for 2006 comprised the following:

Service cost	\$119,000
Interest on projected benefit obligation (\$200,000 X 8%)	16,000
Expected return on plan assets (\$85,000 X 10%)	(8,500)
Amortization of unrecognized net gain or loss (1)	5,329
Amortization of unrecognized prior service cost	0
Pension expense	<u>\$131,829</u>

PROBLEM 20-5 (Continued)

(1) Year	Projected Benefit Obligation (a)	Plan Assets (a)	Corridor (b)	Cumulative Unrecognized (Gain) Loss (a)	Minimum Amortization of (Gain) Loss
2004	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
2005	55,000	50,000	5,500	0	0
2006	200,000	85,000	20,000	83,950	5,329 (c)

(a) As of the beginning of the year.

(b) The corridor is 10 percent of the greater of the projected benefit obligation or plan assets.

(c) $\$83,950 - \$20,000 = \$63,950$; $\$63,950/12 = \underline{\$5,329}$

(b) Journal Entries—2004

Pension Expense	55,000	
Cash		50,000
Prepaid/Accrued Pension Cost.....		5,000

Journal Entries—2005

Pension Expense	86,050	
Cash		60,000
Prepaid/Accrued Pension Cost.....		26,050

Excess of Additional Pension Liability over Unrecognized Prior Service Cost*	48,950	
Additional Pension Liability		48,950*

Computation of Minimum Liability

Required minimum liability	
(\$165,000 – \$85,000)	\$(80,000)
Accrued pension cost	
(\$5,000 + \$26,050)	<u>(31,050)</u>
Additional liability	<u>\$(48,950)</u>

***Note:** Since there are no unrecognized prior service costs, the adjustment will appear as a charge in other comprehensive income and also be reported as a component of accumulated other comprehensive income on the balance sheet.

PROBLEM 20-5 (Continued)

Journal Entries—2006

Pension Expense	131,829	
Cash		95,000
Prepaid/Accrued Pension Cost.....		36,829
Excess of Additional Pension Liability over Unrecognized Prior Service Cost.....	10,875	
Additional Pension Liability		10,875
(To record an additional liability to reflect minimum liability)		

Computation of Minimum Liability

Required minimum liability		
(\$292,000 – \$170,000)	\$(122,000)	
Accrued pension cost		
(\$31,050 + \$31,125)	<u>(67,879)</u>	
	(54,121)	
Less balance of additional liability	<u>(48,950)</u>	
Required adjustment to reflect minimum pension liability		<u>\$ (5,171)</u>

Determination of Amounts to Be Recognized

	2004	2005	2006
Prepaid/accrued pension cost at beginning of year	\$ 0	\$ (5,000)	\$ (31,050)
Net periodic pension cost	(55,000)	(86,050)	(131,829)
Contribution	<u>50,000</u>	<u>60,000</u>	<u>95,000</u>
Prepaid/accrued pension cost at end of year	<u>\$ (5,000)</u>	<u>\$ (31,050)</u>	<u>\$ (67,879)</u>
Plan assets	\$ 50,000	\$ 85,000	\$ 170,000
Accumulated benefit obligation	<u>(45,000)</u>	<u>(165,000)</u>	<u>(292,000)</u>
Required minimum liability (unfunded accumulated benefit obligation)	<u>\$ 0</u>	<u>\$ (80,000)</u>	<u>\$(122,000)</u>
Adjustment required to reflect minimum liability:			
Additional liability	<u>\$ 0</u>	<u>\$(48,950)</u>	<u>\$(5,171)</u>
Excess of additional pension liability over unrecognized prior service cost (there is no unrecognized prior service cost)	<u>\$ 0</u>	<u>\$ 48,950</u>	<u>\$ 5,171</u>

PROBLEM 20-6

(a) Prior Service Cost Amortization

2004	\$153,846	(\$2,000,000 ÷ 13 years)
2005	153,846	(\$2,000,000 ÷ 13 years)
2006	153,846	(\$2,000,000 ÷ 13 years)

(b) Pension expense for 2004 comprised the following:

Service cost	\$200,000
Interest on projected benefit obligation*	500,000
Actual return on plan assets**	(325,000)
Unexpected gain***	25,000
Amortization of unrecognized prior service cost	<u>153,846</u>
Pension expense	<u>\$553,846</u>

*(\$5,000,000 X 10% = \$500,000)

**[\$3,900,000 – \$3,000,000 – (\$575,000 – \$0)]

*** (Expected return of \$300,000 – actual return of \$325,000 = \$25,000 unexpected gain)

(c) Prepaid/accrued pension cost at beginning of year	\$ 0
Pension expense	(553,846)
Contribution	<u>575,000</u>
Prepaid pension cost at end of year	<u>\$ 21,154</u>

Journal Entries—2004

Pension Expense	553,846	
Prepaid/Accrued Pension Cost	21,154	
Cash		575,000
Intangible Asset—Deferred Pension Cost.....	146,154	
Additional Pension Liability		146,154*
(To record an additional liability to reflect the minimum liability)		

PROBLEM 20-6 (Continued)

	*Accumulated benefit obligation		\$(4,025,000)
	Plan assets at fair value		<u>3,900,000</u>
	Unfunded ABO (minimum liability)		(125,000)
	Prepaid pension cost		<u>21,154</u>
	Additional liability		<u>\$ (146,154)</u>
(d)	12/31/04 Fair value of plan assets		\$3,900,000
	Less: Expected fair value of assets		
	1/1/04 fair value of plan assets	\$3,000,000	
	Add expected return	300,000	
	(10% X \$3,000,000)		
	Add contributions to the plan	575,000	
	Less benefits	<u>0</u>	<u>3,875,000</u>
	Asset gain		(25,000)
	12/31/04 New actuarially computed PBO		4,750,000
	Less: 1/1/04 PBO	\$5,000,000	
	Add interest	500,000	
	(10% X \$5,000,000)		
	Add service cost	200,000	
	Less benefits	<u>0</u>	<u>5,700,000</u>
	Liability gain		<u>(950,000)</u>
	Unrecognized net gain 12/31/04		<u>\$ (975,000)</u>

Amortization in 2004: None because there was no beginning balance.

Amortization in 2005 (corridor approach): \$38,462

Year	Projected Benefit Obligation	MV of Plan Assets	Corridor	Unrecognized Net (Gain)	Amortization
2004	\$5,000,000	\$3,000,000	\$500,000	\$ 0	\$ 0
2005	4,750,000	3,900,000	475,000	(975,000)	38,462*

*\$975,000 – \$475,000 = \$500,000; \$500,000 ÷ 13 = \$38,462

PROBLEM 20-6 (Continued)

(e) Reconciliation Schedule 2004

Projected benefit obligation	\$(4,750,000)
Fair value of plan assets	<u>3,900,000</u>
PBO in excess of plan assets (funded status)	(850,000)
Unrecognized prior service cost	1,846,154
(\$2,000,000 – \$153,846)	
Unrecognized net (gain) or loss	<u>(975,000)</u>
Prepaid/accrued pension cost	21,154
Adjustment required to recognize	
minimum liability	<u>(146,154)</u>
Accrued pension cost liability	
recognized in the balance sheet	<u>\$ (125,000)</u>

PROBLEM 20-7

**Farrey Corp.
Pension Work Sheet—2006**

General Journal Entries					
	Annual Pension Expense	Cash	Prepaid/ Accrued Cost	Additional Liability	Pension Intangible
Balance, Jan. 1, 2006					
(a) Service cost	108,000 Dr.		33,000 Cr.		
(b) Interest cost	65,250 Dr.				
(c) Actual return	48,000 Cr.				
(d) Unexpected loss	7,000 Cr.				
(e) Amortization of PSC	25,000 Dr.				
(f) Amortization of loss	1,850 Dr.				
(g) Contributions		138,000 Cr.			
(h) Benefits				9,900 Cr.	9,900 Dr.
(i) Minimum liability adjustment					
Journal entry	<u>145,100 Dr.</u>	<u>138,000 Cr.</u>	<u>7,100 Cr.</u>	<u>9,900 Cr.</u>	<u>9,900 Dr.</u>
Balance, Dec. 31, 2006			<u>40,100 Cr.</u>	<u>9,900 Cr.</u>	<u>9,900 Dr.</u>
(MEMO ENTRIES NEXT PAGE)					
(b) $\$65,250 = \$725,000 \times .09$.					
(d) $\$7,000 = (\$550,000 \times .10) - \$48,000$.					
(MEMO ENTRIES NEXT PAGE)					
(f)	1/1 Projected Benefit Obligation	Market-Related Value of 1/1 Plan Assets	10% Corridor	Unrecognized Net Loss, 1/1	Minimum Amortization of Loss for 2006
2006	\$725,000	\$550,000	\$72,500	\$91,000	\$1,850*

* $\$91,000 - \$72,500 = \$18,500$; $\$18,500 \div 10 = \$1,850$.

PROBLEM 20-7 (Continued)

(i) Computation of minimum liability

Accumulated benefit obligation 12/31/06	\$(671,000)
Plan assets at fair value 12/31/06	<u>621,000</u>
Unfunded accumulated benefit (minimum liability)	(50,000)
Prepaid (accrued) pension cost (balance 12/31/06)	<u>(40,100)</u>
Additional liability required	(9,900)
Unrecognized prior service cost	<u>56,000</u>
Contra equity charge	<u>\$ 0</u>

**Farrey Corp.
Pension Work Sheet—2006**

Memo Entries				
Item	Projected Benefit Obligation	Plan Assets	Unrecognized Prior Service Cost	Unrecognized Net Gain or Loss
Balance, Jan. 1, 2006	725,000 Cr.	520,000 Dr.	81,000 Dr.	91,000 Dr.
(a) Service cost	108,000 Cr.			
(b) Interest cost	65,250 Cr.			
(c) Actual return		48,000 Dr.		
(d) Unexpected loss				7,000 Dr.
(e) Amortization of PSC			25,000 Cr.	
(f) Amortization of loss				1,850 Cr.
(g) Contributions		138,000 Dr.		
(h) Benefits	85,000 Dr.	85,000 Cr.		
(i) Minimum liability adjustment				
Journal entry				
Balance, Dec. 31, 2006	<u>813,250 Cr.</u>	<u>621,000 Dr.</u>	<u>56,000 Dr.</u>	<u>96,150 Dr.</u>

PROBLEM 20-8

Glesen Company		General Journal Entries					
Pension Work Sheet—2005 and 2006		Annual Pension Expense	Cash	Prepaid/ Accrued Cost	Additional Liability	Pension Intangible	Contra Equity Charge
(a)	Balance, Jan. 1, 2005			80,000 Cr.	12,300 Cr.	12,300 Dr.	
	(a) Service cost	40,000 Dr.					
	(b) Interest cost	65,000 Dr.					
	(c) Actual return	36,000 Cr.					
	(d) Unexpected loss	5,000 Cr.					
	(e) Amortization of PSC	70,000 Dr.					
	(f) Contributions		72,000 Cr.				
	(g) Benefits						
	(h) Liability loss						
	(i) Minimum liability adjustment		<u>72,000 Cr.</u>	62,000 Cr.	81,000 Cr.	77,700 Dr.	3,300 Dr.
	Journal entry for 2005	<u>134,000 Dr.</u>		<u>142,000 Cr.</u>	<u>93,300 Cr.</u>	<u>90,000 Dr.</u>	<u>3,300 Dr.</u>
	Balance, Dec. 31, 2005						
	(j) Service cost	59,000 Dr.					
	(k) Interest cost	81,050 Dr.					
	(l) Actual return	61,000 Cr.					
	(m) Unexpected gain	12,350 Dr.					
	(n) Amortization of PSC	55,000 Dr.					
	(o) Contributions		81,000 Cr.				
	(p) Benefits						
	(q) Unrecognized loss amortization	548 Dr.					
	(r) Minimum liability adjustment		<u>81,000 Cr.</u>	65,948 Cr.	86,748 Dr.	83,448 Cr.	3,300 Cr.
	Journal entry for 2006	<u>146,948 Dr.</u>		<u>207,948 Cr.</u>	<u>6,552 Cr.</u>	<u>6,552 Dr.</u>	<u>0</u>
	Balance, Dec. 31, 2006						

PROBLEM 20-8 (Continued)

**Glesen Company
Pension Work Sheet—2005 and 2006**

Memo Record

Item	Projected			Unrecognized		Unrecognized Net Gain or Loss
	Obligation	Plan Assets	Cost	Prior Service Cost	Unrecognized Net Gain or Loss	
Balance, Jan. 1, 2005	650,000 Cr.	410,000 Dr.	160,000 Dr.			
(a) Service cost	40,000 Cr.					
(b) Interest cost	65,000 Cr.					
(c) Actual return		36,000 Dr.				5,000 Dr.
(d) Unexpected loss				70,000 Cr.		
(e) Amortization of PSC						
(f) Contributions		72,000 Dr.				
(g) Benefits	31,500 Dr.	31,500 Cr.				
(h) Liability loss	87,000 Cr.					87,000 Dr.
(i) Minimum liability adjustment						
Journal entry for 2005						
Balance, Dec. 31, 2005	<u>810,500 Cr.</u>	<u>486,500 Dr.</u>	<u>90,000 Dr.</u>			<u>92,000 Dr.</u>
(j) Service cost	59,000 Cr.					
(k) Interest cost	81,050 Cr.					
(l) Actual return		61,000 Dr.				12,350 Cr.
(m) Unexpected gain				55,000 Cr.		
(n) Amortization of PSC						
(o) Contributions		81,000 Dr.				
(p) Benefits	54,000 Dr.	54,000 Cr.				548 Cr.
(q) Unrecognized loss amortization						
(r) Minimum liability adjustment						
Journal entry for 2006						
Balance, Dec. 31, 2006	<u>896,550 Cr.</u>	<u>574,500 Dr.</u>	<u>35,000 Dr.</u>			<u>79,102 Dr.</u>

PROBLEM 20-8 (Continued)

Work sheet computations:

(b) $\$65,000 = \$650,000 \times 10\%$.

(d) $\$5,000 = (\$410,000 \times 10\%) - \$36,000$; expected return exceeds actual return.

(i) (r) **Minimum Liability Computation:**

	December 31	
	2005	2006
Accumulated benefit obligation	\$(721,800)	\$(789,000)
Plan assets at fair value	<u>486,500</u>	<u>574,500</u>
Unfunded accumulated benefit obligation (minimum liability)	(235,300)	(214,500)
Prepaid (accrued) pension cost	<u>(142,000)</u>	<u>(207,948)</u>
Additional liability	(93,300)	(6,552)
Unrecognized prior service cost	<u>90,000</u>	<u>35,000</u>
Contra equity charge	<u>\$ (3,300)</u>	<u>\$ 0</u>

(k) $\$81,050 = \$810,500 \times 10\%$.

(m) $\$12,350 = (\$486,500 \times 10\%) - \$61,000$; actual return exceeds expected return.

(q) **2006 Corridor Test:**

Unrecognized net (gain) or loss at beginning of year	\$92,000
10% of larger of PBO or fair value of plan assets	<u>81,050</u>
Amortizable amount	<u>\$10,950</u>

2006 amortization ($\$10,950 \div 20$ years) \$548

(b)	2005	
Pension Expense	134,000	
Cash		72,000
Prepaid/Accrued Pension Cost.....		62,000
 Intangible Asset—Deferred Pension Cost.....	 77,700	
Excess of Additional Pension Liability Over Unrecognized Prior Service Cost.....	 3,300	
Additional Pension Liability		81,000

PROBLEM 20-8 (Continued)

	2006	
Pension Expense	146,948	
Cash		81,000
Prepaid/Accrued Pension Cost.....		65,948
 Additional Pension Liability.....	 86,748	
Intangible Asset—Deferred Pension Cost.		83,448
Excess of Additional Pension Liability Over Unrecognized Prior Service Cost		 3,300*

*In 2005, the charge for \$3,300 would be reported as a reduction of Other Comprehensive Income and also as a component of Accumulated Other Comprehensive Income. In 2006, Other Comprehensive Income would be increased \$3,300 and the balance in Accumulated Other Comprehensive Income would be zero related to this component.

(c) Pension Reconciliation Schedule—2006

Projected benefit obligation	\$(896,550)
Plan assets at fair value	<u>574,500</u>
Projected benefit obligation in excess of plan assets (funded status)	(322,050)
Unrecognized prior service cost	35,000
Unrecognized net (gain) or loss	<u>79,102</u>
Prepaid/accrued pension cost	(207,948)
Adjustment required to recognize minimum liability	<u>(6,552)</u>
Accrued pension cost liability recognized in the balance sheet	<u>\$(214,500)</u>

PROBLEM 20-9

(a) See work sheet on next page.

(b) **December 31, 2003**

Pension Expense	330,000	
 Cash		150,000
 Prepaid/Accrued Pension Cost.....		180,000

(c) See work sheet on next page. The entry is below.

December 31, 2004

Pension Expense	433,440	
 Cash		184,658
 Prepaid/Accrued Pension Cost.....		248,782

(d) See reconciliation schedule on next page.

***PROBLEM 20-10**

(a) Dusty Hass Foods Inc.
Postretirement Benefits Work Sheet—2005

General Journal Entries		Memo Record					
Items	Net Periodic Postretirement Cost	Cash	Prepaid/Accrued Cost	Accumulated Postretirement Obligation	Plan Assets	Unrecognized Transition Amount	Unrecognized Net Gain or Loss
Balance, Jan. 1, 2005				882,000 Cr.	200,000 Dr.	682,000 Dr.	
(a) Service cost	70,000 Dr.			70,000 Cr.			
(b) Interest cost	79,380 Dr.*			79,380 Cr.			
(c) Actual return	15,000 Cr.				15,000 Dr.		
(d) Unexpected gain	6,000 Dr.**						6,000 Cr.
(e) Contributions		60,000 Cr.		44,000 Dr.	60,000 Dr.		
(f) Benefits					44,000 Cr.		
(g) Amortization: Transition***	31,000 Dr.		111,380 Cr.			31,000 Cr.	
Journal entry, Dec. 31	<u>171,380 Dr.</u>	<u>60,000 Cr.</u>	<u>111,380 Cr.</u>	<u>987,380 Cr.</u>	<u>231,000 Dr.</u>	<u>651,000 Dr.</u>	<u>6,000 Cr.</u>

*\$882,000 X .09 = \$79,380
 **\$15,000 - \$9,000 = \$6,000
 ***\$682,000 ÷ 22 = \$31,000

(b) Reconciliation Schedule—December 31, 2005

Accumulated postretirement benefit obligation (Credit)	\$(987,380)
Plan assets at fair value (Debit)	231,000
Funded status (Credit)	(756,380)
Unrecognized transition amount (Debit)	651,000
Unrecognized net gain or loss (Credit)	(6,000)
Prepaid/accrued postretirement benefit cost	\$(111,380)

TIME AND PURPOSE OF CASES

Case 20-1 (Time 30-35 minutes)

Purpose—to provide the student with the opportunity to discuss some of the more traditional issues related to pension reporting. Specifically, the student is asked to define a pension plan, distinguish between a funded and unfunded plan, differentiate between accounting for the employer and the pension fund. In addition, justification for accrual accounting must be developed, as well as a determination of the relative objectivity of the accrual versus the cash basis.

Case 20-2 (Time 25-30 minutes)

Purpose—to provide the student with the opportunity to discuss the new terminology employed in **FASB Statement No. 87**. The student is required to explain the significance of such items as prepaid pension cost, pension expense, intangible asset—deferred pension cost, and accrued pension cost.

Case 20-3 (Time 20-25 minutes)

Purpose—to provide the student with the opportunity to discuss a relatively straightforward case dealing with reasons why accrual accounting is followed for pension reporting. In addition, certain terms are required to be explained and the proper footnote disclosures identified.

Case 20-4 (Time 30-35 minutes)

Purpose—to provide the student with the opportunity to study some of the implications of **FASB Statement No. 87**. The student is required to identify the five components of pension expense, the major differences between the accumulated benefit obligation and the projected benefit obligation, how to report actuarial gains and losses, and when a minimum liability should be recognized.

Case 20-5 (Time 50-60 minutes)

Purpose—to provide the student with the opportunity to discuss the implications of **FASB Statement No. 87**, given a number of different factual situations. This case is quite thought-provoking and should stimulate a great deal of class discussion.

Case 20-6 (Time 30-40 minutes)

Purpose—to provide the student with the opportunity to explain unrecognized gains and losses, including the use of corridor amortization.

Case 20-6 (Time 30-40 minutes)

Purpose—to provide the student with the opportunity to explain unrecognized gains and losses, including the use of corridor amortization.

Case 20-7 (Time 20-30 minutes)

Purpose—to provide the student with the opportunity to consider the ethical implications of the impact of pension benefits and their impact on financial statements.

SOLUTIONS TO CASES

CASE 20-1

- (a) A private pension plan is an arrangement whereby a company undertakes to provide its retired employees with benefits that can be determined or estimated in advance from the provisions of a document or from the company's practices.

In a contributory pension plan the employees bear part of the cost of the stated benefits whereas in a noncontributory plan the employer bears the entire cost.

- (b) The employer is the organization sponsoring the pension plan. The employer incurs the costs and makes contributions to the pension fund. Accounting for the employer involves: (1) allocating the cost of the pension plan to the proper accounting periods, (2) measuring the amount of pension obligation resulting from the plan, and (3) disclosing the status and effects of the plan in the financial statements.

The pension fund or plan is the entity which receives the contributions from the employer, administers the pension assets, and makes the benefit payments to the pension recipients. Accounting for the fund involves identifying receipts as contributions from the employer sponsor and as income from fund investments and computing the amounts due to individual pension recipients.

- (c) 1. Relative to the pension fund the term "funded" refers to the relationship between pension fund assets and the present value of expected future pension benefit payments; thus, the pension fund may be fully funded or underfunded. Relative to the employer, the term "funded" refers to the relationship of the contributions made by the employer to the pension fund and the pension expense accrued by the employer; if the employer contributes annually to the pension fund an amount equal to the pension expense, the employer is fully funded (a liability could still appear due to the recognition of a minimum liability).
2. Relative to the pension fund, the pension liability is an actuarial concept representing an economic liability under the pension plan for future cash payments to retirees. From the viewpoint of the employer, the pension liability is an accounting credit that results from an excess of amounts expensed over amounts contributed (funded) to the pension fund. In addition, an additional liability may result if the accumulated benefit obligation is greater than the fair value of the pension plan assets.
- (d) 1. The theoretical justification for accrual recognition of pension costs is based on the matching concept. Pension costs are incurred during the period over which an employee renders services to the enterprise; these costs may be paid upon the employee's retirement, over a period of time after retirement, as incurred through funding or insurance plans, or through some combination of any or all of these methods.
2. Although cash (pay-as-you-go) accounting is highly objective for the final determination of actual pension costs, it provides no measurement of annual pension costs as they are incurred. Accrual accounting provides greater objectivity in the annual measurement of pension costs than does cash accounting if actuarial funding methods are applied to actuarial valuations to determine the provision for pension costs. While cash accounting provides a more precise determination of the final cost, accrual accounting provides a more objective measure of the annual cost.

CASE 20-1 (Continued)

(e) Terms and their definitions as they apply to accounting for pension plans follow:

1. Service cost is the actuarial present value of benefits attributed by the pension benefit formula to employee service during that period. The service cost component is a portion of the projected benefit obligation and is unaffected by the funded status of the plan.
2. Prior service costs are the retroactive benefits granted in a plan amendment (or initiation). Retroactive benefits are benefits granted in a plan amendment (or initiation) that are attributed by the pension benefit formula to employee services rendered in periods prior to the amendment.
3. Vested benefits are benefits that are not contingent on the employee continuing in the service of the employer. In some plans the payment of the benefits will begin only when the employee reaches the normal retirement date; in other plans the payment of the benefits will begin when the employee retires (which may be before or after the normal retirement date). The actuarially computed value of vested benefits represents the present value (at the date of determination) of the sum of: (a) the benefits expected to become payable to former employees who have retired, or who have terminated service with vested rights, at the date of determination; and (b) the benefits (based on service rendered prior to the date of determination) expected to become payable at future dates to present employees, taking into account the probable time that employees will retire, at the vesting percentages applicable at the date of determination. The determination of vested benefits is not affected by other conditions, such as inadequacy of the pension fund, which may prevent the employee from receiving the vested benefits.

CASE 20-2

1. Prepaid pension cost is the cumulative contributions in excess of accrued net pension expense. This item is reported in the asset section of the balance sheet and is reduced when pension expense is greater than the contribution made to the fund during a period.

Intangible asset—deferred pension cost is the asset that usually arises when the accumulated benefit obligation exceeds the fair value of plan assets. If an additional liability is recognized, an equal amount should be recognized as an intangible asset, provided the asset recognized does not exceed the amount of unrecognized prior service cost.

2. Accrued pension cost is the cumulative net pension expense accrued in excess of the employer's contributions. This item is reported in the liability section of the balance sheet and is increased when pension expense is greater than the contribution made to the fund.
3. Excess of additional pension liability over unrecognized prior service cost arises when an additional liability is recognized that exceeds unrecognized prior service cost. This account should be reported in the stockholders' equity section as a component of accumulated other comprehensive income. In addition, it should be shown as part of other comprehensive income.
4. Net periodic pension expense is the amount recognized in an employer's financial statements as the expense for a pension plan for the period. Components of net periodic pension expense are service cost, interest cost, actual return on plan assets, amortization of unrecognized gain or loss, and amortization of unrecognized prior service cost. It should be noted that **FASB Statement No. 87** uses the term net periodic pension **cost** instead of net periodic pension **expense** because part of the cost recognized in a period may be capitalized along with other costs as part of an asset such as inventory.

CASE 20-3

- (a)
1. The theoretical justification for accrual recognition of pension costs is based on the matching concept. Pension costs are incurred during the period over which an employee renders services to the enterprise; these costs may be paid upon the employee's retirement, over a period of time after retirement, as incurred through funding or insurance plans, or through some combination of any or all of these methods.
 2. Although cash (pay-as-you-go) accounting is highly objective for the final determination of actual pension costs, it provides no measurement of annual pension costs as they are incurred. Accrual accounting provides greater objectivity in the annual measurement of pension costs than does cash accounting.
- (b) Terms and their definitions as they apply to accounting for pensions follow:
1. Market-related asset value is a moving average of pension plan asset values over a period of time. Considerable flexibility is permitted in computing this amount. In many cases, companies will undoubtedly use the actuarial asset value employed by the actuary as their market-related asset value for purposes of applying this concept to pension reporting.
 2. The projected benefit obligation is the present value of vested and nonvested employee benefits accrued to date based on employees' future salary levels. This is the pension liability adopted by the FASB in **Statement No. 87** (except in reporting the "minimum liability" when the accumulated benefit obligation is used).
 3. The corridor approach was invented by the FASB as the method for determining when to amortize the accumulated balance in the Unrecognized Net Gain or Loss account. The unrecognized net gain or loss balance is amortized when it exceeds the arbitrarily selected FASB criterion of 10% of the larger of the beginning-of-the-year balances of the projected benefit obligation or the market-related value of the plan assets.
- (c) The following disclosures about a company's pension plans should be made in financial statements or their notes:
1. A description of the plan including employee groups covered, type of benefit formula, funding policy, types of assets held, and the nature and effect of significant matters affecting comparability of information for all periods presented.
 2. The components of net periodic pension expense for the period.
 3. A reconciliation showing how the projected benefit obligation and the fair value of the plan assets changed from the beginning to the end of the period.
 4. The funded status of the plan (difference between the PBO and fair value of the plan assets) and the amounts recognized and not recognized in the financial statements.
 5. A disclosure of the rates used in measuring the benefit amounts (discount rate, expected return on plan assets, and rate of compensation).

CASE 20-4

- (a) Pension benefits are part of the compensation received by employees for their services. The actual payment of these benefits is deferred until after retirement. The net periodic pension expense measures this compensation and consists of the following five elements:
1. The service cost component is the present value of the benefits earned by the employees during the current period.

CASE 20-4 (Continued)

2. Since a pension represents a deferred compensation agreement, a liability is created when the plan is adopted. The interest cost component is the increase in that liability, the projected benefit obligation, due to the passage of time.
 3. In order to discharge the pension liability, an employer contributes to a pension fund. The return on the fund assets serves to reduce the interest element of the pension expense. Specifically, the expected return reduces pension expense. Expected return is the expected rate of return times the market-related value of plan assets.
 4. When a pension plan is adopted or amended, credit is often given for employee service rendered in prior years. This retroactive credit, or prior service cost, is not recognized as pension expense entirely in the year the plan is adopted or amended, but should be recognized as pension expense over the time that the employees who benefited from this credit worked.
 5. The gains and losses component arises from a change in the amount of either the projected benefit obligation or the plan assets. This component is amortized via corridor amortization.
- (b) The major similarity between the accumulated benefit obligation and the projected benefit obligation is that they both represent the present value of the benefit attributed by the pension benefit formula to employee service rendered prior to a specific date. All things being equal, when an employee is about to retire, the accumulated benefit obligation and the projected benefit obligation would be the same.

The major difference between the accumulated benefit obligation and the projected benefit obligation is that the former is based on present salary levels and the latter is based on estimated future salary levels. Assuming salary increases over time, the projected benefit obligation should be higher than the accumulated benefit obligation.

- (c)
1. Pension gains and losses, sometimes called actuarial gains and losses, result from changes in the value of the projected benefit obligation or the fair value of the plan assets. These changes arise from the deviations between the estimated conditions and the actual experience, and from changes in assumptions. The volatility of these gains and losses may reflect an unavoidable inability to predict compensation levels, length of employee service, mortality, retirement ages, and other relevant events accurately for a period, or several periods. Therefore, fully recognizing the gains or losses on the income statement may result in volatility that does not reflect actual changes in the funded status of the plan in that period.
 2. In order to decrease the volatility of the reporting of the pension gains or losses, the FASB had adopted what is referred to as the “corridor approach.” This approach achieves the objective by amortization of the cumulative, unrecognized pension gains and losses, in excess of 10 per cent of the greater of the projected benefit obligation or the market-related asset value of the plan assets.
- (d) An additional minimum liability must be recognized when the accumulated benefit obligation exceeds the fair value of the plan assets.

CASE 20-5

1. This situation can exist because companies vary as to whether they are using an implicit or explicit set of assumptions when interest rates are disclosed. In the implicit approach, two or more assumptions do not individually represent the best estimate of the plan’s future experience with respect to these assumptions, but the aggregate effect of their combined use is presumed to be approximately the same as that of an explicit approach. In the explicit approach, each significant

CASE 20-5 (Continued)

assumption reflecting the best estimate of the plan's future experience solely with respect to that assumption must be stated. As a result, some companies are presently using an implicit approach, others an explicit approach. **FASB Statement No. 87** requires the use of explicit assumptions. As a result, this large variance in interest rates will probably disappear to some extent. However, it should be noted that companies will have some leeway in establishing settlement rates. In addition, the expected return on assets will also be different among companies.

2. This situation will occur because of the minimum liability required to be reported. That is, companies are required to report as a liability the excess of their accumulated benefit obligation over the fair value of plan assets. In the past, the basic liability companies reported was the excess of the amount expensed over the amount funded.
3. This statement is questionable. If a financial measure purports to represent a phenomenon that is volatile, the measure must show that volatility or it will not be representationally faithful. Nevertheless, many argue that volatility is inappropriate when dealing with such long-term measures as pensions. A good example of where dampening might be useful is the recognition of gains and losses. If assumptions prove to be accurate estimates of experience over a number of years, gains or losses in one year will be offset by losses or gains in subsequent periods, and amortization of unrecognized gains and losses would be unnecessary. The main point is that volatility per se should not be considered undesirable when establishing accounting principles. Although some managements may consider volatility bad, this belief should not influence standard-setting. However, it is clear from some of the compromises made in **FASB Statement No. 87** that certain procedures were provided to dampen the volatility effect.
4. These pension plan assets in excess of the projected benefit obligation are not reported on the employer's books. However, the fair value of plan assets are required to be reported in the footnote, so that a reader of the financial statements can determine the funded status of the plan.
5.
 - (a) In a defined contribution plan, the amount contributed is the amount expensed. No significant reporting problems exist here. On the other hand, defined benefit plans involve many difficult reporting issues which may lead to additional expense and liability recognition.

Significant amendments will generally increase prior service cost which may lead to significant adjustments to pension expense in the future.
 - (b) Plan participants are of importance, because the expected future years of service computation can have an impact on the amortization of the transition amount, prior service cost, and gains and losses.
 - (c) If the plan is underfunded, pension expense will generally increase (all other factors constant). If the plan is overfunded, pension expense will generally decrease (all other factors constant). The reason is that the expected return on plan assets will be less if the plan is underfunded and vice versa.
 - (d) If the company is using an actuarial funding method different than the one prescribed in **FASB Statement No. 87** (benefits/years-of-service approach), some changes in the computation of pension expense will occur for the company.
6. The corridor method is an approach which requires that only gains and losses in excess of 10% of the greater of the projected benefit obligation or plan assets be allocated. This excess is then amortized over the average remaining service period of current employees expected to participate in the plan.

The corridor's purpose is to only recognize gains and losses above a certain amount, on the theory that gains and losses within the corridor will offset one another over time.

CASE 20-5 (Continued)

7. This intangible asset is established on the basis that the plan amendment may reduce employee turnover, improve productivity, reduce demands for increases in cash compensation, and improve prospects for attracting additional qualified employees. This intangible asset arises when the accumulated benefit obligation exceeds the fair value of plan assets and the company has unrecognized prior service cost. The asset is not amortized, but instead is adjusted upward, downward, or eliminated based on the facts at each year end.
8. This disclosure was eliminated because of cost/benefit considerations. Many companies complained that this disclosure was: (1) difficult to compute, (2) of limited benefit to users, and (3) costly to prepare. Apparently the Board was sympathetic with this view and eliminated this disclosure from the final pronouncement on pensions.

CASE 20-6

To: Rachael Avery, Accounting Clerk
From: Good Student, Manager of Accounting
Date: January 3, 2005
Subject: Amortization of unrecognized gains and losses in pension expense

Pension expense includes several components; one occasionally included is the amortization of unrecognized gains/losses. These gains/losses occur for two reasons. First, the plan assets may provide a return that is either greater or less than what was expected. Second, changes in actuarial assumptions may create increases or decreases in the pension liability. If these gains/losses are small in relation to the projected benefit obligation (PBO) or the market value of the Plan Assets (PA), then do not include them in annual pension expense.

If, in any given year, the gains or losses become too great, then at least a portion must be included in pension expense so as not to understate or overstate the annual obligation. This is done through a process called amortization.

To decide whether or not you should include gains/losses in annual pension expense, calculate 10 percent of either the PBO or the PA (whichever is greater) as a "corridor." Amortize the amount of any gain or loss falling outside the corridor over the average remaining service life of the active employees. Note: these gains/losses must exist at the beginning of the year for which amortization takes place [see (a) on schedule below].

Thus, in the attached schedule, no amortization of the \$280,000 loss in 2001 was required because the balance in the unrecognized gain/loss account at the beginning of that year was zero. However, at the beginning of 2002, the balance in that account was \$280,000. The 10 percent corridor is \$260,000, so the loss exceeds this corridor by \$20,000. Since the remaining service life of employees is 10 years, you derive the amortized portion by dividing 10 into \$20,000: \$2,000 [see (b) on schedule below].

Note that the unamortized portion of the gain/loss from the previous year is combined with the current gain/loss. Check this new sum against a newly calculated 10 percent corridor. If the sum exceeds this corridor, then amortize the excess.

In the attached schedule, the unamortized loss from 2002 (\$278,000) was added to the 2002 loss of \$90,000, resulting in a cumulative unrecognized loss of \$368,000 (see (c) below). This amount exceeds the new corridor (\$290,000) by \$78,000. However, the remaining service life has been changed to 12 years, resulting in annual amortization of only \$6,500 [see (d) below].

CASE 20-6 (Continued)

Finally, if the losses from 2003 are added to the unamortized portion of the unrecognized loss from prior years, the sum falls within the 2004 corridor and does not need to be amortized at all.

Corridor and Minimum Loss Amortization Schedule

Year	Projected Benefit Obligation (a)	Plan Asset Value (a)	10% Corridor	Cumulative Unrecognized Net Loss (a)	Minimum Amortization of Loss
2001	\$2,200,000	\$1,900,000	\$220,000	\$ 0	\$ 0
2002	2,400,000	2,600,000	260,000	280,000	2,000 (b)
2003	2,900,000	2,600,000	290,000	368,000 (c)	6,500 (d)
2004	3,900,000	3,000,000	390,000	373,500 (e)	0

(a) As of the beginning of the year.

(b) $(\$280,000 - \$260,000) \div 10 \text{ years} = \$2,000$

(c) $\$280,000 - \$2,000 + \$90,000 = \$368,000$

(d) $(\$368,000 - \$290,000) \div 12 \text{ years} = \$6,500$

(e) $\$368,000 - \$6,500 + \$12,000 = \$373,500$

CASE 20-7

While Selma may be correct in assuming that the termination of nonvested employees would decrease its pension-related liabilities and associated expenses, she is callous to suggest that firing employees is a reasonable approach to correcting the underfunding of College Electronix's pension plan. Arbitrarily dismissing productive employees on the basis of being vested or not vested in the pension plan in order to avoid capitalizing a liability and recognizing expenses is a capricious and unsound business decision.

Richard Nye should discuss the ethical, legal, and financial implications of the alternatives available as well as the accounting requirements relating to this situation. This obligation and its effect on the financial statements should have been known to Cardinal Technology when it performed its due diligence audit of CE at the time of merger negotiations. Cardinal Technology should capitalize the pension obligations of CE as required by GAAP.

FINANCIAL REPORTING PROBLEM

- (a) 3M has various company-sponsored retirement plans covering substantially all U.S. employees and many employees outside the United States. Pension benefits are based principally on an employee's years of service and compensation near retirement. In addition to providing pension benefits, the company provides certain postretirement health care and life insurance benefits for substantially all of its U.S. employees who reach retirement age while employed by the company. Most international employees and retirees are covered by government health care programs. The cost of company-provided health care plans for these international employees is not material.

The company's pension funding policy is to deposit with independent trustees amounts at least equal to accrued liabilities, to the extent allowed by law. Trust funds and deposits with insurance companies are maintained to provide pension benefits to plan participants and their beneficiaries. In addition, the company has set aside funds for its U.S. postretirement plan with an independent trustee and makes periodic contributions to the plan.

(b)	2001	Pension income	\$39,000,000
	2000	Pension income	\$25,000,000
	1999	Pension expense	\$58,000,000

- (c) In 2001, 3M reports a \$263,000,000 Prepaid Pension cost on its balance sheet. It reports \$39,000,000 as pension income on its income statement. It also reports a postemployment liability of \$270,000,000.

FINANCIAL STATEMENT ANALYSIS CASE

The \$1.8 billion charge to income made by General Electric was for the postretirement benefit transition amount that existed at the time of its adoption of FASB Statement No. 106. The transition amount represents the difference between: (1) the APBO and (2) the fair value of the benefit plan assets, plus any accrued obligation or less any prepaid cost (asset). The charge taken by GE represents the unfunded portion of the accumulated postretirement benefit obligation at the date of adoption of the new standard.

The president of Peake, Inc. should be told that under the new accounting standard, the transition amount may be written off entirely in the year of FASB Statement No. 106 adoption or it may be deferred and amortized over future periods. As an immediate write-off, the transition amount is recognized in the income statement as the “cumulative effect of a change in accounting principle” (net of tax) and reported in the balance sheet as a long-term liability entitled Postretirement Benefit Obligation. If Peake, Inc. chooses deferred recognition, it must amortize the transition amount on a straight-line basis over the average remaining service period to expected retirement of the employees in place at the time of transition and expected to receive benefits. If the remaining service period is less than 20 years, Peake may elect a 20-year amortization period.

COMPARATIVE ANALYSIS CASE

- (a) Coca-Cola sponsors and/or contributes to pension plans covering substantially all U.S. employees and certain employees in international locations. Coca-Cola also sponsors nonqualified, unfunded defined benefit plans for certain officers and other employees.

PepsiCo sponsors noncontributory defined benefit pension plans covering substantially all full-time U.S. employees and certain international employees.

- (b) Coca-Cola reported “total pension expense” for all benefit plans of approximately \$62 million in 2001.

PepsiCo reported “net pension expense” of \$83 million in 2001 for U.S. plans.

(c) 2001 Funded Status	<u>Pensions</u>	<u>OPEB</u>
Coca-Cola	(\$414,000)	(\$530,000)
PepsiCo	\$157,000	(\$825,000)

- (d) Relevant rates used to compute pension information:

	Coca-Cola	PepsiCo
Discount rate (expense)	6.5%	7.4%
Rate of increase in compensation levels	4.25%	4.6%
Expected long-term rate of return on plan assets	8.5%	9.8%

INTERNATIONAL REPORTING CASE

- (a) The key differences arise from: (1) the use of different discount rates; (2) the projected benefit obligation under Swedish rules is based on current salary levels while under U.S. GAAP the PBO is based on projected salaries at retirement; (3) under U.S. GAAP gains in the pension fund are recognized while they are not “accounted for” in Sweden. Note that Volvo also has a defined contribution plan. There is no difference in U.S. and Swedish accounting for defined contribution plans.
- (b) Discount rates can affect pension expense through interest cost and affects the measurement of the PBO and ABO recognized on the balance sheet. If higher rates are used in Sweden compared to the U.S., then the benefit obligation would be lower. Expense due to interest cost (discount rate \times beginning PBO) could be higher or lower depending on how much lower the beginning benefit obligation is if the higher rate is used for the beginning PBO. Recognition of pension fund surpluses under U.S. GAAP would result in a lower net liability obligation. However, any unexpected gain would be deferred from recognition in income under U.S. GAAP.
- (c) Applying U.S. GAAP to Volvo’s pension plan results in higher income and stockholders’ equity. Thus, Volvo’s pension expense under U.S. GAAP would be lower and it would record a lower accrued pension obligation on the balance sheet. This suggests that asset gains and/or use of a lower discount rate under U.S. GAAP are the likely reasons why Volvo’s pension amounts are different under U.S. GAAP.

RESEARCH CASES

CASE 1

Students' answers will vary based on the companies selected.

CASE 2

- (a) Companies record a credit to pension expense by applying an expected rate of return to the fair value of the pension assets. When the market does well the value of the plan assets increase and the pension credit is larger. The higher returns also factor into the expected return, resulting in a higher return, lower expense, and higher income.

In the short term, managers and directors get more benefits and possibly higher salaries, to the extent that pension credits increase earnings-related bonuses. However, in the wake of a bear market, the pension surpluses will dissipate and the company may not have the resources to fund its benefit obligations and/or have competitive benefit packages to attract high-quality employees.

- (b) Because it can be costly to withdraw excess pension assets from overfunded pension plans, companies could choose to use the excesses to (1) provide additional pension benefits for current employees, (2) provide additional other post-retirement benefits (healthcare, life insurance, etc.), (3) increase pension benefits to current retirees, or (4) maintain the pension surplus by changing to cash-balance or similar plans, which reduce the overall benefit obligation. The article indicates that many companies are "letting the surplus ride," in order to reap continued pension expense credits.
- (c) The major disadvantage of overfunding is the loss of flexibility for uses of the monies invested in the pension fund. Excess funds can only be used on employee-related costs and companies may have to pay an excise tax if they contribute too much.

RESEARCH CASES (Continued)

- (d) The ethical issue relates to the fairness of reducing or holding steady benefits to current (via switches to cash balance plans) and retired employees while at the same time protecting or increasing benefits to top management. The use of so-called “top hat” benefit plans for top management could increase management’s welfare at the expense of employees and shareholders.**

PROFESSIONAL SIMULATION

Simulation 1

Explanation

- (a) The key liability issue presented in this case relates to the prior service cost of the pension plan. The present accounting is not to recognize these costs as an expense immediately or to recognize a liability unless the accumulated benefit obligation exceeds the fair value of the plan assets. In this view, pension arrangements are executory contracts (contracts in which neither party has performed) and therefore a liability does not arise until the services are received. In this case, even though prior service credit may be given, it is future benefits that the employer expects to receive from the employee. As a result, the liability and related expense should be recognized in the future.

Another approach is to recognize a liability immediately and charge expense—others might charge this amount to prior periods or establish an intangible asset. If an intangible asset was established, it would be amortized in the future on some expected benefit basis. This view is predicated on the assumption that accumulated plan benefits are a liability in that they arise from a past transaction, are a present obligation, and require payment in the future. It should be noted that the FASB in discussing conclusions related to accounting for pensions requires the recognition of a liability and an intangible asset in situations where the accumulated benefit obligation exceeds the fair value of plan assets (note that the intangible asset is recognized only up to the amount of unrecognized prior service cost).

Under current practice then, prior service costs are not considered to have accounting significance until recognized as an expense under appropriate accrual accounting. Only if the amount funded for the pension plan is less than the amount expensed would a liability appear on the balance sheet.

PROFESSIONAL SIMULATION (Continued)

- (b) The liability for each subsequent year would be computed in the same way as in the first year; that is, if and when the company expenses more than it funds, the difference would be recorded as a liability. The only change that would occur is if an additional liability had to be established because the accumulated benefit obligation exceeded the fair value of the pension plan assets.
- (c) The pension expense is generally a function of five factors. These are:
1. Service cost.
 2. Interest on the projected benefit obligation.
 3. Expected return on plan assets.
 4. Amortization of prior service cost.
 5. Amortization of gains and losses.

In addition, amortization of a pension transition amount may also affect the computation of pension expense.

- (d) The assets of the pension fund would not appear on the balance sheet of the company. An asset might appear only if the company funds its plan more than it reports pension expense. In addition, an intangible asset may be reported if the accumulated benefit obligation exceeds the fair value of plan assets. An intangible asset, Deferred Pension Cost, is reported in this situation, provided that unrecognized prior service cost is larger than this amount.
- (e) The interest rate used to compute the present value of the projected benefit obligation and the accumulated benefit obligation is a settlement rate. In other words, assumed discount rates should reflect the rates at which the pension benefits could be effectively settled. It is appropriate in estimating those rates to look to available information about rates implicit in current prices of annuity contracts that could be used to effect settlement of the obligation. In making those estimates, employers may also look to rates of return on high-quality fixed income investments currently available and expected to be available during the period to maturity of the pension benefits.

PROFESSIONAL SIMULATION (Continued)

On the asset side, an expected rate of return on plan assets should be employed. This rate should parallel the rate expected to be earned on the plan assets in the current period.

- (f) Gains and losses should be recognized only after they exceed 10 percent of the higher of the projected benefit obligation or the market-related asset value. This excess amount should be amortized over the average remaining service life of existing employees expected to participate in the plan. Certain gains and losses, it should be noted, are excluded because they are considered single occurrence gains or losses that should be associated with that given event. For example, a gain or loss that is directly related to a plant closing, a disposal of a segment, or a similar event that greatly affects the size of the employee work force, shall be recognized as a part of the gain or loss associated with that event.

SIMULATION 2

Resources

(a)

	A	B	C	D	E	F	G	H	I	J	K
1											
2											
3											
4											
5											
6											
7											
8		Expense	Cash	Acc / PrePaid		PBO	Assets	PSC	UR G-L		
9	9	113,250	(99,000)	(59,250)		(762,250)	551,000	81,000	71,000		
10	10	90,000				(625,000)	480,000	100,000			
11	11	56,250				(90,000)					
12	12	(52,000)				(56,250)					
13	13		(99,000)				57,000		(5,000)		
14	14					85,000	(85,000)				
15	15	19,000						(19,000)			
16	16					(76,000)			76,000		
17	17			(14,250)							
18	18										
19	19	113,250	(99,000)	(59,250)		(762,250)	551,000	81,000	71,000		
20	20										
21	21										
22	22										
23	23										
24	24										
25	25										
26	26										
27	27										
28	28										
29	29										
30	30										
31	31										
32	32										

- (b) Simply change the formula in cell B11 to multiply by .07; change the formula in cell B12 to multiply .10 times (C-9 * -1).

Journal Entry

Pension Expense.....	113,250	
Accrued Pension Cost.....		14,250
Cash.....		99,000

Measurement

Projected Benefit Obligation	\$ 762,250
Plan Assets at Fair Value	<u>551,000</u>
Projected benefit obligation in excess of plan assets (funded status)	(211,250)
Unrecognized Prior Service Cost	81,000
Unrecognized Gain or Loss	<u>71,000</u>
Prepaid/Accrued Pension Cost	<u>\$ (59,250)</u>

CHAPTER 21

Accounting for Leases

ASSIGNMENT CLASSIFICATION TABLE

Topics	Questions	Brief Exercises	Exercises	Problems	Cases
1. Rationale for leasing.	1, 2, 4				1, 2
2. Lessees; classification of leases; accounting by lessees.	3, 6, 7, 8, 14	1, 2, 3, 4	1, 2, 3, 5, 7, 8, 11, 12, 13, 14	1, 2, 3, 4, 6, 7, 8, 9, 11, 13, 15, 16	1, 2, 3, 4, 5
3. Disclosure of leases.	19			4, 5, 7, 8	2, 3, 5
4. Lessors; classification of leases; accounting by lessors.	5, 9, 10, 11, 12, 13	6, 7, 8, 11	4, 5, 6, 7, 9, 10, 12, 13, 14	1, 2, 3, 5, 10, 12, 14, 17	4
5. Residual values; bargain purchase options; initial direct costs.	15, 16, 17, 18	5, 9, 10	4, 8, 9, 10	6, 7, 8, 9, 14, 15	2, 5, 6
*6. Sale and leaseback.	20	12	15, 16		7,8

*This material is dealt with in an Appendix to the chapter.

ASSIGNMENT CHARACTERISTICS TABLE

Item	Description	Level of Difficulty	Time (minutes)
E21-1	Lessee entries; capital lease with unguaranteed residual value.	Moderate	15-20
E21-2	Lessee computations and entries; capital lease with guaranteed residual value.	Moderate	20-25
E21-3	Lessee entries; capital lease with executory costs and unguaranteed residual values.	Moderate	20-30
E21-4	Lessor entries; direct financing lease with option to purchase.	Moderate	20-25
E21-5	Type of lease; amortization schedule.	Simple	15-20
E21-6	Lessor entries; sales-type lease.	Moderate	15-20
E21-7	Lessee-lessor entries; sales-type lease.	Moderate	20-25
E21-8	Lessee entries with bargain purchase option.	Moderate	20-30
E21-9	Lessor entries with bargain purchase option.	Moderate	20-30
E21-10	Computation of rental; journal entries for lessor.	Moderate	15-25
E21-11	Amortization schedule and journal entries for lessee.	Moderate	20-30
E21-12	Accounting for an operating lease.	Simple	10-20
E21-13	Accounting for an operating lease.	Simple	15-20
E21-14	Operating lease for lessee and lessor.	Simple	15-20
*E21-15	Sale and leaseback.	Moderate	20-30
*E21-16	Lessee-lessor, sale-leaseback.	Moderate	20-30
P21-1	Basic lessee computations and entries; capital lease.	Simple	20-25
P21-2	Operating lease; lessee-lessor entries.	Simple	20-30
P21-3	Lessee-lessor entries; balance sheet presentation; sales-type lease.	Moderate	35-45
P21-4	Balance sheet and income statement disclosure—lessee.	Moderate	30-40
P21-5	Balance sheet and income statement disclosure—lessor.	Moderate	30-40
P21-6	Lessee entries with residual value.	Moderate	25-35
P21-7	Lessee entries and balance sheet presentation; capital lease.	Moderate	25-30
P21-8	Lessee entries and balance sheet presentation; capital lease.	Moderate	20-30
P21-9	Lessee entries; capital lease with monthly payments.	Moderate	20-30
P21-10	Lessor computations and entries; sales-type lease with unguaranteed residual value.	Complex	30-40
P21-11	Lessee computations and entries; capital lease with unguaranteed residual value.	Complex	30-40
P21-12	Basic lessee accounting with difficult PV calculation.	Moderate	40-50
P21-13	Lessor computations and entries; sales-type lease with guaranteed residual value.	Complex	30-40
P21-14	Lessee computations and entries; capital lease with guaranteed residual value.	Complex	30-40
P21-15	Operating lease versus capital lease.	Moderate	30-40
P21-16	Lessee-lessor accounting for residual value.	Complex	30-40

ASSIGNMENT CHARACTERISTICS TABLE (Continued)

Item	Description	Level of Difficulty	Time (minutes)
C21-1	Lessee accounting and reporting.	Moderate	15-25
C21-2	Lessor and lessee accounting and disclosure.	Moderate	25-35
C21-3	Lessee capitalization criteria.	Moderate	20-30
C21-4	Comparison of different types of accounting by lessee and lessor.	Moderate	15-25
C21-5	Lessee capitalization of bargain purchase option.	Moderate	30-35
C21-6	Lease capitalization, bargain purchase option	Moderate	20-25
*C21-7	Sale-leaseback.	Moderate	15-25
*C21-8	Sale-leaseback.	Moderate	20-25

ANSWERS TO QUESTIONS

1. (a) Possible advantages of leasing:
- (1) Leasing permits the write-off of the full cost of the assets (including any land and residual value), thus providing a possible tax advantage.
 - (2) Leasing may be more flexible in that the lease agreement may contain less restrictive provisions than the bond indenture.
 - (3) Leasing permits 100% financing of assets.
 - (4) Leasing may permit more rapid changes in equipment, reduce the risk of obsolescence, and pass the risk in residual value to the lessor or a third party.
 - (5) Leasing may have favorable tax advantages.

Assuming that funds are readily available through debt financing, there may not be great advantages (in addition to the above-mentioned) to signing a noncancelable, long-term lease. One of the usual advantages of leasing is its availability when other debt financing is unavailable.

- (b) Possible disadvantages of leasing:
- (1) In an ever-increasing inflationary economy, retaining title to assets may be desirable as a hedge against inflation.
 - (2) Interest rates for leasing often are higher and a profit factor may be included in addition.
- (c) Since a long-term noncancelable lease which is used as a financing device generally results in the capitalization of the leased assets and recognition of the lease commitment in the balance sheet, the comparative effect is not very different from purchase and ownership. Assets leased under such terms would be capitalized at the present value of the future lease payments; this value is probably somewhat equivalent to the purchase price of the assets. Bonds sold at par would be nearly equivalent to the present value of the future lease payments; in neither case would interest be capitalized. The amounts presented in the balance sheet would be quite comparable as would the general classifications; the specific labels (leased assets and lease obligation) would be different.

2. President Joan Elaine Robinson might be told to consider the following provisions of the lease arrangement:
1. Duration of the lease.
 2. Character of the rental payments; that is, level, increasing, or decreasing in amount.
 3. Lessor's obligation for taxes, insurance, maintenance, etc.
 4. Restrictions relative to financial operations.
 5. Rights and penalties relative to early termination.
 6. Provisions relative to default.
 7. Alternatives of the lessee at termination: (a) option to buy or (b) option to renew.
 8. Lessee's guarantee of residual value (or third parties' guarantee of residual value).

3. Lessees have available two lease accounting methods: (a) the operating method and (b) the capital-lease method. Under the operating method, the leased asset remains the property of the lessor with the payment of a lease rental recognized as rental expense. Generally the lessor pays the insurance, taxes, and maintenance costs related to the leased asset. Under the capital lease method, the lessee treats the lease transaction as if an asset were being purchased on credit; therefore, the lessee: (1) sets up an asset and a related obligation and (2) recognizes depreciation of the asset, gradual liquidation of the obligation, and interest.

Questions Chapter 21 (Continued)

4. Wayne Higley Company's rental of warehousing space on a short-term and sporadic basis is seldom construed as the acquisition of an asset or even a financing arrangement. The contract consists mainly of services which are to be performed proportionately by the lessor and the lessee—the rent to be paid by the lessee is offset by the service to be performed by the lessor. While a case might be built for the existence of an acquisition of some property rights, be they ever so trifling, the accounting treatment would be to record only the periodic rental payments as they are made and to allocate rent expense to the periods in which the benefits are received. No asset would be capitalized in this case, and an obligation for lease payments would be recorded only to the extent that services received from the lessor exceeded the rentals paid; that is, the rent payment is overdue. This lease should be reported as an operating lease.
5. Minimum rental payments are the periodic payments made by the lessee and received by the lessor. These payments may include executory costs such as maintenance, taxes, and insurance. Minimum lease payments are payments required or expected to be made by the lessee. They include minimum rental payments less executory costs, a bargain purchase option, a guaranteed residual value, and a penalty for failure to renew the lease. The present value of the minimum lease payments is capitalized by the lessee.
6. The distinction between a direct financing lease and a sales-type lease is the presence or absence of a manufacturer's or dealer's profit. A sales-type lease involves a manufacturer's or dealer's profit, and a direct financing lease does not. The profit is the difference between the fair value of the leased property at the inception of the lease and the lessor's cost or carrying value.
7. Under the operating method, a rent expense (and a compensating liability) accrues day by day to the lessee as the property is used. The lessee assigns rent to the periods benefiting from the use of the asset and ignores in the accounting any commitments to make future payments. Appropriate accruals are made if the accounting period ends between cash payment dates.
8. Under the capital-lease method, the lessee treats the lease transactions as if the asset were being purchased on time: a financial transaction in which an asset is acquired and an obligation is created. The asset and the obligation are stated in the lessee's balance sheet at the lower of: (1) the present value of the minimum lease payments (excluding executory costs) during the lease term or (2) the fair market value of the leased asset at the inception of the lease. The present value of the lease payments is computed using the lessee's incremental borrowing rate unless the implicit rate used by the lessor is lower and the lessee has knowledge of it. The effective-interest method is used to allocate each lease payment between a reduction of the lease obligation and interest expense.

If the lease transfers ownership or contains a bargain purchase option, the asset is amortized in a manner consistent with the lessee's normal depreciation policy on assets owned, using the economic life of the asset and allowing for salvage value. If the lease does not transfer ownership or contain a bargain purchase option, the leased asset is amortized over the lease term.

9. From the standpoint of the lessor, leases may be classified for accounting purposes as: (a) operating leases, (b) direct financing leases, and (c) sales-type leases.

From the standpoint of lessors, leases that meet one or more of the following four criteria:

- (1) The lease transfers ownership,
- (2) The lease contains a bargain purchase option,
- (3) The lease term is equal to 75% or more of the estimated economic life of the property,
- (4) The present value of the minimum lease payments (excluding executory costs) equals or exceeds 90% of the fair value of the property,

and meet both of the following criteria:

- (1) Collectibility of the payments required from the lessee is reasonably predictable, and

Questions Chapter 21 (Continued)

- (2) No important uncertainties surround the amount of unreimbursable costs yet to be incurred by the lessor,

are classified as direct financing leases or sales-type leases. All other leases are classified as operating leases. The distinction for the lessor between a direct financing lease and a sales-type lease is the presence or absence of a manufacturer's or dealer's profit or loss.

10. If the lease transaction satisfies the necessary criteria to be classified as a direct-financing lease, the lessor records a "lease receivable" for the leased asset. The lease receivable is the present value of the minimum lease payments. Minimum lease payments include the rental payments (excluding executory costs), bargain purchase option (if any), guaranteed residual value (if any) and penalty forfeiture to renew (if any). In addition, the present value of the unguaranteed residual value (if any) must also be included.
11. Under the operating method, each rental receipt of the lessor is recorded as rental revenue on the use of an item carried as a fixed asset. The fixed asset is depreciated in the normal manner, with the depreciation expense of the period being matched against the rental revenue. The amount of revenue recognized in each accounting period is equivalent to the amount of rent receivable according to the provisions of the lease. In addition to the depreciation charge, maintenance costs and the cost of any other services rendered under the provisions of the lease that pertain to the current accounting period are charged against the recognized revenue.
12. Joan Elbert Company can use the sales-type lease accounting method if at the inception of the lease a manufacturer's or dealer's profit (or loss) exists and the lease meets one or more of the following four criteria:
- (1) The lease transfers ownership of the property to the lessee,
 - (2) The lease contains a bargain purchase option,
 - (3) The lease term is equal to 75% or more of the estimated economic life of the property leased,
 - (4) The present value of the minimum lease payments (excluding executory costs) equals or exceeds 90% of the fair value of the leased property.

Both of the following criteria must also be met:

- (1) Collectibility of the payments required from the lessee is reasonably predictable, and
 - (2) No important uncertainties surround the amount of unreimbursable costs yet to be incurred by the lessor.
13. Gordon Graham Corporation should recognize the difference between the fair value (normal sales price) of the leased property at the inception of the lease and its cost or carrying amount (book value) as gross profit in the period the sales-type lease begins and the assets are transferred to the lessee. The balance of the transaction is treated as a direct financing lease (i.e., interest revenue is earned over the lease term).
14. The lease agreement between Joann Skabo, M.D. and Cheryl Countryman Realty, Inc. appears to be in substance a purchase of property. Because the lease has a bargain purchase option which transfers ownership of the property to the lessee, the lease is a capital lease. Additional evidence of the capital lease character is that the lessor recovers all costs plus a reasonable rate of return on investment. As a capital lease, the property and the related obligation should be recorded at the discounted amount of the future lease payments with that amount being allocated between the land and the building in proportion to their fair values at the inception of the lease. The building should be depreciated over its estimated useful life.
15. (a) (1) The lessee's accounting for a lease with an unguaranteed residual value is the same as the accounting for a lease with no residual value in terms of the computation of the minimum lease payments and the capitalized value of the leased asset and the lease obligation.

Questions Chapter 21 (Continued)

- (2) A guaranteed residual value affects the lessee's computation of the minimum lease payments and the capitalized amount of the leased asset and the lease obligation. The capitalized value is affected initially by the presence of a guaranteed residual value since the present value of the lease obligation is now made up of two components—the periodic lease payments and the guaranteed residual value. The amortization of the lease obligation will result in a lease obligation balance at the end of the lease period which is equal to the guaranteed residual value. Upon termination of the lease, the lessee may recognize a gain or loss depending on the relationship between the actual residual value and the amount guaranteed.
- (b) (1) & (2) The amount to be recovered by the lessor is the same whether the residual value is guaranteed or unguaranteed. Therefore, the amount of the periodic lease payments as set by the lessor is the same whether the residual value is guaranteed or unguaranteed.
16. If the estimate of the residual value declines, the lessor must recognize a loss to the extent of the decline in the period of the decline. Taken literally, the accounting for the entire transaction must be revised by the lessor using the changed estimate. The lease receivable is reduced by the amount of the decline in the estimated residual value. Upward adjustments of the estimated residual value are not made.
17. If a bargain purchase option exists, the lessee must increase the present value of the minimum lease payments by the present value of the option price. A bargain purchase option also affects the depreciable life of the leased asset since the lessee must depreciate the asset over its economic life rather than the term of the lease. If the lessee fails to exercise the option, the lessee will recognize a loss to the extent of the net book value of the leased asset in the period that the option expired.
18. Initial direct costs are the incremental costs incurred by the lessor that are directly associated with negotiating, consummating and initially processing leasing transactions. For operating leases, the lessor should defer initial direct costs and allocate them over the lease term in proportion to the recognition of rental income. In a sales-type lease transaction, the lessor expenses the initial direct cost in the year of incurrence (i.e., the year in which profit on the sale is recognized). In a direct-financing lease, initial direct costs should be added to the net investment in the lease and amortized over the life of the lease as a yield adjustment.
19. The following disclosures should be made by the lessee for noncapitalized leases:
- (a) The future minimum rental payments required as of the date of the latest balance sheet presented, in the aggregate, and for each of the five succeeding fiscal years.
 - (b) The total minimum rentals to be received in the future under noncancelable subleases, if any, as of the date of the latest balance sheet presented.
 - (c) The total rental expense showing separately the minimum rentals, contingent rentals, and sublease rentals.
- *20. The term "sale-leaseback" describes a transaction in which the owner of property sells such property to another and immediately leases it back from the new owner. The property is sold generally at a price equal to or less than current market value and leased back for a term approximating the property's useful life for lease payments sufficient to repay the buyer for the cash invested plus a reasonable return on the buyer's investment. The purpose of the transaction is to raise money with certain property given as security. For accounting purposes the sale-leaseback should be accounted for by the lessee as a capital lease if the criteria are satisfied and by the lessor as a purchase and a direct financing lease if the criteria are satisfied. Any income or loss experienced by the seller-lessee from the sale of the assets that are leased back should be deferred and amortized over the lease term (or the economic life if either criteria (1) a bargain purchase option or (2) a transfer of ownership occurs at the end of the lease is satisfied) in proportion to the amortization of the leased assets. Losses should be recognized immediately. Furthermore, minor leasebacks (present value of rentals less than 10% of fair value) should be reported as a sale with related gain recognition.

SOLUTIONS TO BRIEF EXERCISES

BRIEF EXERCISE 21-1

The lease does not meet the transfer of ownership test, the bargain purchase test, or the economic life test $[(5 \text{ years} \div 8 \text{ years}) < 75\%]$. However, it does pass the recovery of investment test. The present value of the minimum lease payments $(\$30,000 \times 4.16986 = \$125,096)$ is greater than 90% of the FMV of the asset $(90\% \times \$138,000 = \$124,200)$. Therefore, Best Buy should classify the lease as a capital lease.

BRIEF EXERCISE 21-2

Leased Equipment Under Capital Leases.....	130,000	
Lease Liability		130,000
Lease Liability	37,283	
Cash		37,283

BRIEF EXERCISE 21-3

Interest Expense	19,686	
Interest Payable $[(\$200,000 - \$35,947) \times 12\%]$		19,686
Depreciation Expense	25,000	
Accumulated Depreciation $(\$200,000 \times 1/8)$		25,000

BRIEF EXERCISE 21-4

Interest Payable	19,686	
Lease Liability	16,261	
Cash		35,947

BRIEF EXERCISE 21-5

Rent Expense	37,500	
Cash		37,500

BRIEF EXERCISE 21-6

Lease Receivable	150,000	
Equipment.....		150,000
PV of rentals (4.88965 X \$30,677)		
Cash	30,677	
Lease Receivable		30,677

BRIEF EXERCISE 21-7

Interest Receivable	10,739	
Interest Revenue		10,739
[((\$150,000 – \$30,677) X 9%]		

BRIEF EXERCISE 21-8

Cash	15,000	
Rent Revenue		15,000
Depreciation Expense	9,000	
Accumulated Depreciation (\$72,000 X 1/8).....		9,000

BRIEF EXERCISE 21-9

Leased Machinery Under Capital Leases.....	155,013	
Lease Liability		155,013
[PV of rentals \$30,000 X 4.79079 \$143,724		
PV of guar. RV \$20,000 X .56447 <u>11,289</u>		
		<u>\$155,013]</u>

Lease Liability	30,000	
Cash		30,000

BRIEF EXERCISE 21-10

Lease Receivable	155,013	
Machinery		155,013
Cash	30,000	
Lease Receivable		30,000

BRIEF EXERCISE 21-11

Lease Receivable.....	183,296	
Sales.....		183,296
(\$45,400 X 4.03735 = \$183,296)		
Cost of Goods Sold.....	110,000	
Inventory.....		110,000
Cash	45,400	
Lease Receivable.....		45,400

***BRIEF EXERCISE 21-12**

Cash	35,000	
Truck		28,000
Unearned Profit on Sale-Leaseback		7,000
Leased Truck Under Capital Leases.....	35,000	
Lease Liability		35,000
(\$9,233 X 3.79079)		
Depreciation Expense	7,000	
Accumulated Depreciation (\$35,000 X 1/5)		7,000
Unearned Profit on Sale-Leaseback.....	1,400	
Depreciation Expense (\$7,000 X 1/5)		1,400
Interest Expense (\$35,000 X 10%).....	3,500	
Lease Liability	5,733	
Cash		9,233

SOLUTIONS TO EXERCISES

EXERCISE 21-1 (15-20 minutes)

- (a) This is a capital lease to Burke since the lease term (5 years) is greater than 75% of the economic life (6 years) of the leased asset. The lease term is $83\frac{1}{3}\%$ ($5 \div 6$) of the asset's economic life.
- (b) Computation of present value of minimum lease payments:
 $\$8,668 \times 4.16986^* = \$36,144$

*Present value of an annuity due of 1 for 5 periods at 10%.

(c)	1/1/04	Leased Machine Under Capital Leases	36,144	
		Lease Liability		36,144
		Lease Liability	8,668	
		Cash		8,668
	12/31/04	Depreciation Expense	7,229	
		Accumulated Depreciation—		
		Capital Leases		7,229
		(\$36,144 \div 5 = \$7,229)		
		Interest Expense	2,748	
		Interest Payable		2,748
		[($\\$36,144 - \\$8,668$) \times .10]		
	1/1/05	Lease Liability	5,920	
		Interest Payable	2,748	
		Cash		8,668

EXERCISE 21-2 (20-25 minutes)

(a) To Delaney, the lessee, this lease is a capital lease because the terms satisfy the following criteria:

1. The lease term is greater than 75% of the economic life of the leased asset; that is, the lease term is $83\frac{1}{3}\%$ (50/60) of the economic life.
2. The present value of the minimum lease payments is greater than 90% of the fair value of the leased asset; that is, the present value of \$8,555 (see below) is 98% of the fair value of the leased asset:

(b) The minimum lease payments in the case of a guaranteed residual value by the lessee include the guaranteed residual value. The present value therefore is:

Monthly payment of \$200 for 50 months.....	\$7,840
Residual value of \$1,180	<u>715</u>
Present value of minimum lease payments.....	<u>\$8,555</u>

(c) Leased Property Under Capital Leases.....	8,555
Lease Liability	8,555

(d) Depreciation Expense	147.50
Accumulated Depreciation—Capital Leases.....	147.50
[(\$8,555 – \$1,180) ÷ 50 months = \$147.50]	

(e) Lease Liability	114.45
Interest Expense (1% X \$8,555).....	85.55
Cash	200.00

EXERCISE 21-3 (20-30 minutes)

Capitalized amount of the lease:

Yearly payment	\$72,000.00
Executory costs	<u>2,470.51</u>
Minimum annual lease payment	<u>\$69,529.49</u>

EXERCISE 21-3 (Continued)

Present value of minimum lease payments

\$69,529.49 X 6.32825 = \$440,000.00

1/1/05	Leased Building Under Capital Leases.....	440,000.00	
	Lease Liability		440,000.00
1/1/05	Executory Costs—Property Taxes.....	2,470.51	
	Lease Liability	69,529.49	
	Cash		72,000.00
12/31/05	Depreciation Expense	44,000.00	
	Accumulated Depreciation—Capital Leases.....		44,000.00
	(\$440,000 ÷ 10)		
12/31/05	Interest Expense (See Schedule 1).....	44,456.46	
	Interest Payable		44,456.46
1/1/06	Executory Costs—Property Taxes.....	2,470.51	
	Interest Payable	44,456.46	
	Lease Liability	25,073.03	
	Cash		72,000.00
12/31/06	Depreciation Expense	44,000.00	
	Accumulated Depreciation—Capital Leases.....		44,000.00
12/31/06	Interest Expense.....	41,447.70	
	Interest Payable		41,447.70

EXERCISE 21-3 (Continued)

Schedule 1

**Kimberly-Clark Corp.
Lease Amortization Schedule
(Lessee)**

Date	Annual Payment Less Executory Costs	Interest (12%) on Liability	Reduction of Lease Liability	Lease Liability
1/1/05				\$440,000.00
1/1/05	\$69,529.49	\$ 0	\$69,529.49	370,470.51
1/1/06	69,529.49	44,456.46	25,073.03	345,397.48
1/1/07	69,529.49	41,447.70	28,081.79	317,315.69

EXERCISE 21-4 (20-25 minutes)

Computation of annual payments

Cost (fair market value) of leased asset to lessor	\$160,000.00
Less: Present value of salvage value (residual value in this case) \$16,000 X .82645 (Present value of 1 at 10% for 2 periods)	<u>(13,223.20)</u>
Amount to be recovered through lease payments	<u>\$146,776.80</u>
Two periodic lease payments $\$146,776.80 \div 1.73554^*$	<u>\$84,571.26</u>

*Present value of an ordinary annuity of 1 for 2 periods at 10%

**CASTLE LEASING COMPANY (Lessor)
Lease Amortization Schedule**

Date	Annual Payment Less Executory Costs	Interest on Lease Receivable	Recovery of Lease Receivable	Lease Receivable
1/1/05				\$160,000.00
12/31/05	\$84,571.26	\$16,000.00	\$68,571.26	91,428.74
12/31/06	84,571.26	<u>9,142.52*</u>	75,428.74	16,000.00
		<u>\$25,142.52</u>		

*Difference of \$.35 due to rounding.

EXERCISE 21-4 (Continued)

(a)	1/1/05	Lease Receivable.....	160,000.00	
		Equipment		160,000.00
12/31/05		Cash (\$84,571.26 + \$5,000)	89,571.26	
		Executory Costs		
		Payable		5,000.00
		Lease Receivable		68,571.26
		Interest Revenue		16,000.00
12/31/06		Cash	89,571.26	
		Executory Costs		
		Payable		5,000.00
		Lease Receivable		75,428.74
		Interest Revenue		9,142.52
(b)	12/31/06	Cash	16,000.00	
		Lease Receivable		16,000.00

EXERCISE 21-5 (15-20 minutes)

- (a) Because the lease term is longer than 75% of the economic life of the asset and the present value of the minimum lease payments is more than 90% of the fair value of the asset, it is a capital lease to the lessee. Assuming collectibility of the rents is reasonably assured and no important uncertainties surround the amount of unreimbursable costs yet to be incurred by the lessor, the lease is a direct financing lease to the lessor.

The lessee should adopt the capital lease method and record the leased asset and lease liability at the present value of the minimum lease payments using the lessee's incremental borrowing rate or the interest rate implicit in the lease if it is lower than the incremental rate and is known to the lessee. The lessee's depreciation depends on whether ownership transfers to the lessee or if there is a bargain purchase option. If one of these conditions is fulfilled, amortization would be over the economic life of the asset. Otherwise, it would be depreciated over the lease term. Because both the economic life of the asset and the lease term are three years, the leased asset should be depreciated over this period.

EXERCISE 21-5 (Continued)

The lessor should adopt the direct financing lease method and replace the asset cost of \$95,000 with Lease Receivable of \$95,000. (See schedule below.) Interest would be recognized annually at a constant rate relative to the unrecovered net investment.

Cost (fair market value of leased asset).....	<u>\$95,000</u>
Amount to be recovered by lessor through lease payments	<u>\$95,000</u>
Three annual lease payments: $\$95,000 \div 2.53130^*$	<u>\$37,530</u>

*Present value of an ordinary annuity of 1 for 3 periods at 9%.

(b) Schedule of Interest and Amortization

	Rent Receipt/ Payment	Interest Revenue/ Expense	Reduction of Principal	Receivable/ Liability
1/1/05	—	—	—	\$95,000
12/31/05	\$37,530	\$8,550*	\$28,980	66,020
12/31/06	37,530	5,942	31,588	34,432
12/31/07	37,530	3,098**	34,432	0

*\$95,000 X .09 = \$8,550

**rounding difference

EXERCISE 21-6 (15-20 minutes)

(a) $\$35,013 \times 5.7122 = \$200,001$

(b) 1/1/04	Lease Receivable*	200,001	
	Cost of Goods Sold	160,000	
	Sales		200,001
	Inventory		160,000
1/1/04	Cash.....	35,013	
	Lease Receivable.....		35,013

EXERCISE 21-6 (Continued)

12/31/04	Interest Receivable	18,139	
	Interest Revenue		18,139
	[($\$200,001 - \$35,103$) X .11]		

EXERCISE 21-7 (20-25 minutes)

- (a) This is a capital lease to Flynn since the lease term is 75% ($6 \div 8$) of the asset's economic life. In addition, the present value of the minimum lease payments is more than 90% of the fair value of the asset.

This is a capital lease to Bensen since collectibility of the lease payments is reasonably predictable, there are no important uncertainties surrounding the costs yet to be incurred by the lessor, and the lease term is 75% of the asset's economic life. Because the fair value of the equipment ($\$150,000$) exceeds the lessor's cost ($\$120,000$), the lease is a sales-type lease.

- (b) Computation of annual rental payment:

$$\frac{\$150,000 - (\$10,000 \times .53464)^*}{4.69590^{**}} = \underline{\underline{\$30,804}}$$

*Present value of \$1 at 11% for 6 periods.

**Present value of an annuity due at 11% for 6 periods.

(c) 1/1/04	Leased Equipment Under Capital		
	Leases.....	141,846	
	Lease Liability		141,846
	($\$30,804 \times 4.60478$)***		
	Lease Liability	30,804	
	Cash		30,804

***Present value of an annuity due at 12% for 6 periods.

12/31/04	Depreciation Expense	23,641	
	Accumulated Depreciation		23,641
	($\$141,846 \div 6$ years)		
	Interest Expense	13,325	
	Interest Payable		13,325
	($\$141,846 - \$30,804$) X .12		

EXERCISE 21-7 (Continued)

(d) 1/1/04	Lease Receivable.....	150,000*	
	Cost of Goods Sold.....	114,654**	
	Sales		144,654*
	Inventory.....		120,000
	*(\$30,804 X 4.6950) + (\$10,000 X .53464)		
	**\$120,000 – (\$10,000 X .53464)		
	***\$30,804 X 4.6950		
	Cash.....	30,804	
	Lease Receivable.....		30,804
12/31/04	Interest Receivable.....	13,112	
	Interest Revenue.....		13,112
	[(\$150,000 – \$30,804) X .11]		

EXERCISE 21-8 (20-30 minutes)

- (a) The lease agreement has a bargain purchase option and thus meets the criteria to be classified as a capital lease from the viewpoint of the lessee. The present value of the minimum lease payments exceeds 90% of the fair value of the assets.
- (b) The lease agreement has a bargain purchase option. The collectibility of the lease payments is reasonably predictable, and there are no important uncertainties surrounding the costs yet to be incurred by the lessor. The lease, therefore, qualifies as a capital-type lease from the viewpoint of the lessor. Due to the fact that the initial amount of lease receivable (net investment) (which in this case equals the present value of the minimum lease payments, \$91,000) exceeds the lessor's cost (\$65,000), the lease is a sales-type lease.
- (c) Computation of lease liability:
- | | |
|--------------------|---|
| \$21,227.65 | Annual rental payment |
| X 4.16986 | PV of annuity due of 1 for n = 5, i = 10% |
| <u>\$88,516.32</u> | PV of periodic rental payments |

EXERCISE 21-8 (Continued)

\$ 4,000.00	Bargain purchase option
X .62092	PV of 1 for n= 5, i = 10%
<u>\$ 2,483.68</u>	PV of bargain purchase option
\$88,516.32	PV of periodic rental payments
+ 2,483.68	PV of bargain purchase option
<u>\$91,000.00</u>	Lease liability

**DENISE RODE COMPANY (Lessee)
Lease Amortization Schedule**

Date	Annual Lease Payment Plus BPO	Interest (10%) on Liability	Reduction of Lease Liability	Lease Liability
5/1/04				\$91,000.00
5/1/04	\$ 21,227.65		\$21,227.65	69,772.35
5/1/05	21,227.65	\$ 6,977.24	14,250.41	55,521.94
5/1/06	21,227.65	5,552.19	15,675.46	39,846.48
5/1/07	21,227.65	3,984.65	17,243.00	22,603.48
5/1/08	21,227.65	2,260.35	18,967.30	3,636.18
4/30/09	<u>4,000.00</u>	<u>363.82*</u>	<u>3,636.18</u>	0
	<u>\$110,138.25</u>	<u>\$19,138.25</u>	<u>\$91,000.00</u>	

*Rounding error is 20 cents.

(d) 5/1/04	Leased Equipment Under Capital Leases.....	91,000.00	
	Lease Liability		91,000.00
	Lease Liability	21,227.65	
	Cash		21,227.65
12/31/04	Interest Expense	4,651.49	
	Interest Payable		4,651.49
	(\$6,977.24 X 8/12 = \$4,651.49)		

EXERCISE 21-8 (Continued)

	Depreciation Expense	6,066.67	
	Accumulated Depreciation		
	—Capital Leases		6,066.67
	(\$91,000.00 ÷ 10 =		
	\$9,100.00; \$9,100.00 X		
	8/12 = \$6,066.67)		
1/1/05	Interest Payable	4,651.49	
	Interest Expense		4,651.49
5/1/05	Interest Expense	6,977.24	
	Lease Liability	14,250.41	
	Cash		21,227.65
12/31/05	Interest Expense	3,701.46	
	Interest Payable		3,701.46
	(\$5,552.19 X 8/12 =		
	\$3,701.46)		
12/31/05	Depreciation Expense	9,100.00	
	Accumulated Depreciation		
	—Capital Leases		9,100.00
	(\$91,000.00 ÷ 10 years =		
	\$9,100.00)		

(Note to instructor: Because a bargain purchase option was involved, the leased asset is depreciated over its economic life rather than over the lease term.)

EXERCISE 21-9 (20-30 minutes)

Note: The lease agreement has a bargain purchase option. The collectibility of the lease payments is reasonably predictable, and there are no important uncertainties surrounding the costs yet to be incurred by the lessor. The lease, therefore, qualifies as a capital lease from the viewpoint of the lessor.

Due to the fact that the amount of the sale (which in this case equals the present value of the minimum lease payments, \$91,000) exceeds the lessor's cost (\$65,000), the lease is a sales-type lease.

EXERCISE 21-9 (Continued)

The minimum lease payments associated with this lease are the periodic annual rents plus the bargain purchase option. There is no residual value relevant to the lessor's accounting in this lease.

(a) The lease receivable is computed as follows:

\$21,227.65	Annual rental payment
X 4.16986	PV of annuity due of 1 for n = 5, i = 10%
<u>\$88,516.32</u>	PV of periodic rental payments
\$ 4,000.00	Bargain purchase option
X .62092	PV of 1 for n = 5, i = 10%
<u>\$ 2,483.68</u>	PV of bargain purchase option
\$88,516.32	PV of periodic rental payments
+ 2,483.68	PV of bargain purchase option
<u>\$91,000.00</u>	Lease receivable at inception

(b) **MOONEY LEASING COMPANY (Lessor)**
Lease Amortization Schedule

Date	Annual Lease Payment Plus BPO	Interest (10%) on Lease Receivable	Recovery of Lease Receivable	Lease Receivable
5/1/04				\$91,000.00
5/1/04	\$ 21,227.65		\$21,227.65	69,772.35
5/1/05	21,227.65	\$ 6,977.24	14,250.41	55,521.94
5/1/06	21,227.65	5,552.19	15,675.46	39,846.48
5/1/07	21,227.65	3,984.65	17,243.00	22,603.48
5/1/08	21,227.65	2,260.35	18,967.30	3,636.18
4/30/09	<u>4,000.00</u>	<u>363.82*</u>	<u>3,636.18</u>	0
	<u>\$110,138.25</u>	<u>\$19,138.25</u>	<u>\$91,000.00</u>	

*Rounding error is 20 cents.

EXERCISE 21-9 (Continued)

(c) 5/1/04	Lease Receivable.....	91,000.00	
	Cost of Goods Sold.....	65,000.00	
	Sales		91,000.00
	Inventory.....		65,000.00
	Cash.....	21,227.65	
	Lease Receivable.....		21,227.65
12/31/04	Interest Receivable.....	4,651.49	
	Interest Revenue.....		4,651.49
	(\$6,977.24 X 8/12 = \$4,651.49)		
5/1/05	Cash.....	21,227.65	
	Lease Receivable.....		14,250.41
	Interest Receivable		4,651.49
	Interest Revenue.....		2,325.75
	(\$6,977.24 — \$4,651.49)		
12/31/05	Interest Receivable.....	3,701.46	
	Interest Revenue.....		3,701.46
	(\$5,552.19 X 8/12 = \$3,701.46)		
5/1/06	Cash.....	21,227.65	
	Lease Receivable.....		15,675.46
	Interest Receivable		3,701.46
	Interest Revenue.....		1,850.73
	(\$5,552.19 – \$3,701.46)		
12/31/06	Interest Receivable.....	2,656.43	
	Interest Revenue.....		2,656.43
	(\$3,984.65 X 8/12 = \$2,656.43)		

EXERCISE 21-10 (15-25 minutes)

(a) Fair market value of leased asset to lessor	\$245,000.00
Less: Present value of unguaranteed residual value \$43,622 X .56447 (present value of 1 at 10% for 6 periods)	<u>24,623.31</u>
Amount to be recovered through lease payments	<u>\$220,376.69</u>
Six periodic lease payments \$220,376.69 ÷ 4.79079*	<u>\$46,000.00**</u>

*Present value of annuity due of 1 for 6 periods at 10%.

**Rounded to the nearest dollar.

(b) **MORGAN MARIE LEASING COMPANY (Lessor)**
Lease Amortization Schedule

Date	Annual Lease Payment Plus URV	Interest (10%) on Lease Receivable	Recovery of Lease Receivable	of Lease Receivable
1/1/04				\$245,000
1/1/04	\$ 46,000		\$ 46,000	199,000
1/1/05	46,000	\$19,900	26,100	172,900
1/1/06	46,000	17,290	28,710	144,190
1/1/07	46,000	14,419	31,581	112,609
1/1/08	46,000	11,261	34,739	77,870
1/1/09	46,000	7,787	38,213	39,657
12/31/09	<u>43,622</u>	<u>3,965</u>	<u>39,657</u>	0
	<u>\$319,622</u>	<u>\$74,622</u>	<u>\$245,000</u>	

(c) 1/1/04	Lease Receivable	245,000	
	Equipment		245,000
1/1/04	Cash	46,000	
	Lease Receivable		46,000
12/31/04	Interest Receivable	19,900	
	Interest Revenue		19,900
1/1/05	Cash	46,000	
	Lease Receivable		26,100
	Interest Receivable		19,900
12/31/05	Interest Receivable	17,290	
	Interest Revenue		17,290

EXERCISE 21-11 (20-30 minutes)

Note: This lease is a capital lease to the lessee because the lease term (five years) exceeds 75% of the remaining economic life of the asset (five years). Also, the present value of the minimum lease payments exceeds 90% of the fair value of the asset.

\$18,142.95	Annual rental payment
X 4.16986	PV of an annuity due of 1 for n = 5, i = 10%
<u>\$75,653.56</u>	PV of minimum lease payments

(a) **JANET PLOTE COMPANY (Lessee)**
Lease Amortization Schedule

Date	Annual Lease Payment	Interest (10%) on Liability	Reduction of Lease Liability	Lease Liability
1/1/04				\$75,653.56
1/1/04	\$18,142.95		\$18,142.95	57,510.61
1/1/05	18,142.95	\$ 5,751.06	12,391.89	45,118.72
1/1/06	18,142.95	4,511.87	13,631.08	31,487.64
1/1/07	18,142.95	3,148.76	14,994.19	16,493.45
1/1/08	<u>18,142.95</u>	<u>1,649.50*</u>	<u>16,493.45</u>	0
	<u>\$90,714.75</u>	<u>\$15,061.19</u>	<u>\$75,653.56</u>	

*Rounding error is 15 cents.

(b) 1/1/04	Leased Equipment Under Capital Leases	75,653.56	
	Lease Liability		75,653.56
1/1/04	Lease Liability	18,142.95	
	Cash		18,142.95
During 2004			
	Insurance Expense	900.00	
	Cash		900.00
	Property Tax Expense	1,600.00	
	Cash		1,600.00

EXERCISE 21-11 (Continued)

12/31/04	Interest Expense	5,751.06	
	Interest Payable		5,751.06
	Depreciation Expense	15,130.71	
	Accumulated Depreciation —Capital Leases		15,130.71
	(\$75,653.56 ÷ 5 = \$15,130.71)		
1/1/05	Interest Payable	5,751.06	
	Interest Expense		5,751.06
	Interest Expense	5,751.06	
	Lease Liability	12,391.89	
	Cash		18,142.95
During 2002			
	Insurance Expense	900.00	
	Cash		900.00
	Property Tax Expense	1,600.00	
	Cash		1,600.00
12/31/05	Interest Expense	4,511.87	
	Interest Payable		4,511.87
	Depreciation Expense	15,130.71	
	Accumulated Depreciation —Capital Leases		15,130.71

Note to instructor:

- The lessor sets the annual rental payment as follows:

Fair market value of leased asset to lessor	\$80,000.00
Less: Present value of unguaranteed residual value \$7,000 X .62092 (present value of 1 at 10% for 5 periods)	<u>4,346.44</u>
Amount to be recovered through lease payments	<u>\$75,653.56</u>
Five periodic lease payments \$75,653.56 ÷ 4.16986*	<u>\$18,142.95</u>

*Present value of annuity due of 1 for 5 periods at 10%.

EXERCISE 21-11 (Continued)

2. The unguaranteed residual value is not subtracted when depreciating the leased asset.

EXERCISE 21-12 (10-20 minutes)

- (a) Entries for Doug Nelson are as follows:

1/1/04	Building	4,500,000	
	Cash		4,500,000
12/31/04	Cash	275,000	
	Rental Revenue		275,000
	Depreciation Expense	90,000	
	Accumulated Depreciation		
	—Building		90,000
	(\$4,500,000 ÷ 50)		
	Property Tax Expense	85,000	
	Insurance Expense	10,000	
	Cash		95,000

- (b) Entries for Patrick Wise are as follows:

12/31/04	Rent Expense	275,000	
	Cash		275,000

- (c) The real estate broker's fee should be amortized equally over the 10-year period. As a result, real estate fee expense of \$3,000 ($\$30,000 \div 10$) should be reported in each period.

EXERCISE 21-13 (15-20 minutes)

(a)	Annual rental revenue	\$210,000
	Less maintenance and other executory costs	(25,000)
	Depreciation ($\$900,000 \div 8$)	<u>(112,500)</u>
	Income before income tax	<u>\$ 72,500</u>

EXERCISE 21-13 (Continued)

(b) Rent expense \$210,000

Note: Both the rent security deposit and the last month's rent prepayment should be reported as a noncurrent asset.

EXERCISE 21-14 (15-20 minutes)

(a) **CHUCK RUDY COMPANY**
Rent Expense
For the Year Ended December 31, 2004

Monthly rental	\$ 19,500
Lease period in 2004 (March–December)	<u>X 10 months</u>
	<u>\$ 195,000</u>

(b) **BARBARA BRENT INC.**
Income or Loss from Lease before Taxes
For the Year Ended December 31, 2004

Rental revenue (\$19,500 X 10 months)		\$195,000
Less expense		
Depreciation	\$125,000*	
Commission	<u>6,250**</u>	<u>131,250</u>
Income from lease before taxes		<u>\$ 63,750</u>

*\$1,500,000 cost ÷ 10 years = \$150,000/year
\$150,000 X 10/12 = \$125,000

****(Note to instructor:** Under principles of accrual accounting, the commission should be amortized over the life of the lease: \$30,000 ÷ 4 years = \$7,500 X 10/12 = \$6,250.)

***EXERCISE 21-15 (20-30 minutes)**

Elmer's Restaurants (Lessee)*

1/1/04	Cash.....	680,000.00	
	Computer.....		600,000.00
	Unearned Profit on Sale- Leaseback		80,000.00
	Leased Computer Under Capital Leases	680,000.00	
	Lease Liability..... (\$110,666.81 X 6.14457)		680,000.00
	Throughout 2004		
	Executory Costs.....	9,000.00	
	Accounts Payable or Cash.....		9,000.00
12/31/04	Unearned Profit on Sale- Leaseback.....	8,000.00	
	Depreciation Expense**		8,000.00
	(\$80,000 ÷ 10)		
12/31/04	Depreciation Expense.....	68,000.00	
	Accumulated Depreciation..... (\$680,000 ÷ 10)		68,000.00
	Interest Expense.....	68,000.00	
	Lease Liability.....	42,666.81	
	Cash.....		110,666.81

***Lease should be treated as a capital lease because present value of minimum lease payments equals the fair value of the computer. Also, the lease term is greater than 75% of the economic life of the asset, and title transfers at the end of the lease.**

****The credit could also be to a revenue account.**

Note to instructor:

- 1. The present value of an ordinary annuity at 10% for 10 periods should be used to capitalize the asset. In this case, Elmer's Restaurants would use the implicit rate of the lessor because it is lower than its own incremental borrowing rate and known to Elmer's Restaurants.**

***EXERCISE 21-15 (Continued)**

2. The unearned profit on the sale-leaseback should be amortized on the same basis that the asset is being depreciated.

Partial Lease Amortization Schedule

Date	Annual Lease Payment	Interest (10%)	Amortization	Balance
1/1/04				\$680,000.00
12/31/04	\$110,666.81	\$68,000.00	\$42,666.81	637,333.19
Liquidity Finance Co. (Lessor)*				
1/1/04	Computer.....		680,000.00	
	Cash.....			680,000.00
	Lease Receivable.....		680,000.00	
	Computer.....			680,000.00
12/31/04	Cash.....		110,666.81	
	Lease Receivable.....			42,666.81
	Interest Revenue.....			68,000.00

*Lease should be treated as a direct financing lease because the present value of the minimum lease payments equals the fair value of the computer, and (1) collectibility of the payments is reasonably assured, (2) no important uncertainties surround the costs yet to be incurred by the lessor, and (3) the cost to the lessor equals the fair market value of the asset at the inception of the lease.

***EXERCISE 21-16 (20-30 minutes)**

- (a) Sale-leaseback arrangements are treated as though two transactions were a single financing transaction if the lease qualifies as a capital lease. Any gain or loss on the sale is deferred and amortized over the lease term (if possession reverts to the lessor) or the economic life (if ownership transfers to the lessee). In this case, the lease qualifies as a capital lease because the lease term (10 years) is 83% of the remaining economic life of the leased property (12 years). Therefore, at 12/31/05, all of the gain of \$120,000 (\$520,000 – \$400,000) would be deferred and amortized over 10 years. Since the sale took place on 12/31/05, there is no amortization for 2005.

***EXERCISE 21-16 (Continued)**

- (b) A sale-leaseback is usually treated as a single financing transaction in which any profit on the sale is deferred and amortized by the seller. However, FASB 28 amends this general rule when either only a minor part of the remaining use of the property is retained, or more than a minor part but less than substantially all of the remaining use of property is retained. The first situation occurs when the present value of the lease payments is 10% or less of the fair market value of the sale-leaseback property. The second situation occurs when the leaseback is more than minor but does not meet the criteria of a capital lease for all the property sold. (The second situation was not discussed in the textbook.) This problem is an example of the first situation because the present value of the lease payments (\$35,000) is less than 10% of the fair value of the asset (\$480,000). Under these circumstances the sale and the leaseback are accounted for as separate transactions. Therefore, the full gain (\$480,000 – \$420,000, or \$60,000) is recognized.
- (c) The profit on the sale of \$121,000 should be deferred and amortized over the lease term. Since the leased asset is being depreciated using the sum-of-the-years' depreciation method, the deferred gain should also be reported in the same manner. Therefore, in the first year, \$22,000 ($10/55 \times \$121,000$) of the gain would be recognized.
- (d) In this case, Dick Sondgeroth would report a loss of \$87,300 (\$300,000 – \$212,700) for the difference between the book value and lower fair value. The profession requires that when the fair value of the asset is less than the book value (carrying amount), a loss must be recognized immediately. In addition, rent expense of \$72,000 should be reported.

TIME AND PURPOSE OF PROBLEMS

Problem 21-1 (Time 20-25 minutes)

Purpose—to develop an understanding of the accounting principles used in a sales-type lease for both the lessee and the lessor. The student is required to discuss the nature of lease and make journal entries for both sides of the transaction.

Problem 21-2 (Time 20-30 minutes)

Purpose—to develop an understanding of the accounting treatment for operating leases. The student is required to identify the type of lease involved, explain the respective reasons for their classification, and discuss the accounting treatment that should be applied for both the lessee and lessor. The student is also asked to prepare the journal entries to reflect the first year of this lease contract for both the lessee and lessor and to discuss the disclosures required of the lessee and lessor.

Problem 21-3 (Time 35-45 minutes)

Purpose—to develop an understanding of the accounting procedures involved in a sales-type leasing arrangement. The student is required to discuss the nature of this lease transaction from the viewpoint of both the lessee and lessor. The student is also requested to prepare the journal entries to record the lease for both the lessee and lessor plus illustrate the items and amounts that would be reported on the balance sheet at the end of the first year for the lessee and the lessor.

Problem 21-4 (Time 30-40 minutes)

Purpose—to provide an understanding of how lease information is reported on the balance sheet and income statement for three different years in regard to the lessee. In addition, the year-end month is changed in order to help provide an understanding of the complications involved with partial periods.

Problem 21-5 (Time 30-40 minutes)

Purpose—to provide an understanding of how lease information is reported on the balance sheet and income statement for three different years in regard to the lessor. In addition, the year-end month is changed in order to help provide an understanding of the complications involved with partial periods.

Problem 21-6 (Time 25-35 minutes)

Purpose—to provide an understanding of the journal entries to be recorded by the lessee given a guaranteed residual value. Journal entries for two periods are required.

Problem 21-7 (Time 25-30 minutes)

Purpose—to develop an understanding of the accounting for a capital lease by the lessee in an annuity due arrangement. The student is required to prepare the lease amortization schedule for the entire term of the lease and all the necessary journal entries for the lease through the first two lease payments. The student is also asked to indicate the amounts that would be reported on the lessee's balance sheet.

Problem 21-8 (Time 20-30 minutes)

Purpose—to develop an understanding of the accounting by the lessee for a capital lease. The student is required to explain the relationship between the capitalized amount of leased equipment and the leasing arrangement. The student is asked to prepare the lessee's journal entries at the date of inception, for depreciation of the leased asset, and for the first lease payment, as well as to indicate the amounts that should be reported on the lessee's balance sheet.

Time and Purpose of Problems (Continued)

Problem 21-9 (Time 20-30 minutes)

Purpose—to develop an understanding of the accounting for a capital lease by a lessee in an annuity due arrangement. The student is required to prepare all the journal entries, with supportive computations, which the lessee would have made to record the lease for the first period of the lease.

Problem 21-10 (Time 30-40 minutes)

Purpose—to develop an understanding of the accounting treatment accorded a sales-type lease involving an unguaranteed residual value. The student is required to discuss the nature of the lease with regard to the lessor and to compute the lease receivable, the sales price, and the cost of sales. The student is also required to construct a 10-year lease amortization schedule for the leasing arrangement, and to prepare the lessor's journal entries for the first year of the lease contract.

Problem 21-11 (Time 30-40 minutes)

Purpose—to develop an understanding of a capital lease with an unguaranteed residual value. The student explains why it is a capital lease and computes the amount of the initial obligation. The student prepares a 10-year amortization schedule and all of the lessee's journal entries for the first year.

Problem 21-12 (Time 40-50 minutes)

Purpose—to develop an understanding of the accounting for capital leases where the lease payments for the first half of the lease term differ from those for the latter half. The student is required to compute for the lessee the discounted present value of the leased property and the related obligation at the lease's inception date. The student is also asked to prepare journal entries for the lessee.

Problem 21-13 (Time 30-40 minutes)

Purpose—to develop an understanding of a sales-type lease with a guaranteed residual value. The student discusses the classification of the lease and computes the lease receivable at inception of lease, sales price, and cost of sales. The student prepares a 10-year amortization schedule and all of the lessor's journal entries for the first year.

Problem 21-14 (Time 30-40 minutes)

Purpose—to develop an understanding of a capital lease with a guaranteed residual value. The student explains why it is a capital lease and computes the amount of the initial obligation. The student prepares a 10-year amortization schedule and all of the lessee's journal entries for the first year.

Problem 21-15 (Time 30-40 minutes)

Purpose—to develop a memo to your audit supervisor to discuss: (a) why you inspected the lease agreement, (b) what you determined about the lease, and (c) how you advised your client to account for the lease. As part of the discussion you are required to make the journal entry necessary to record the lease property.

Problem 21-16 (Time 30-40 minutes)

Purpose—to develop an understanding of how residual values affect the accounting for the lessee and the lessor. The student must understand both the accounting for a guaranteed and unguaranteed residual value and determine how large the residual value must be to have operating lease treatment.

SOLUTIONS TO PROBLEMS

PROBLEM 21-1

- (a) This is a capital lease to Potter since the lease term is greater than 75% of the economic life of the leased asset. The lease term is 78% (7 ÷ 9) of the asset's economic life.

This is a capital lease to Stine because collectibility of the lease payments is reasonably predictable, there are no important uncertainties surrounding the costs yet to be incurred by the lessor, and the lease term is greater than 75% of the asset's economic life. Since the fair value (\$560,000) of the equipment exceeds the lessor's cost (\$420,000), the lease is a sales-type lease.

- (b) Calculation of annual rental payment:

$$\frac{\$560,000 - (\$80,000 \times .51316)^*}{5.35526^{**}} = \underline{\underline{\$96,904}}$$

*Present value of \$1 at 10% for 7 periods.

**Present value of an annuity due at 10% for 7 periods.

- (c) Computation of present value of minimum lease payments:

PV of annual payments:	\$96,904 X 5.23054* =	\$506,860
PV of guaranteed residual value:	\$80,000 X .48166** =	<u>38,533</u>
		<u>\$545,393</u>

*Present value of an annuity due at 11% for 7 periods.

**Present value of \$1 at 11% for 7 periods.

(d)	1/1/04	Leased Machinery Under Capital	
		Leases.....	545,393
		Lease Liability	545,393
		Lease Liability	96,904
		Cash	96,904

PROBLEM 21-1 (Continued)

12/31/04	Depreciation Expense	66,485	
	Accumulated Depreciation		66,485
	(\$545,393 – \$80,000) ÷ 7		
	Interest Expense	49,334	
	Interest Payable		49,334
	(\$545,393 – \$96,904) X .11		
1/1/05	Lease Liability	47,570	
	Interest Payable	49,334	
	Cash		96,904
12/31/05	Depreciation Expense	66,485	
	Accumulated Depreciation		66,485
	Interest Expense	44,101	
	Interest Payable		44,101
	[(\$545,393 – \$96,904 – \$47,570) X .11]		
(e) 1/1/04	Lease Receivable	560,000	
	Cost of Goods Sold	420,000	
	Sales		560,000
	Inventory		420,000
	Cash	96,904	
	Lease Receivable		96,904
12/31/04	Interest Receivable	46,310	
	Interest Revenue		46,310
	[(\$560,000 – \$96,904) X .10]		
1/1/05	Cash	96,904	
	Lease Receivable		96,904
12/31/05	Interest Receivable	41,250	
	Interest Revenue		41,250
	[(\$560,000 – \$96,904 – \$50,594) X .10]		

PROBLEM 21-2

(a) The lease is an operating lease to the lessee and lessor because:

1. it does not transfer ownership,
2. it does not contain a bargain purchase option,
3. it does not cover at least 75% of the estimated economic life of the crane, and
4. the present value of the lease payments is not at least 90% of the fair value of the leased crane.

**\$22,000 Annual Lease Payments X PV of annuity due at 9%
for 5 years**

**\$22,000 X 4.23972 = \$93,273.84, which is less than \$144,000.00
(90% X \$160,000.00)**

At least one of the four criteria would have had to be satisfied for the lease to be classified as other than an operating lease.

(b) **Lessee's Entries**

Rent Expense	22,000	
Cash		22,000

Lessor's Entries

Insurance Expense	500	
Tax Expense	2,000	
Maintenance Expense	650	
Cash or Accounts Payable		3,150

Depreciation Expense	12,500	
Accumulated Depreciation—Crane.....		12,500
[(\$160,000 – \$10,000) ÷ 12]		

Cash	22,000	
Rental Revenue		22,000

PROBLEM 21-2 (Continued)

- (c) **M. K. Gumowski as lessee must disclose in the income statement the \$22,000 of rent expense and in the notes the future minimum rental payments required as of January 1 (in total, \$88,000) and for each of the succeeding four years: 2006—\$22,000; 2007—\$22,000; 2008—\$22,000; 2009—\$22,000. Nothing relative to this lease would appear on the lessee's balance sheet.**

Synergetics as lessor must disclose in the balance sheet or in the notes the cost of the leased crane (\$160,000) and the accumulated depreciation of \$12,500 separately from assets not leased. Additionally, Synergetics must disclose in the notes the minimum future rentals as a total of \$88,000, and for each of the succeeding four years: 2006—\$22,000; 2007—\$22,000; 2008—\$22,000; 2009—\$22,000.

PROBLEM 21-3

- (a) The lease should be treated as a capital lease by Cascade Industries requiring the lessee to capitalize the leased asset. The lease qualifies for capital lease accounting by the lessee because: (1) title to the engines transfers to the lessee, (2) the lease term is equal to the estimated life of the asset, and (3) the present value of the minimum lease payments exceeds 90% of the fair value of the leased engines. The transaction represents a purchase financed by installment payments over a 10-year period.

For Barbara Hardy Inc. the transaction is a sales-type lease because a manufacturer's profit accrues to Hardy. This lease arrangement also represents the manufacturer's financing the transaction over a period of 10 years.

Present Value of Lease Payments

\$620,956 X 7.24689*	<u>\$4,500,000</u>
-----------------------------	---------------------------

*Present value of an annuity due at 8% for 10 years.

Dealer Profit

Sales (present value of lease payments)	\$4,500,000
Less cost of engines	<u>3,900,000</u>
Profit on sale	<u>\$ 600,000</u>

(b)	Leased Engines Under Capital Leases.....	4,500,000	
	Lease Liability		4,500,000
(c)	Lease Receivable	4,500,000	
	Cost of Goods Sold	3,900,000	
	Sales.....		4,500,000
	Inventory.....		3,900,000
(d)	<u>Lessee</u> (January 1, 2005)		
	Lease Liability	620,956	
	Cash		620,956
	<u>Lessor</u> (January 1, 2005)		
	Cash	620,956	
	Lease Receivable.....		620,956

PROBLEM 21-3 (Continued)

(e) **CASCADE INDUSTRIES**
Barbara Hardy Inc.
Lease Amortization Schedule

Date	Annual Lease Receipt/ Payment	Interest on Receivable/ Liability at 8%	Reduction in Receivable/ Liability	Lease Receivable/ Liability
1/1/05				4,500,000
1/1/05	620,956		620,956	3,879,044
1/1/06	620,956	310,324	310,632	3,568,412
1/1/07	620,956	285,473	335,483	3,232,929

Lessee (December 31, 2005)

Interest Expense	310,324	
Interest Payable		310,324

Lessor (December 31, 2005)

Interest Receivable	310,324	
Interest Revenue		310,324

(f) **CASCADE INDUSTRIES**
Balance Sheet
December 31, 2005

Property, plant, and equipment:		Current liabilities:	
Leased property under capital leases	\$4,500,000	Interest payable	\$ 310,324
		Lease liability	310,632**
Less accumulated depreciation	<u>450,000*</u>	Long-term liabilities:	
	<u>\$4,050,000</u>	Lease liability	3,568,412***
		(See schedule)	

*\$4,500,000 ÷ 10 = \$450,000

**(\$620,956 – \$310,324)

***No portion of this amount paid within the next year.

Note: The title Obligations under capital leases is often used instead of lease liability.

PROBLEM 21-3 (Continued)

**BARBARA HARDY INC.
Balance Sheet
December 31, 2002**

Assets	
Current assets:	
Interest receivable	\$ 310,324
Lease receivable	310,632
 Noncurrent assets:	
Lease receivable (See schedule)	\$3,568,412*

Note: The title Net investment in sales-type leases is often shown instead of lease receivable.

PROBLEM 21-4

(a)	1.	\$15,846 \$5,500 \$33,376	Interest expense (See amortization schedule) Lease executory expense Depreciation expense ($\$200,255 \div 6 = \$33,376$)
	2.	\$25,954 \$15,846 \$132,501	Current liabilities: Lease liability Interest payable Long-term liabilities: Lease liability Property, plant, and equipment: Leased computer under capital lease Accumulated depreciation
	3.	\$13,250 \$5,500 \$33,376	Interest expense (See amortization schedule) Lease executory expense Depreciation expense ($\$200,255 \div 6 = \$33,376$)
	4.	\$28,550 \$13,250 \$103,951	Current liabilities: Lease liability Interest payable Long-term liabilities: Lease liability Property, plant, and equipment: Leased computer under capital lease Accumulated depreciation
(b)	1.	\$3,962 \$1,375 \$8,344	Interest expense ($\$15,846 \times 3/12 = \$3,962$) Lease executory expense ($\$5,500 \times 3/12 = \$1,375$) Depreciation expense ($\$200,255 \div 6 = \$33,376$; $\$33,376 \times 3/12 = \$8,344$)

PROBLEM 21-4 (Continued)

2.		Current liabilities:
	\$25,954	Lease liability
	\$3,962	Interest payable
		Long-term liabilities:
	\$132,501	Lease liability
		Property, plant, and equipment:
	\$200,255	Leased computer under capital lease
	(\$8,344)	Accumulated depreciation
		Current assets:
	\$4,125	Prepaid lease executory costs
		(\$5,500 X 9/12 = \$4,125)
3.	\$15,197	Interest expense
		[((\$15,846 – \$3,962) + (\$13,250 X 3/12) =
		\$11,884 + \$3,313 = \$15,197]
	\$5,500	Lease executory expense
	\$33,376	Depreciation expense (\$200,255 ÷ 6 = \$33,376)
4.		Current liabilities:
	\$28,550	Lease liability
	\$3,313	Interest payable (\$13,250 X 3/12 = \$3,313)
		Long-term liabilities:
	\$103,951	Lease liability
		Property, plant, and equipment:
	\$200,255	Leased computer under capital lease
	(\$41,720)	Accumulated depreciation
		(\$8,344 + \$33,376 = \$41,720)
		Current assets:
	\$4,125	Prepaid lease executory costs
		(\$5,500 X 9/12 = \$4,125)

PROBLEM 21-5

(a) 1.	\$15,846	Interest revenue	
2.	\$41,800	Current assets:	
		Lease receivable	\$25,954 and interest receivable \$15,846
	\$132,501	Noncurrent assets:	
		Lease receivable (net investment in lease)	
3.	\$13,250	Interest revenue	
4.	\$41,800	Current assets:	
		Lease receivable	\$28,550 and interest receivable \$13,250
	\$103,951	Noncurrent assets:	
		Lease receivable (net investment in lease)	
(b) 1.	\$3,962	Interest revenue	$(\$15,846 \times 3/12 = \$3,962)$
2.	\$29,916	Current assets:	
		Lease receivable	\$25,954 and interest receivable \$3,962
	\$132,501	Noncurrent assets:	
		Lease receivable	
3.	\$15,197	Interest revenue	$[(\$15,846 - \$3,962) + (\$13,250 \times 3/12) =$ $\$11,884 + \$3,313 = \$15,197]$
4.	\$31,863	Current assets:	
		Lease receivable	\$28,550
		Interest receivable	\$3,313
	\$103,951	Noncurrent assets:	
		Lease receivable	

PROBLEM 21-6

Note: This lease is a capital lease to the lessee because the lease term (six years) exceeds 75% of the remaining economic life of the asset (six years). Also, the present value of the minimum lease payments exceeds 90% of the fair value of the asset.

\$ 81,365	Annual rental payment
X 4.60478	PV of an annuity due of 1 for n = 6, i = 12%
<u>\$ 374,668</u>	PV of periodic rental payments
\$ 50,000	Guaranteed residual value
X .50663	PV of 1 for n = 6, i = 12%
<u>\$ 25,332</u>	PV of guaranteed residual value
\$ 374,668	PV of periodic rental payments
+ 25,332	PV of guaranteed residual value
<u>\$ 400,000</u>	PV of minimum lease payments

(a) TOM ZARLE COMPANY (Lessee)
Lease Amortization Schedule

Date	Annual Lease Payment Plus GRV	Interest (12%) on Liability	Reduction of Lease Liability	Lease Liability
1/1/04				\$400,000
1/1/04	\$ 81,365		\$ 81,365	318,635
1/1/05	81,365	\$ 38,236	43,129	275,506
1/1/06	81,365	33,061	48,304	227,202
1/1/07	81,365	27,264	54,101	173,101
1/1/08	81,365	20,772	60,593	112,508
1/1/09	81,365	13,501	67,864	44,644
12/31/09	<u>50,000</u>	<u>5,356*</u>	<u>44,644</u>	0
	<u>\$538,190</u>	<u>\$138,190</u>	<u>\$400,000</u>	

*Rounding error is \$1.

PROBLEM 21-6 (Continued)

(b) January 1, 2004		
Leased Equipment Under Capital Leases	400,000	
Lease Liability		400,000
Lease Liability	81,365	
Cash		81,365
During 2004		
Lease Executory Expense	4,000	
Cash		4,000
December 31, 2004		
Interest Expense	38,236	
Interest Payable		38,236
Depreciation Expense	58,333	
Accumulated Depreciation—Capital Leases ($[\$400,000 - \$50,000] \div 6$).....		58,333
January 1, 2005		
Interest Payable	38,236	
Interest Expense		38,236
Interest Expense	38,236	
Lease Liability	43,129	
Cash		81,365
During 2005		
Lease Executory Expense	4,000	
Cash		4,000
December 31, 2005		
Interest Expense	33,061	
Interest Payable		33,061
Depreciation Expense	58,333	
Accumulated Depreciation—Capital Leases.....		58,333

PROBLEM 21-6 (Continued)

(Note to instructor: The guaranteed residual value was subtracted for purposes of determining the depreciable base. The reason is that at the end of the lease term, hopefully, this balance can offset the remaining lease obligation balance. To depreciate the leased asset to zero might lead to a large gain in the final years if the residual value has a value at least equal to its guaranteed amount.)

PROBLEM 21-7

(a) December 31, 2004		
Leased Equipment Under Capital Leases	129,195	
Lease Liability		129,195
(To record leased asset and related obligations at the present value of 5 future annual payments of \$32,000 discounted at 12%, $\$32,000 \times 4.03735$)		
 December 31, 2004		
Lease Liability	32,000	
Cash		32,000
(To record the first rental payment)		
 (b) December 31, 2005		
Depreciation Expense	18,456	
Accumulated Depreciation—Capital Leases		18,456
(To record depreciation of the leased asset based upon a cost to Brennan of \$129,195 and a life of 7 years)		
 December 31, 2005		
Interest Expense	11,663	
Lease Liability	20,337	
Cash		32,000
(To record annual payment on lease obligation of which \$11,663 represents interest at 12% on the unpaid principal of \$97,195)		

PROBLEM 21-7 (Continued)

**BRENNAN STEEL COMPANY (Lessee)
Lease Amortization Schedule
(Annuity Due Basis)**

Date	Annual Lease Payment	Interest (12%) on Liability	Reduction of Lease Liability	Lease Liability
12/31/04	—	—	—	\$129,195
12/31/04	\$32,000	\$ 0	\$32,000	97,195
12/31/05	32,000	11,663	20,337	76,858
12/31/06	32,000	9,223	22,777	54,081
12/31/07	32,000	6,490	25,510	28,571
12/31/08	32,000	3,429	28,571	0

(c) December 31, 2006

Interest Expense	9,223	
Lease Liability	22,777	
Cash		32,000
(To record annual payment on lease obligation of which \$9,223 represents interest at 12% on the unpaid principal of \$76,858)		

December 31, 2006

Depreciation Expense	18,456	
Accumulated Depreciation—Capital Leases		18,456
(To record annual depreciation on assets leased)		

PROBLEM 21-7 (Continued)

**(d) BRENNAN STEEL COMPANY
Balance Sheet
December 31, 2006**

Property, plant, and equipment:		Current liabilities:	
Leased equipment under capital leases	\$129,195	Lease liability	\$25,510
Less: Accumulated depreciation	<u>36,912</u>	Long-term: Lease liability	
	92,283		28,571

PROBLEM 21-8

(a) The \$370,000 is the present value of the five annual lease payments of \$94,732 less the \$6,000 attributable to the payment for taxes, insurance, and maintenance. In other words, it is the present value of five \$88,732 payments to be made at the beginning of each year discounted at 10%, the lower of the implicit or incremental rates (since the lessee knows the implicit rate). The cost of taxes, insurance, and maintenance represents periodic services to be performed in the future by the lessor and should not be capitalized. The amount capitalized represents the completed service element by the lessor company in that it has made the property available; the taxes, insurance, and maintenance represent the uncompleted, unrendered services of the lessor.

(b)	Leased Equipment Under Capital Leases	370,000	
	Lease Liability		370,000
	(\$88,732 X Annuity Due Factor for 5 years at 10% = \$88,732 X 4.16986 = \$370,000)		
	Taxes, Insurance, and Maintenance Expense.....	6,000	
	Lease Liability	88,732	
	Cash		94,732
(c)	Depreciation Expense	148,000	
	Accumulated Depreciation—Capital Leases		148,000
	(\$370,000 X 40% = \$148,000)		
(d)	Interest Expense	28,127	
	Interest Payable		28,127
(e)	Taxes, Insurance, and Maintenance Expense.....	6,000	
	Interest Payable	28,127	
	Lease Liability	60,605	
	Cash		94,732

PROBLEM 21-8 (Continued)

**CHARLIE DOSS COMPANY (Lessee)
Lease Amortization Schedule**

Date	Annual Lease Payment	Interest (10%) on Liability	Reduction of Lease Liability	Lease Liability
1/1/05				\$370,000
1/1/05	\$88,732		\$88,732	281,268
1/1/06	88,732	\$28,127	60,605	220,663
1/1/07	88,732	22,066	66,666	153,997

(f)

**CHARLIE DOSS COMPANY
Balance Sheet
December 31, 2005**

<u>Assets</u>		<u>Liabilities</u>	
Property, plant, and equipment:		Current:	
Leased property under capital leases	\$370,000	Interest payable	\$ 28,127
Less: Accumulated depreciation	<u>148,000</u>	Lease liability	60,605*
	<u>\$222,000</u>	Noncurrent:	
		Lease liability	220,663

*See Lease Amortization Schedule in part (e) above.

PROBLEM 21-9

Entries on August 1, 2001:

(1)	Leased Equipment Under Capital Leases	3,537,354	
	Lease Liability		3,537,354

Explanation and computation: This is a capital lease because the lease term exceeds 75% of the asset's useful life. Additionally, the option to purchase at 75% of fair value may be viewed as a bargain purchase option.

The leased computer and the related obligation are recorded at the present value of the minimum lease payments, excluding the maintenance charge, as follows: $(\$50,000 - \$4,000) \times 76.899 = \$3,537,354$.

(2)	Computer Maintenance Expense	4,000	
	Lease Liability	46,000	
	Cash		50,000

Explanation: This entry is to record the August 1, 2004, first payment under the lease agreement. No interest is recognized on August 1 because the agreement began on that date. Cash payment includes \$4,000 of maintenance cost.

Entries on August 31, 2004:

(1)	Interest Expense	34,914	
	Interest Payable		34,914

Explanation and computation: Interest accrued on the unpaid balance of the lease obligations from August 1 to August 31, 2004, is computed as follows: $(\$3,537,354 - \$46,000) \times .01 = \$34,914$.

(2)	Depreciation Expense	19,652	
	Accumulated Depreciation—Capital Leases		19,652

PROBLEM 21-9 (Continued)

Explanation and computation: Depreciation is recorded for one month of the use of computer using the estimated useful life of the equipment instead of the lease term due to the bargain purchase option: $\$3,537,354 \times 1/15 \times 1/12 = \$19,652$.

(Note to instructor: Because the amount of the bargain purchase option is not known at the date of the lease agreement, no amount is capitalized for this item.)

PROBLEM 21-10

(a) The lease is a sales-type lease because: (1) the lease term exceeds 75% of the asset's estimated economic life, (2) collectibility of payments is reasonably assured and there are no further costs to be incurred, and (3) Thomas Hanson Company realized an element of profit aside from the financing charge.

(1) Present value of an annuity due of \$1 for 10 periods discounted at 10%	6.75902
Annual lease payment	<u>\$ 30,000</u>
Present value of the 10 rental payments	202,771
Add present value of estimated residual value of \$20,000 in 10 years at 10% (\$20,000 X .38554)	<u>7,711</u>
Lease receivable at inception	<u><u>\$210,482</u></u>

(2) Sales price is \$202,771 (the present value of the 10 annual lease payments); or, the initial PV of \$210,482 minus the PV of the unguaranteed residual value of \$7,711.

(3) Cost of sales is \$127,289 (the \$135,000 cost of the asset less the present value of the unguaranteed residual value).

PROBLEM 21-10 (Continued)

**(b) THOMAS HANSON COMPANY (Lessor)
Lease Amortization Schedule
Annuity Due Basis, Unguaranteed Residual Value**

Beginning of Year	Annual Lease Payment Plus Residual Value	Interest (10%) on Lease Receivable	Recovery of Lease Receivable	Lease Receivable
	(a)	(b)	(c)	(d)
Initial PV	—	—	—	\$210,482
1	\$ 30,000	—	\$ 30,000	180,482
2	30,000	\$ 18,048	11,952	168,530
3	30,000	16,853	13,147	155,383
4	30,000	15,538	14,462	140,921
5	30,000	14,092	15,908	125,013
6	30,000	12,501	17,499	107,514
7	30,000	10,751	19,249	88,265
8	30,000	8,827	21,173	67,092
9	30,000	6,709	23,291	43,801
10	30,000	4,380	25,620	18,181
End of 10	<u>20,000</u>	<u>1,819*</u>	<u>18,181</u>	0
	<u>\$320,000</u>	<u>\$109,518</u>	<u>\$210,482</u>	

*Rounding error is \$1.00.

- (a) Annual lease payment required by lease contract.
- (b) Preceding balance of (d) X 10%, except beginning of first year of lease term.
- (c) (a) minus (b).
- (d) Preceding balance minus (c).

(c)

Beginning of the Year		
Lease Receivable.....	210,482	
Cost of Sales	127,289	
Sales		202,771
Computer Inventory.....		135,000
(To record the sale and the cost of sales in the lease transaction)		
Selling Expense	4,000	
Cash		4,000
(To record payment of the initial direct costs relating to the lease)		

PROBLEM 21-10 (Continued)

Cash	30,000	
 Lease Receivable		30,000
 (To record receipt of the first lease payment)		
End of the Year		
Interest Receivable	18,048	
 Interest Revenue		18,048
 (To record interest earned during the first year of the lease)		

PROBLEM 21-11

- (a) The lease is a capital lease because: (1) the lease term exceeds 75% of the asset's economic life and (2) the present value of the minimum lease payments exceeds 90% of the fair value of the leased asset.

Initial Obligation Under Capital Leases:

Minimum lease payments (\$30,000) X PV of an
annuity due for 10 periods at 10% (6.75902) **\$202,771**

- (b) **FLYPAPER AIRLINES (Lessee)
Lease Amortization Schedule
(Annuity due basis and URV)**

Beginning of Year	Annual Lease Payment	Interest (10%) on Lease Liability	Reduction of Lease Liability	Lease Liability
	(a)	(b)	(c)	(d)
Initial PV	—	—	—	\$202,771
1	\$ 30,000	—	\$ 30,000	172,771
2	30,000	\$17,277	12,723	160,048
3	30,000	16,005	13,995	146,053
4	30,000	14,605	15,395	130,658
5	30,000	13,066	16,934	113,724
6	30,000	11,372	18,628	95,096
7	30,000	9,510	20,490	74,606
8	30,000	7,461	22,539	52,067
9	30,000	5,207	24,793	27,274
10	<u>30,000</u>	<u>2,726*</u>	<u>27,274</u>	0
	<u>\$300,000</u>	<u>\$97,229</u>	<u>\$202,771</u>	

*Rounding error is \$1.

- (a) Annual lease payment required by lease contract.
 (b) Preceding balance of (d) X 10%, except beginning of first year of lease term.
 (c) (a) minus (b).
 (d) Preceding balance minus (c).

PROBLEM 21-11 (Continued)

(c) Lessee's journal entries:

Beginning of the Year		
Leased Equipment Under Capital Leases	202,771	
Lease Liability		202,771
(To record the lease of computer equipment using capital lease method)		
Lease Liability	30,000	
Cash		30,000
(To record the first rental payment)		
End of the Year		
Interest Expense	17,277	
Interest Payable		17,277
(To record accrual of annual interest on lease obligation)		
Depreciation Expense	20,277	
Accumulated Depreciation—Leased Assets		20,277
(To record depreciation expense for first year [$\\$202,771 \div 10$])		

PROBLEM 21-12

(a) **JUDY YIN TRUCKING COMPANY**
Schedule to Compute the Discounted Present Value of
Terminal Facilities and the Related Obligation
January 1, 2003

Present value of first 10 payments:		
Immediate payment	\$ 900,000	
Present value of an ordinary annuity for 9 years at 6% (\$900,000 X 6.801692)	<u>6,121,523</u>	\$7,021,523
 Present value of last 10 payments:		
First payment of \$320,000	320,000	
Present value of an ordinary annuity for 9 years at 6% (\$320,000 X 6.801692)	<u>2,176,541</u>	
Present value of last 10 payments at January 1, 2013	<u>2,496,541</u>	
Discount to January 1, 2003 (\$2,496,541 X .558395)		<u>1,394,056</u>
Discounted present value of terminal facilities and related obligation		<u>\$8,415,579</u>

(Note to instructor: The student can compute the \$7,021,523 by using the present value of an annuity due for 10 periods at 6% (7.80169 X \$900,000 = \$7,021,521). For the last ten periods, the present value of an annuity due for 20 periods less the present value of an annuity due for 10 periods can be used as follows: $([12.15812 - 7.80169] \times \$320,000 = \$1,394,056)$.

(b) **JUDY YIN TRUCKING COMPANY**
Journal Entries
2005

(1)	(1/1/05)		
<hr/>			
	Interest Payable	423,000	
	Lease Liability	477,000	
	Property Taxes	125,000	
	Property Insurance	23,000	
	Cash		1,048,000

PROBLEM 21-12 (Continued)

**Partial Amortization Schedule
(Annuity Due Basis)**

Date	Lease Payment	Executory Costs	Interest (6%) on Lease Liability	Reduction of Lease Liability	Lease Liability
1/1/03	—	—	—	—	\$8,400,000
1/1/03	\$1,048,000	\$148,000	\$ 0	\$900,000	7,500,000
1/1/04	1,048,000	148,000	450,000	450,000	7,050,000
1/1/05	1,048,000	148,000	423,000	477,000	6,573,000
1/1/06	1,048,000	148,000	394,380	505,620	6,067,380

(2) (12/31/05)

Depreciation Expense—Capital Leases	210,000	
Accumulated Depreciation—Capital Leases		210,000
(To record annual depreciation expense on leased assets) (\$8,400,000 ÷ 40)		

Note: The leased asset is depreciated over its economic life because a bargain purchase is available at the end of the lease term.

(3) (12/31/05)

Interest Expense	394,380	
Interest Payable		394,380
(To record interest accrual at 6% on outstanding debt of \$6,573,000)		

PROBLEM 21-13

- (a) The lease is a sales-type lease because: (1) the lease term is for 83% ($10 \div 12$) of the economic life of the leased asset, (2) the present value of the minimum lease payments exceeds 90% of the fair market value of the leased property, (3) the collectibility of the lease payments is reasonably predictable and no uncertainties exist as to unreimbursable costs yet to be incurred by the lessor, and (4) the lease provides the lessor with manufacturer's profit in addition to interest revenue.

1. Lease Receivable:

Present value of annual payments of \$50,000 made at the beginning of each period for 10 years, \$50,000 X 6.75902 (PV of an annuity due @ 10%)	\$337,951
Present value of guaranteed residual value, \$15,000 X .38554	<u>5,783</u>
Present value of minimum lease payments	<u>\$343,734</u>

2. Sales price is the same as the present value of minimum lease payments	<u>\$343,734</u>
3. Cost of sales is the cost of manufacturing the x-ray machine	<u>\$210,000</u>

PROBLEM 21-13 (Continued)

**(b) LAURA JENNINGS INC. (Lessor)
Lease Amortization Schedule
(Annuity due basis, guaranteed residual value)**

Beginning of Year	Annual Lease Payment Plus Residual Value	Interest (10%) on Lease Receivable	Recovery of Lease Receivable	Lease Receivable
	(a)	(b)	(c)	(d)
Initial PV	—	—	—	\$343,734
1	\$ 50,000	—	\$ 50,000	293,734
2	50,000	\$ 29,373	20,627	273,107
3	50,000	27,311	22,689	250,418
4	50,000	25,042	24,958	225,460
5	50,000	22,546	27,454	198,006
6	50,000	19,801	30,199	167,807
7	50,000	16,781	33,219	134,588
8	50,000	13,459	36,541	98,047
9	50,000	9,805	40,195	57,852
10	50,000	5,785	44,215	13,637
End of 10	<u>15,000</u>	<u>1,363*</u>	<u>13,637</u>	0
	<u>\$515,000</u>	<u>\$171,266</u>	<u>\$343,734</u>	

*Rounding error is \$1.00.

- (a) Annual lease payment required by lease contract.
- (b) Preceding balance of (d) X 10%, except beginning of first year of lease term.
- (c) (a) minus (b).
- (d) Preceding balance minus (c).

(c) Lessor's journal entries:

Beginning of the Year		
Lease Receivable	343,734	
Cost of Sales	210,000	
Sales		343,734
X-ray Machine Inventory		210,000
Selling Expense	14,000	
Cash or Payable		14,000
(To record the incurrence of initial direct costs relating to the lease)		

PROBLEM 21-13 (Continued)

Cash	50,000	
Lease Receivable.....		50,000
(To record receipt of the first lease payment)		
End of the Year		
Interest Receivable	29,373	
Interest Revenue.....		29,373
(To record interest earned during the first year of the lease)		

PROBLEM 21-14

- (a) The lease is a capital lease because: (1) the lease term is for 83% (10 ÷ 12) of the economic life of the leased asset and (2) the present value of the minimum lease payments exceeds 90% of the fair market value of the leased asset.

Initial Obligation Under Capital Lease:

PV of lease payments, \$50,000 X 6.75902	\$337,951
PV of guaranteed residual value, \$15,000 X .38554	<u>5,783</u>
Initial obligation under capital lease	<u>\$343,734</u>

- (b) **CRAIG GOCKER MEDICAL (Lessee)
Lease Amortization Schedule
(Annuity Due Basis, GRV)**

Beginning of Year	Annual Lease Payment Plus GRV (a)	Interest (10%) on Unpaid Liability (b)	Reduction of Lease Liability (c)	Lease Liability (d)
Initial PV	—	—	—	\$343,734
1	\$ 50,000	—	\$ 50,000	293,734
2	50,000	\$ 29,373	20,627	273,107
3	50,000	27,311	22,689	250,418
4	50,000	25,042	24,958	225,460
5	50,000	22,546	27,454	198,006
6	50,000	19,801	30,199	167,807
7	50,000	16,781	33,219	134,588
8	50,000	13,459	36,541	98,047
9	50,000	9,805	40,195	57,852
10	50,000	5,785	44,215	13,637
End of 10	<u>15,000</u>	<u>1,363*</u>	<u>13,637</u>	0
	<u>\$515,000</u>	<u>\$171,266</u>	<u>\$343,734</u>	

*Rounding error is \$1.

- (a) Annual lease payment required by lease contract.
 (b) Preceding balance of (d) X 10%, except beginning of first year of lease term.
 (c) (a) minus (b).
 (d) Preceding balance minus (c).

PROBLEM 21-14 (Continued)

(c) Lessee's journal entries:

Beginning of the Year		
Leased Equipment Under Capital Leases	343,734	
Lease Liability		343,734
(To record the lease of x-ray equipment using capital lease method)		
Lease Liability	50,000	
Cash		50,000
(To record payment of annual lease obligation)		
End of the Year		
Interest Expense	29,373	
Interest Payable		29,373
(To record accrual of annual interest on lease obligation)		
Depreciation Expense	32,873	
Accumulated Depreciation—Leased Assets		32,873
(To record depreciation expense for year 1 using straight-line method [(\$343,734 – \$15,000) ÷ 10 years])		

PROBLEM 21-15

Memorandum Prepared by: (Your Initials)

Date:

**SARAH SHAMESS, INC.
December 31, 2003
Reclassification of Leased Auto
As a Capital Lease**

While performing a routine inspection of the client's garage, I found a 2002 Shirk automobile which was not listed among the company's assets in the equipment subsidiary ledger. I asked Sally Straub, plant manager, about the vehicle, and she indicated that because the Shirk was only being leased, it was not listed along with other company assets. Having accounted for this agreement as an operating lease, Sarah Shames, Inc. had charged \$2,160 to 2003 rent expense.

Examining the lease agreement entered into with Jack Hayes New and Used Cars on January 1, 2003, I determined that the Shirk should be capitalized because its lease term (50 months) is greater than 75% of its useful life (60 months).

I advised the client to capitalize this lease at the present value of its minimum lease payments: \$7,055 (the present value of the monthly payments), plus \$699 (the present value of the guaranteed residual). The following journal entry was suggested:

Leased Asset Under Capital Leases	7,754	
Lease Liability		7,754

To account for the first year's payments as well as to reverse the original entries, I advised the client to make the following entry:

Lease Liability	1,299	
Interest Expense	861	
Rent Expense		2,160

PROBLEM 21-15 (Continued)

Finally, this Shirk must be depreciated over its lease term. Using straight-line, I computed monthly depreciation of \$133.08 (the capitalized amount, \$7,754, minus the guaranteed residual, \$1,100, divided by the 50-month lease term). The client was advised to make the following entry to record 2003 depreciation:

Depreciation Expense	1,597	
Accumulated Depreciation		1,597

PROBLEM 21-16

(a) The lease agreement satisfies both the 75% and 90% requirements, collectibility is reasonably predictable, and there are no important uncertainties surrounding the costs yet to be incurred by the lessor. For the lessee, it is a capital lease, and for the lessor, it is a direct financing lease (since cost equals fair value).

(b) January 1, 2004

Lessee:

Leased Equipment Under Capital Leases	185,078*	
Lease Liability		185,078
(\$25,250 X 6.99525 = \$176,630.06		
\$20,000 X .42241 = <u>8,448.20</u>		
=		<u>\$185,078.26)</u>

*The fair value of the equipment is used since it is lower than the PV.

Lease Liability	25,250	
Cash		25,250

January 1, 2004

Lessor:

Lease Receivable	185,078	
Equipment		185,078
Cash	25,250	
Lease Receivable		25,250

December 31, 2004

Lessee:

Interest Expense	14,385	
Interest Payable		14,385
[(\$185,078 – \$25,250) X .09]		
Depreciation Expense	16,508	
Accumulated Depreciation		16,508
[(\$185,078 – \$20,000) ÷ 10]		

PROBLEM 21-16 (Continued)

December 31, 2004

Lessor:

Interest Receivable	14,385	
Interest Revenue.....		14,385

- (c) (1) and (2) are both \$176,630, as the lessee has no obligation to pay the residual value.**
- (d) (1) and (2) are both \$185,078, as residual value exists whether or not it is guaranteed.**
- (e) Since 90% of \$185,078 is \$166,570, the difference of \$18,508 is the present value of the residual value. The future value of \$18,508 for $n = 10$, $i = .09$ is \$43,815 ($\$18,508 \times 2.36736$). Therefore, the residual value would have had to be greater than \$43,815.**

TIME AND PURPOSE OF CASES

Case 21-1 (Time 15-25 minutes)

Purpose—to provide the student with an understanding of the theoretical reasons for requiring certain leases to be capitalized by the lessee and how a capital lease is recorded at its inception and how the amount to be recorded is determined. The student explains how to determine the lessee's expenses during the first year and how the lessee will report the lease on the balance sheet at the end of the first year.

Case 21-2 (Time 25-35 minutes)

Purpose—to provide an understanding of the factors underlying the accounting for a leasing arrangement from the point of view of both the lessee and lessor. The student is required to determine the classification of this leasing arrangement, the appropriate accounting treatment which should be accorded this lease, and the financial statement disclosure requirements for both the lessee and lessor.

Case 21-3 (Time 20-30 minutes)

Purpose—to provide the student with an understanding of the classification of three leases. The student determines how the lessee should classify each lease, what amount should be recorded as a liability at the inception of each lease, and how the lessee should record each minimum lease payment for each lease.

Case 21-4 (Time 15-25 minutes)

Purpose—to provide the student with an assignment to describe: (a) the accounting for a capital lease both at inception and during the first year and (b) the accounting for an operating lease. The student is also required to compare and contrast a sales-type lease with a direct financing lease.

Case 21-5 (Time 30-35 minutes)

Purpose—to provide the student with a lease situation containing a bargain purchase option and both an implicit rate and a stated interest rate between which the student must choose. The student is required to compute the appropriate amount at which to capitalize the lease and, in a second requirement, given different interest rates, to prepare the balance sheet and income statement presentation of this lease by the lessee.

Case 21-6 (Time 20-25 minutes)

Purpose—to provide the student with lease arrangement with a bargain purchase option in order to examine the ethical issues of lease accounting.

***Case 21-7** (Time 15-25 minutes)

Purpose—to provide the student with an assignment to discuss the theoretical justification for lease capitalization. In addition, the student is required to discuss the accounting issues related to a sale-leaseback.

***Case 21-8** (Time 20-25 minutes)

Purpose—to provide the student with a sale-leaseback situation to which lease capitalization criteria need to be applied, as well as disclosures discussed and the sale accounted for.

SOLUTIONS TO CASES

CASE 21-1

- (a) When a lease transfers substantially all of the benefits and risks incident to the ownership of property to the lessee, it should be capitalized by the lessee. The economic effect of such a lease on the lessee is similar, in many respects, to that of an installment purchase.
- (b) Hayes should account for this lease at its inception as an asset and an obligation at an amount equal to the present value at the beginning of the lease term of minimum lease payments during the lease term, excluding that portion of the payments representing executory costs, together with any profit thereon. However, if the amount so determined exceeds the fair value of the leased machine at the inception of the lease, the amount recorded as the asset and obligation should be the machine's fair value.
- (c) Hayes will incur interest expense equal to the interest rate used to capitalize the lease at its inception multiplied by the appropriate net carrying value of the liability.

In addition, Hayes will incur an expense relating to amortization of the capitalized cost of the leased asset. This amortization should be based on the estimated useful life of the leased asset and amortized in a manner consistent with Hayes' normal depreciation policy for owned assets.

- (d) The asset recorded under the capital lease and the accumulated amortization should be classified on Hayes' December 31, 2005, balance sheet as noncurrent and should be separately identified by Hayes in its balance sheet or footnotes thereto. The related obligation recorded under the capital lease should be reported on Hayes' December 31, 2005, balance sheet appropriately classified into current and noncurrent liabilities categories and should be separately identified by Hayes in its balance sheet.

CASE 21-2

- (a)
 1. Because the present value of the minimum lease payments is greater than 90 percent of the fair value of the asset at the inception of the lease, Gocker should record this as a capital lease.
 2. Since the given facts state that Gocker (lessee) does not have access to information that would enable determination of Morgan Leasing Corporation's (lessor) implicit rate for this lease, Gocker should determine the present value of the minimum lease payments using the incremental borrowing rate (15 percent). This is the rate that Gocker would have to pay for a like amount of debt obtained through normal third party sources (bank or other direct financing).
 3. The amount recorded as an asset on Gocker's books should be shown in the fixed assets section of the balance sheet as "Leased Equipment Under Capital Leases" or another similar title. Of course, at the same time as the asset is recorded, a corresponding liability ("Lease Liability" or similar titles) is recognized in the same amount. This liability is classified as both current and noncurrent, with the current portion being that amount that will be paid on the principal amount during the next year. The cost of the lease is matched with revenue through depreciation taken on the machine over the life of the lease. Since ownership of the machine is not expressly conveyed to Gocker in the terms of the lease at its inception, the term of the lease is the appropriate depreciable life. The minimum lease payments represent a payment of principal and interest at each payment date. Interest expense is computed at the rate at which the minimum lease payments were discounted

CASE 21-2 (Continued)

and represents a fixed interest rate applied to the declining balance of the debt. Executory costs (such as insurance, maintenance, or taxes) paid by Gocker are charged to an appropriate expense, accrual, or deferral account as incurred or paid.

4. For this lease, Gocker must disclose the future minimum lease payments in the aggregate and for each of the succeeding fiscal years (not to exceed five), with a separate deduction for the total amount for imputed interest necessary to reduce the net minimum lease payments to the present value of the liability (as shown on the balance sheet).
- (b)
1. Based on the given facts, Morgan has entered into a direct financing lease. There is no dealer or manufacturer profit included in the transaction, the discounted present value of the minimum lease payments is in excess of 90 percent of the fair value of the asset at the inception of the lease arrangement, collectibility of minimum lease payments is reasonably assured, and there are no important uncertainties surrounding unreimbursable costs to be paid by the lessor.
 2. Morgan should record a Lease Receivable for the present value of the minimum lease payments and the present value of the residual value. It should also remove the machine from the books by a credit to the applicable asset account.
 3. During the life of the lease, Morgan will record payments received as a reduction in the receivable. Interest revenue is recognized as interest revenue earned by applying the implicit interest rate to the declining balance of the lease receivable. The implicit rate is the rate of interest that will discount the sum of the payments and unguaranteed residual value to the fair value of the machine at the date of the lease agreement. This method of earnings recognition is termed the effective interest method of amortization. In this case, Morgan will use the 14% implicit rate.
 4. Morgan must make the following disclosures with respect to this lease:
 - i. The components of the lease receivable in direct financing leases, which are (1) the future minimum lease payments to be received, (2) any unguaranteed residual values accruing to the benefit of the lessor, and (3) the amounts of unearned interest revenue.
 - ii. Future minimum lease payments to be received for each of the remaining fiscal years (not to exceed five) as of the date of the latest balance sheet presented.

CASE 21-3

- (a) A lease should be classified as a capital lease when it transfers substantially all of the benefits and risks inherent to the ownership of property by meeting any one of the four criteria established by **FASB 13** for classifying a lease as a capital lease.

Lease L should be classified as a capital lease because the lease term is equal to 80 percent of the estimated economic life of the equipment, which exceeds the 75 percent or more criterion.

Lease M should be classified as a capital lease because the lease contains a bargain purchase option.

Lease N should be classified as an operating lease because it does not meet any of the four criteria for classifying a lease as a capital lease.

CASE 21-3 (Continued)

- (b) For Lease L, Shinault Company should record as a liability at the inception of the lease an amount equal to the present value at the beginning of the lease term of the minimum lease payments during the lease term. This amount excludes that portion of the payments representing executory costs such as insurance, maintenance, and taxes to be paid by the lessor, including any profit thereon. However, if the amount so determined exceeds the fair value of the equipment at the inception of the lease, the amount recorded as a liability should be the fair value.

For Lease M, Shinault Company should record as a liability at the inception of the lease an amount determined in the same manner as for Lease L, and the payment called for in the bargain purchase option should be included in the minimum lease payments at its present value.

For Lease N, Shinault Company should not record a liability at the inception of the lease.

- (c) For Lease L, Shinault Company should allocate each minimum lease payment between a reduction of the liability and interest expense so as to produce a constant periodic rate of interest on the remaining balance of the liability.

For Lease M, Shinault Company should allocate each minimum lease payment in the same manner as for Lease L.

For Lease N, Shinault Company should charge minimum lease (rental) payments to rental expense as they become payable.

CASE 21-4

Part 1

- (a) A lessee would account for a capital lease as an asset and an obligation at the inception of the lease. Rental payments during the year would be allocated between a reduction in the liability and interest expense. The asset would be amortized in a manner consistent with the lessee's normal depreciation policy for owned assets, except that in some circumstances, the period of amortization would be the lease term.
- (b) No asset or liability would be recorded at the inception of the lease. Normally, rental on an operating lease would be charged to expense over the lease term as it becomes payable. If rental payments are not made on a straight-line basis, rental expense nevertheless would be recognized on a straight-line basis unless another systematic or rational basis is more representative of the time pattern in which use benefit is derived from the leased property, in which case that basis would be used.

Part 2

- (a) The lease receivable in the lease is the same for both a sales-type and a direct financing lease. The lease receivable is the present value of the minimum lease payments (net of amounts, if any, included therein for executory costs such as maintenance, taxes, and insurance to be paid by the lessor, together with any profit thereon) plus the present value of the unguaranteed residual value accruing to the benefit of the lessor.
- (b) For both a sales-type lease and a direct financing lease, the interest revenue is recognized over the lease term by use of the interest method to produce a constant periodic rate of return on the lease receivable. However, other methods of income recognition may be used if the results obtained are not materially different from the interest method.

CASE 21-4 (Continued)

- (c) In a sales-type lease, the excess of the sales price over the carrying amount of the leased equipment is considered manufacturer's or dealer's profit and would be included in income in the period when the lease transaction is recorded.

In a direct financing lease, there is no manufacturer's or dealer's profit. The income on the lease transaction is composed solely of interest.

CASE 21-5

- (a) The appropriate amount for the leased aircraft on Brad Hayes Corporation's balance sheet after the lease is signed is \$1,000,000, the fair market value of the plane. In this case, fair market value is less than the present value of the net rental payments plus purchase option (\$1,022,226). When this occurs, the asset is recorded at the fair market value.
- (b) The leased aircraft will be reflected on Brad Hayes Corporation's balance sheet as follows:

Noncurrent assets	
Leased property under capital leases	\$1,000,000
Less: Accumulated depreciation	<u>61,667</u>
	<u>\$ 938,333</u>
Current liabilities	
Lease liability	
Interest payable	\$ 77,600
Lease liability (Note A)	<u>60,180</u>
	<u>\$ 137,780</u>
Noncurrent liabilities	
Lease liability (Note A)	<u>\$ 802,040</u>

The following items relating to the leased aircraft will be reflected on Brad Hayes Corporation's income statement:

Depreciation expense (Note A)	\$61,667
Interest expense	77,600
Maintenance expense	6,900
Insurance and tax expense	4,000

Note A

The company leases a Viking turboprop aircraft under a capital lease. The lease runs until December 31, 2014. The annual lease payment is paid in advance on January 1 and amounts to \$141,780, of which \$4,000 is for insurance and property taxes. The aircraft is being depreciated on the straight-line basis over the economic life of the asset. The depreciation on the aircraft included in the current year's depreciation expense and the accumulated depreciation on the aircraft amount to \$61,667.

CASE 21-5 (Continued)

<u>Computations</u>	
Depreciation expense:	
Capitalized amount	\$1,000,000
Salvage value	<u>75,000</u>
	<u>\$ 925,000</u>
Economic life	<u>15 years</u>
Annual depreciation	<u>\$61,667</u>
Liability amounts:	
Lease liability 1/1/05	\$1,000,000
Payment 1/1/05	<u>137,780</u>
Lease liability 12/31/05	862,220
Lease payment due 1/1/06	\$137,780
Interest on lease (\$862,220 X .09)	<u>77,600</u>
Reduction of principal	<u>60,180</u>
Noncurrent liability 12/31/05	<u>\$ 802,040</u>

CASE 21-6

- (a) The ethical issues are fairness and integrity of financial reporting versus profits and possibly misleading financial statements. On one hand, if Kessinger can substantiate her position, it is possible that the agreement should be considered an operating lease. On the other hand, if Kessinger cannot or will not provide substantiation, she would appear to be trying to manipulate the financial statements for some reason, possibly debt covenants or minimum levels of certain ratios.
- (b) If Kessinger has no particular expertise in copier technology, she has no rational case for her suggestion. If she has expertise, then her suggestion may be rational and would not be merely a means to manipulate the balance sheet to avoid recording a liability.
- (c) Beckert must decide whether the situation presents a legitimate difference of opinion where professional judgment could take the answer either way or an attempt by Kessinger to mislead. Beckert must decide whether he wishes to argue with Kessinger or simply accept Kessinger's position. Beckert should assess the consequences of both alternatives.

*CASE 21-7

- (a) The economic effect of a long-term capital lease on the lessee is similar to that of an installment purchase. Such a lease transfers substantially all of the benefits and risks incident to the ownership of property to the lessee. Therefore, the lease should be capitalized.
- (b) 1. Dwyer should account for the sale portion of the sale-leaseback transaction at January 1, 2004, by recording cash for the sale price, decreasing equipment at the undepreciated cost (net carrying amount) of the equipment, and establishing a deferred gain on sale-leaseback for the excess of the sale price of the equipment over its undepreciated cost (net carrying amount).
2. Dwyer should account for the leaseback portion of the sale-leaseback transaction at January 1, 2004, by recording both an asset and a liability at an amount equal to the

CASE 21-7 (Continued)

present value at the beginning of the lease term of minimum lease payments during the lease term, excluding any portion of the payments representing executory costs, together with any profit. However, if the present value exceeds the fair value of the leased equipment at January 1, 2004, the amount recorded for the asset and liability should be the equipment's fair value.

- (c) The deferred gain should be amortized over the lease term or life of the asset, whichever is appropriate. During the first year of the lease, the amortization will be an amount proportionate to the amortization of the asset. This deferral and amortization method for a sale-leaseback transaction is required because the sale and the leaseback are two components of a single transaction rather than two independent transactions. Because of this interdependence of the sale and leaseback portions of the transaction, the gain (unearned profit) should be deferred and amortized over the lease term.

*CASE 21-8

- (a)
 1. Comparisons of an equipment's fair value to its lease payments' present value, and of its useful life to the lease term, are used to determine whether the lease is equivalent to an installment sale and is therefore a capital lease.
 2. A lease is categorized as a capital lease if, at the date of the lease agreement, it meets any one of four criteria. As the lease has no provision for Laura Truttman to reacquire ownership of the equipment, it fails the two criteria of transfer of ownership at the end of the lease and a bargain purchase option. Laura Truttman's lease payments, with a present value equaling 85% of the equipment's fair value, fail the criterion for a present value equaling or exceeding 90% of the equipment's fair value. However, the lease would be classified as a capital lease because its term of 80% of the equipment's estimated useful life exceeds the criterion of being at least 75% of the equipment's estimated useful life.
- (b) Laura Truttman should account for the sale portion of the sale-leaseback transaction at December 31, 2004, by increasing cash for the sale price, decreasing equipment by the carrying amount, and recognizing a loss for the excess of the equipment's carrying amount over its sale price.
- (c) On the December 31, 2005, balance sheet, the equipment should be included as a fixed asset at the lease payments' present value at December 31, 2004, less 2005 amortization.

On the December 31, 2005, balance sheet, the lease obligation will equal the lease payments' present value at December 31, 2004, less principal repaid December 31, 2005. This amount will be reported in current liabilities for the principal to be repaid in 2006, and the balance in noncurrent liabilities.

FINANCIAL REPORTING PROBLEM

- (a) In Note 15 to its financial statements, 3M reports rental expense under operating leases.
- (b) 3M reported rental expense of \$119 million in 2001, \$119 million in 2000 and \$113 million in 1999.
- (c) 3M disclosed minimum rental commitments under noncancelable leases in excess of one year as of December 31, 2001 of:
 - 2002—\$79 million
 - 2003—\$75 million
 - 2004—\$40 million
 - 2005—\$28 million
 - 2006—\$20 million
 - 2007 and beyond—\$97 million

FINANCIAL STATEMENT ANALYSIS CASE

- (a) The total obligations under capital leases at 2/3/2001 for Penn Traffic Company is \$81,274,000 (the present value of the net minimum capital lease payments).
- (b) The book value of the assets recorded under capital leases for 2001 is \$50,812,000:

Facilities under capital leases	\$60,405,000
Less: Accumulated amortization	<u>(9,593,000)</u>
Book value	<u>\$50,812,000</u>

Possible reasons for the difference are as follows:

- (1) The estimated life of the asset and the lease term may be different. If the asset is being depreciated over the economic life, but the obligation is reduced over the lease term, a difference will result.
 - (2) The asset and the reduction of the obligation are independent accounting processes during the term of the lease. The lessee should depreciate the leased asset by applying conventional depreciation methods: straight-line, sum-of-the-years' digits, declining balance, units of production, etc. The reduction of the liability is based on payment schedules, interest rates, length of lease, etc.
- (c) The total rent expense for Penn Traffic in fiscal 2001 was \$38,204,000, consisting of:

Capital lease amortization expense	\$7,600,000
Operating lease rental expense:	<u>30,604,000</u>
Total rent expense	<u>\$38,204,000</u>

- (d) To estimate the present value of the operating leases, the same portion of interest to net minimum lease payments under capital leases must be determined. For example, the following proportion for capital leases as of February 3, 2001, is 40.3% or (\$54,898,000/\$136,172,000). The total payments under operating leases are \$327,191,000 and, therefore,

FINANCIAL STATEMENT ANALYSIS CASE (Continued)

the amount representing interest might be estimated to be \$131,857,973 or ($\$327,191,000 \times 40.3\%$). Thus, the present value of the net operating payments might be \$195,333,027.

Total operating lease payments due	\$327,191,000
Less estimated interest	<u>131,857,973</u>
Estimated present value of net operating lease payments	<u>\$195,333,027</u>

This answer is an approximation. This answer is somewhat incorrect because the proportion of payments after five years may be different between an operating and capital lease arrangement. Also, from the information provided, it is difficult to determine exactly what the payment schedules are beyond five years, although it is likely that the operating leases have shorter payment schedules and therefore higher present values. Some companies provide the present value of the operating leases in order to curb speculation as to what this amount should be.

COMPARATIVE ANALYSIS CASE

- (a) Southwest uses both capital leases and long-term operating leases. Southwest primarily leases aircraft and terminal space.
- (b) Southwest has some long-term leases that don't expire until after 2006. In many cases the leases can be renewed and most aircraft leases have purchase options.
- (c) Future minimum commitments under noncancelable leases are set forth below (in thousands):

	Capital	Operating
2002	\$ 17,562	\$290,378
2003	17,751	275,013
2004	17,651	242,483
2005	23,509	217,170
2006	13,379	185,125
Later years	65,395	1,589,559
	\$155,247	\$2,799,728

- (d) At year-end 2001, the present value of minimum lease payments under capital leases was \$109.3 million. Imputed interest deducted from the future minimum annual rental commitments was \$46 million.
- (e) The details of rental expense are set forth below:

2001	2000	1999
\$358.6	\$330.7	\$318.2

- (f) The main difference between Southwest and UAL is that UAL is leasing more types of assets compared to Southwest. In addition to aircraft and terminal space, UAL is leasing aircraft hangars, maintenance facilities, real estate, office and computer equipment, and vehicles.

RESEARCH CASES

CASE 1

- (a) Discounting the payments for the years $t + 1$ through $t + 5$ is straightforward. However, certain assumptions must be made in order to discount the amounts due thereafter. It is simplest to assume that these payments occur equally over the remaining life of the leases. The remaining life of the leases can be estimated by dividing the total amount due after five years by the expected payment in year $t + 5$.
- (b) The answer will vary depending on the firm selected.

CASE 2

- (a) The Big Five firms were asking for new guidance in an effort to restore waning confidence in accounting work following Enron's collapse as well as several accounting scandals and earnings restatements at other big corporations.
- (b) Off-the-balance-sheet lease obligations are currently reported as operating leases. In practice the accounting rules for capitalizing leases have been rendered partially ineffective by the strong desires of lessees to resist capitalization.

For operating leases having initial or remaining noncancelable *lease terms* in excess of one year:

- i. Future minimum rental payments required as of the latest balance sheet date, in the aggregate and for each of the five succeeding fiscal years.
- ii. Total minimum rentals to be received in the future under noncancelable subleases as of the latest balance sheet date.

For all operating leases, rental expense for each period with separate amounts for minimum rentals, *contingent rentals*, and sublease rentals. Rental payments under leases with *terms* of a month or less that were not renewed need not be included.

A general description of the lessee's arrangements including, but not limited to:

- i. The basis on which *contingent rental* payments are determined.

RESEARCH CASES (Continued)

- ii. The existence and terms of renewal or purchase options and escalation clauses.**
 - iii. Restrictions imposed by lease agreements, such as those concerning dividends, additional debt, and further leasing.**
- (c) As indicated in (b), lessees do not wish to capitalize their leases. Leasing generally involves large dollar amounts that when capitalized materially increase reported liabilities and adversely affect the debt-to-equity ratio. Lease capitalization is also resisted because charges to expense made in the early years of the lease term are higher under the capital lease method than under the operating method, frequently without the benefit.**

INTERNATIONAL REPORTING CASE

- (a) See the table below—under **As Reported**. American Airlines exhibits the strongest profitability (4.71% ROA). JAL reports ROA less than 1%. American Airlines also has the lowest-reported debt levels based on the debt-to-asset ratio (70.3% of assets) with KLM just behind (72.05% debt-to-asset ratio). JAL has over 90% of its assets financed with debt.
- (b) See the table below for the amounts adjusted for noncapitalization of leases. These adjustments have varying effects on income with income adjustments fairly small for American and KLM. The income effects for JAL are dramatic, likely due to increased interest expense associated with capitalized leases. JAL reports a loss on an adjusted basis. On the balance sheet, capitalization results in higher assets and liabilities, thereby increasing the asset base on which profitability measures such as return-on-assets are based. As a result, all three companies report lower ROA on an adjusted basis, although the rank-ordering of these companies does not change after adjusting for noncapitalization of the leases. Note that American's debt ratio is higher than KLM's on an adjusted basis.

	American Airlines	KLM Royal Dutch Airlines	Japan Airlines
	<i>Millions of Dollars</i>	<i>Millions of Gilders</i>	<i>Millions of Yen</i>
<u>As Reported</u>			
Assets	20,915	19,205	2,042,761
Liabilities	14,699	13,837	1,857,800
Income	985	606	4,619
<u>Estimated Impact of Capitalizing Leases on:</u>			
Assets	5,897	1,812	244,063
Liabilities	6,886	1,776	265,103
Income	(143)	24	(9,598)

INTERNATIONAL REPORTING CASE (Continued)

	American Airlines	KLM Royal Dutch Airlines	Japan Airlines
	<i>Millions of Dollars</i>	<i>Millions of Gilders</i>	<i>Millions of Yen</i>
<u>Solution</u>			
<u>Part (a)—As Reported Ratios</u>			
Return on Assets	4.71%	3.16%	0.23%
Debt to Assets	70.28%	72.05%	90.95%
<u>Part (b)—Adjusted Amounts</u>			
Assets	26,812	21,017	2,286,824
Liabilities	21,585	15,613	2,122,903
Income	842	630	-4,979
<u>Adjusted Ratios</u>			
Return on Assets	3.14%	3.00%	-0.22%
Debt to Assets	80.50%	74.29%	92.83%

- (c) As noted in part (b), the effects of noncapitalization are revealed in both income and balance sheet measures. While the income effect (the numerator in ROA) may be small, the increase in assets due to off-balance sheet lease financing (the denominator effect) can result in an overstated ROA profitability measure. For example, although KLM's adjusted income is higher, the increase in assets results in a lower ROA on an adjusted basis.
- (d) There is some degree of similarity in the accounting for leases in that in most countries, the rules allow companies to work the rules to avoid capitalizing lease obligations and assets. However, as indicated in the analysis above, such similarity in "bad" accounting does not make for comparability in reporting. Note that the adjustments to put these companies on the same basis resulted in differing adjustments for the effects of the leases for different companies. Thus, the key to a good international accounting standard in this area is one that results in comparable information about the use of leases and financing instruments by companies in different countries.

PROFESSIONAL SIMULATION 1

Resources

Note: This lease is a capital lease to the lessee because the lease term (six years) exceeds 75% of the remaining economic life of the asset (six years). Also, the present value of the minimum lease payments exceeds 90% of the fair value of the asset.

\$ 81,365 Annual rental payment
X 4.60478 PV of an annuity due of 1 for n = 6, i = 12%
\$ 374,668 PV of periodic rental payments

\$ 50,000 Guaranteed residual value
X .50663 PV of 1 for n = 6, i = 12%
\$ 25,332 PV of guaranteed residual value

\$ 374,668 PV of periodic rental payments
+ 25,332 PV of guaranteed residual value
\$ 400,000 PV of minimum lease payments

	A	B	C	D	E	F	G	H	I	J	K	L
1												
2	Bob Evans Farms (Lessee)											
3	Lease Amortization Schedule											
4												
5												
6												
7												
8												
9												
10	Date	Lease Payment		Interest Expense		Reduction of Lease Liability		Balance of Lease Liability				
11	January 1, 2004							\$400,000.00				
12	January 1, 2004	\$81,365		0		\$81,365.00		318,635.00				
13	January 1, 2005	81,365		38,236.20		43,128.80		275,506.20				
14	January 1, 2006	81,365		33,060.74		48,304.26		227,201.94				
15	January 1, 2007	81,365		27,264.23		54,100.77		173,101.18				
16	January 1, 2008	81,365		20,772.14		60,592.86		112,508.32				
17	January 1, 2009	81,365		13,501.00		67,864.00		44,644.32				
18	December 31, 2009	50,000		5,357.32		44,642.68		1.63				
19		\$538,190		138,191.63		399,998.37						
20												
21												
22												
23												
24												
25												
26												

PROFESSIONAL SIMULATION (Continued)

Journal Entries

January 1, 2004		
Leased Equipment Under Capital Leases	400,000	
Lease liability.....		400,000
Lease liability	81,365	
Cash		81,365
During 2004		
Lease Executory Expense	4,000	
Cash		4,000
December 31, 2004		
Interest Expense	38,236	
Interest Payable		38,236
Depreciation Expense	58,333	
Accumulated Depreciation—Capital Leases ($[\$400,000 - \$50,000] \div 6$).....		58,333
January 1, 2005		
Interest Payable	38,236	
Interest Expense		38,236
Interest Expense	38,236	
Lease liability	43,129	
Cash		81,365
During 2005		
Lease Executory Expense	4,000	
Cash		4,000
December 31, 2005		
Interest Expense	33,061	
Interest Payable		33,061
Depreciation Expense	58,333	
Accumulated Depreciation—Capital Leases		58,333

PROFESSIONAL SIMULATION (Continued)

(Note to instructor: The guaranteed residual value was subtracted for purposes of determining the depreciable base. The reason is that at the end of the lease term, hopefully, this balance can offset the remaining lease obligation balance. To depreciate the leased asset to zero might lead to a large gain in the final years if the residual value has a value at least equal to its guaranteed amount.)

PROFESSIONAL SIMULATION 2

Explanation

This is a capital lease to Dexter Labs since the lease term (5 years) is greater than 75% of the economic life (6 years) of the leased asset. The lease term is $83\frac{1}{3}\%$ ($5 \div 6$) of the asset's economic life.

Measurement

Computation of present value of minimum lease payments:

$$\$8,668 \times 4.16986^* = \$36,144$$

*Present value of an annuity due of 1 for 5 periods at 10%.

Journal Entries

1/1/04	Leased Machine Under Capital Leases 36,144 Lease Liability..... 36,144	36,144	
	Lease Liability 8,668 Cash..... 8,668	8,668	
12/31/04	Depreciation Expense 7,229 Accumulated Depreciation— Capital Leases 7,229 (\$36,144 ÷ 5 = \$7,229)	7,229	
	Interest Expense 2,748 Interest Payable..... 2,748 [(\$36,144 – \$8,668) X .10]	2,748	
1/1/05	Lease Liability 5,920 Interest Payable 2,748 Cash..... 8,668	8,668	

