Qualitative Characteristic Descriptions

____ 1. Includes all required information for a financial statement user to understand the economic reality of the company.
____ 2. Has no discrepancies or omissions.
____ 3. Presented in a timely manner so as to influence business decisions.
____ 4. Corrects or confirms past predictions or forecasts.
____ 5. Results from the consistent use of accounting methods across periods and entities.
____ 6. Assists financial statement users in forecasting future trends of a company.
____ 7. Classified and presented clearly and concisely.
____ 8. Results would be similar for independent observers.
____ 9. Data that influences the economic decisions of a financial statement user are reported.
____ 10. Presented without bias.

Exercise 1-46
Applying Fundamental Qualitative Characteristics **LO3**

The following statements describe the usefulness of accounting information.

____ ____ *a*. A company's Form 10-K statement includes three years of financial statement history, which is a source of information for investors in forecasting future earnings.
____ ____ *b*. An investor reviewed the notes to the financial statements to assess a company's debt structure. The investor was interested in the interest rates on the loans, the terms of the notes, future payments, and related debt covenants.
____ ____ *c*. A company discloses the impact of all recently proposed standards on the company's consolidated financial position, results of operations, and cash flows, regardless if it has a positive, negative, or immaterial impact.
____ ____ *d*. An investor of a company reconciled forecasted sales for 2020 to actual sales for 2020, discovering that the company outperformed its forecast by 20%.
____ ____ *e*. Although not a historically large amount, a company reports the amount of inventory obsolescence due to the subjectivity in estimating the amount.
____ ____ *f*. The observation of a physical inventory count is a way that auditors can obtain assurance that the inventory value recorded in the financial statements is accurate.

Required

For each statement *a* through *f*, indicate which *fundamental qualitative characteristic* best applies (relevance or faithful representation), and then, which subset of the *fundamental characteristic* best applies (predictive value, confirmatory value, materiality, completeness, neutrality, or free from error).

Exercise 1-47
Applying Enhancing Qualitative Characteristics **LO3**

The following statements describe the usefulness of accounting information.

____ *a*. Management of a company prepares financial statements that are audited by an independent accounting firm. In the opinion of the auditors, the consolidated financial statements present fairly, in all material respects, the financial position, results of operations, and cash flows in conformity with GAAP.
____ *b*. A corporation has a policy to present quarterly financial statements to its shareholders 30 days after quarter-end, and year-end financial statements within 60 days after year-end.
____ *c*. A start-up company chose to value inventory using the average cost method after research indicated that the average cost method was the most typical method used by its competitors.
____ *d*. A company's note regarding its income tax accrual is complex, requiring a reasonable understanding of income tax accounting.
____ *e*. A company has continued to use the same inventory costing method since its inception.

Required

For each statement *a* through *e*, indicate which enhancing qualitative characteristic best applies (comparability, verifiability, timeliness, or understandability).

Exercise 1-48
Applying Qualitative Characteristics **LO3**

During an audit of Gomez Company, the five situations described below were found to exist.

1. The company recorded a $27.50 tool as expense when purchased, although it had a 10-year estimated useful life and no residual value.
2. For inventory purposes, the company switched from FIFO to LIFO to FIFO for the same items during a five-year period.
3. The company recognizes depreciation using the double-declining balance method, but its major competitors recognize depreciation using the straight-line method.

____ 3. The company is assumed to exist over at least the period of time its building is being depreciated, which is 40 years.
____ 4. A parent company is consolidated with a wholly owned subsidiary to produce consolidated financial statements.
____ 5. Cost of goods sold is recorded at the same time as the related product is sold.
____ 6. The depreciable cost of equipment is allocated to expense over the useful life of the equipment.
____ 7. A public company reports financial results for each quarter and year-end.
____ 8. A company records a liability for receipt of a payment related to a service to be performed next month.

Exercise 1-55
Identifying Violations of Principles and Assumptions **LO5, 6**

Identify the accounting assumption or principle that is most violated in each of the cases 1 through 8.

____ 1. Thrive Inc. adjusted amounts in its financial statements for the effect of inflation over the past five years.
____ 2. Soni Corp. recorded a sale at the time of the customer order, even though the item was shipped several days later.
____ 3. Harper Inc. adopted the new revenue recognition accounting standard in the current year but failed to disclose the impact on financial statements, which is material.
____ 4. The expense for a one-year maintenance contract for Lazer Inc. was recorded in January of the year of the contract.
____ 5. A personal loan of the president of Lee Corp. was included in the liabilities on the balance sheet of Lee Corp.
____ 6. Equipment recorded in the accounting records of Atlanta Inc. appreciated $100,000 from 2019 to 2020. Atlanta Inc. recorded this unrealized gain in the income statement as it increased the asset value.
____ 7. Bell Tech Inc., a private corporation, provides financial statements to its shareholders every two years.
____ 8. Wilderness Inc. depreciated fixed assets (over 5 years) in its current financial statements even though liquidation of the company was imminent.

Accounting Decisions and Judgments
assignments include more application-type problems and require critical thinking.

Accounting Decisions and Judgments

AD&J 1-56
Evaluating a Change in Accounting Principle **LO 1, 6**

Real World Analysis **Ford Motor Company** disclosed the following note accompanying its December 31, 2015, annual financial statements.

> **Change in Accounting—Pension and Other Postretirement Employee Benefits ("OPEB").** On December 31, 2015, we adopted a change in accounting method for certain components of expense related to our defined benefit pension and OPEB plans. Under the new method, we recognize remeasurement gains and losses immediately in net income and use fair value to calculate the expected return on plan assets. Historically, we recognized remeasurement gains and losses as a component of Accumulated other comprehensive income/(loss) and amortized them as a component of net periodic benefit cost, subject to a corridor, over the remaining service period of our active employees. In addition, we previously used a market-related value of plan assets that recognized changes in fair value over time to calculate the expected return on plan assets.
>
> We believe this change in accounting method is preferable as it better recognizes the current performance of our pension and OPEB plans in our net income in the year incurred. Additionally, our segment reporting shown in Note 24 now provides better transparency into the underlying operating results of Ford's Automotive business units. We have retrospectively applied this change in accounting method to all prior periods. As of January 1, 2013, the cumulative effect of the change resulted in a decrease of $18 billion in Retained earnings and an increase of $18 billion in Accumulated other comprehensive income/(loss), both components of total equity in our consolidated and sector balance sheets.

Required

Does this change in reporting aid the decisions of those using Ford's financial statements? Explain.

AD&J 1-57
Evaluating an Annual Report **LO1, 6**

Real World Analysis Obtain an electronic copy of the Form 10-K for the **Coca-Cola Company** for the year ended December 31, 2015, which is on the SEC Edgar website (https://www.sec.gov/edgar/searchedgar/companysearch.html). Search for "Coca Cola Co."

Required

Answer the following questions based on its 2015 financial statements.

a. On what date does the annual reporting period end? Is the company a calendar-year reporting firm?
b. What were the net operating revenues for 2015?
c. What was the net increase (decrease) in cash and cash equivalents for 2015?

- Determining financial reports to produce for internal and external use including the use of integrated reporting.

Management Judgment Required in Setup of Accounts

Establishing a chart of accounts is a crucial step as it determines how detailed or summarized information will be organized in financial reports. A chart of accounts also can be tailored to specific industries to make reports more relevant for decision-makers.

Management Judgment for Data Analytics

The use of data analytics, where large data sets often called *big data* can be analyzed, is a way for companies to gain a competitive edge through skilled analysis of information. Data analytics tools are used by accountants to link nonfinancial information with financial information for purposes of integrated reporting. This can lead to more reliable forecasts, more comprehensive and robust reporting, and generally more useful information for management decision-making. Understanding how to link nonfinancial data to financial data summarized through the accounting cycle requires critical thinking and management judgment.

APPENDIX 2A LO 2-8 Convert from cash-basis net income to accrual-basis net income

LO 2-8 Overview

Convert from Cash Basis to Accrual Basis

- **Cash receipts (cash to accrual)**
  - Adjust for changes in accounts receivable and deferred revenue
- **Cash payments (cash to accrual)**
  - Adjust for changes in prepaid expenses and accrued liabilities

This text applies the accrual basis of accounting, which is required under GAAP. The accrual basis records expenses when incurred and revenues when performance obligations are met. Recognition in the accounting records often occurs before or after the payment or receipt of cash. Several of the adjusting entries in this section record resource changes of this type. For example, one adjusting entry records interest expense before cash is paid, while another adjusting entry records training revenue after cash is received.

Cash-basis accounting, which generally records an entry only upon exchange of cash, typically does not require many adjusting entries. Cash-basis accounting is used by some small companies and, in some instances, for income tax accounting. Earnings under the accrual basis more fully reflect the resource changes affecting a company's net assets for a period.

Conversion of Receipts (Cash Basis) to Revenue (Accrual Basis)

To convert cash received from customers from a cash basis to an accrual basis, the company must take into account changes in accounts receivable and deferred revenue.

Hint: This solution can also be set up using T-accounts.

Deferred Rent Revenue		Rent Receivable	
	Beg Bal	Beg Bal	
Rent revenue	Cash receipts	Rent revenue	Cash receipts
	End Bal	End Bal	

Cash receipts from customers (cash-basis)	
Subtract beginning accounts receivable (asset)	← Cash receipt this year, but revenue in prior year
Add ending accounts receivable (asset)	← No cash receipt yet, but revenue in current year
Add beginning deferred revenue (liability)	← Cash received last year, but revenue in current year
Subtract ending deferred revenue (liability)	← Cash receipt this year, but revenue next year
Revenue (accrual-basis)	

Conversion of Disbursements (Cash Basis) to Operating Expenses (Accrual Basis)

To convert cash paid for operating expenses from a cash basis to an accrual basis, the company must take into account changes in prepaid expenses and accrued liabilities.

Brief Exercise 2-23
Recording Accrued Revenues **LO2, 4**

AtoZ Co. provided delivery services for $5,000 to a customer on December 31, 2020, that has not yet been billed to the customer.

a. Record the year-end adjustment required on December 31, 2020.
b. Record the receipt of cash from the customer in January 2021.

Brief Exercise 2-24
Recording Accrued Interest Expense **LO4**

Alaska Inc. borrowed $40,000 by signing a one-year note payable on November 1, 2020. The note bears interest at 10% and interest is payable upon maturity of the note.

a. Record this financing transaction on November 1, 2020.
b. Record the year-end adjusting entry required on December 31, 2020. *Hint:* Prorate the annual interest of 10% for two months.
c. Record the entry to repay the note on November 1, 2021.

Brief Exercise 2-25
Recording Asset Purchase and Depreciation **LO2, 4**

Juan Inc. purchased equipment for $200,000 cash on June 30, 2020. The equipment has an estimated useful life of 10 years with no salvage value. The company will depreciate the asset evenly over its useful life.

a. Record the purchase of equipment on June 30, 2020.
b. Record the adjusting entry required on December 31, 2020.
c. Provide the balance sheet presentation of equipment on December 31, 2020.

Brief Exercise 2-26
Recording Adjusting Entries **LO4**

Prepare the adjusting journal entries required on December 31, 2020, for Walker Corp. using the following information. Assume that no adjusting journal entries were recorded in 2020 prior to year-end.

a. Interest expense of $150 for the month of December 2020 will be paid in January 2021.
b. Unbilled revenue for services performed in December 2020 is $500. The company will prepare and forward invoices for this amount in January 2021 to customers with a 30-day collection term.
c. $1,500 cash was received in advance on November 30, 2020, for future services to be performed by Walker Corp. and was recorded as deferred service revenue. The services were performed on December 20, 2020.
d. Walker Corp. acquired a two-year insurance policy on January 1, 2020, for $4,800 cash that was recorded initially as prepaid insurance.
e. Depreciation on equipment is $6,000 for 2020.

Brief Exercise 2-27
Analyzing Financial Statement Impacts **LO4**

Referring to the information in Brief Exercise 2-26, indicate the income statement and balance sheet impacts in each case *a* through *e* if Walker Corp. failed to record the necessary adjusting entry(ies).

Brief Exercise 2-28
Preparing an Adjusted Trial Balance **LO5**
Hint: See Demo 2-5

The following is the unadjusted trial balance for Walker Corp. as of December 31, 2020. Prepare an adjusted trial balance after posting the adjusting entries required in Brief Exercise 2-26.

Unadjusted Trial Balance
December 31, 2020

Accounts	Debit	Credit
Cash	$ 8,000	
Accounts receivable	3,500	
Supplies	1,800	
Prepaid insurance	4,800	
Equipment	25,000	
Accumulated depreciation		
Accounts payable		$ 1,200
Interest payable		
Deferred revenue		1,500
Note payable		10,000
Common stock		25,000
Service revenue		9,000
Salaries expense	3,600	
Depreciation expense		
Interest expense		
Insurance expense		
Totals	$46,700	$46,700

d. Prepare December 31, 2020, adjusting entries for the following additional information.
   1. Increase Allowance for Doubtful Accounts by $200. *Hint:* Debit Operating Expenses.
   2. Accrued income tax expense is $11,784. *Hint:* Credit Income Taxes Payable.
   3. Accrued salaries were $300.
   4. Use straight-line depreciation for equipment.
   5. Adjust Prepaid Insurance for current year expense.

e. Post adjusting journal entries from *d* to the ledger.
f. Prepare an adjusted trial balance.
g. Prepare the income statement and balance sheet.
h. Prepare the closing entries.
i. Post the closing entries to the ledger using the Income Summary account to close out revenues and expenses.
j. Prepare a post-closing trial balance.

Problem 2-55 Preparing Adjusting Entries, Trial Balances, Financial Statements, Closing, and Post-Closing Trial Balance **LO4, 5, 6, 7**

Milwaukee Corp. prepared its unadjusted trial balance dated December 31, 2020, as follows.

Unadjusted Trial Balance
December 31, 2020

Account	Debit	Credit
Cash	$ 40,000	
Accounts receivable	60,000	
Allowance for doubtful accounts		$ 6,000
Inventory	70,000	
Land	150,000	
Equipment	780,000	
Accumulated depreciation—equipment		100,000
Accounts payable		22,000
Note payable		200,000
Common stock		400,000
Retained earnings		50,000
Sales revenue		900,000
Subscription revenue		24,000
Cost of goods sold	270,000	
Lease expense	45,000	
Interest expense	12,000	
Selling expense	40,000	
Insurance expense	30,000	
Internet expense	15,000	
Salaries expense	110,000	
General and administrative expense	80,000	
Totals	$1,702,000	$1,702,000

Additional information for accounting adjustments

1. Equipment has a total estimated useful life of 14 years and an estimated residual value of $80,000. Milwaukee Corp. uses straight-line depreciation and accounts for depreciation expense as a general and administrative expense.
2. The company estimates an increase in Allowance for Doubtful Accounts of $9,000 is required in order to recognize accounts receivable of $60,000 at net realizable value.
3. The note payable requires 8% interest to be paid semiannually, every October 1 and April 1.
4. $5,000 of salaries were earned in December but not recorded or paid.
5. Internet expense represents a payment made on January 2, 2020, for two years of internet services (2020 and 2021).
6. Insurance expense represents payment made for a one-year policy, paid June 30, 2020. Coverage begins on that date.
7. Subscription revenue represents cash received for a one-and-one-half-year subscription to a journal published by Milwaukee Corp. The subscription period begins July 1, 2020.

Problem 2-57
Preparing Adjusting Entries, Trial Balances, Financial Statements, and Closing Entries **LO4, 5, 6, 7**

The unadjusted trial balance for Brown Inc. follows.

Unadjusted Trial Balance
December 31, 2020

Account	Debit	Credit
Cash	$ 6,320	
Accounts receivable	6,000	
Prepaid lease expense	19,200	
Supplies	11,000	
Equipment	20,000	
Accumulated depreciation—equipment		$ 3,000
Accounts payable		2,000
Note payable		8,000
Common stock		20,000
Retained earnings		8,000
Dividends	10,000	
Service revenue		50,000
Interest expense	480	
Salaries expense	13,000	
Utility expense	2,000	
Miscellaneous expense	3,000	
Totals	$91,000	$91,000

Additional information for accounting adjustments

1. Brown was required to pay the entire rental for a one-year lease beginning July 1 for $13,200 cash. Brown recorded the payment as a debit to Prepaid Lease Expense.
2. A year-end count revealed $2,000 of supplies still available.
3. Annual depreciation expense on the equipment is $1,000.
4. Unpaid and unrecorded salaries is $2,000 at year-end.
5. The note payable calls for annual interest of 8%, payable each September 30. The principal amount of the note is not due for several years.

Required

a. Record the required adjusting journal entries.
b. Prepare the adjusted trial balance.
c. Prepare the income statement for 2020 and the balance sheet at year-end 2020.
d. Prepare closing entries using Income Summary account to close out revenue and expenses.

Problem 2-58
Preparing Adjusting Journal Entries **LO4**

The following transactions and events for Stellar Corp. are being reviewed for possible adjusting entries at December 31, 2020 (the end of its accounting period).

1. Equipment used in operations cost $420,000; it was purchased on July 1, 2017. It has an estimated useful life of 12 years. Straight-line depreciation is used.
2. The company estimates an increase in Allowance for Doubtful Accounts of $3,000 is required to recognize accounts receivable of $300,000 at net realizable value.
3. At the beginning of 2020, office supplies amounted to $600. During 2020, office supplies of $8,800 were purchased; this amount was debited to Office Supplies Expense. An inventory of office supplies at the end of 2020 showed $400 still available. However, the January 1 balance of $600 is still recorded in the Office Supplies account.
4. On July 1, 2020, the company paid a three-year insurance premium of $2,160; this amount was debited to Prepaid Insurance.
5. On August 1, 2020, the company borrowed $120,000 cash from Shar Bank. The loan was for 12 months at 9% interest payable at maturity date.
6. On December 31, 2020, salaries earned by employees but not yet paid (or recorded) was $18,000.

7. On September 1, 2020, the company loaned $60,000 cash to another company. The loan was at 10% per year and was due in six months; interest is payable at maturity. Cash was credited for $60,000, and Note Receivable was debited on September 1 for the same amount.
8. On January 1, 2020, Shipping Supplies amounted to $200. During 2020, supplies that cost $4,000 were purchased and debited to Shipping Supplies. At the end of 2020, a physical inventory count revealed that supplies still available were $800.
9. At the end of 2020, property taxes for 2020 of $59,000 were assessed on property owned by the company. The taxes are due no later than February 1, 2021. The taxes have not been recorded on the books because payment has not yet been made.
10. The company borrowed $120,000 cash from the bank on December 1, 2020. A 60-day note payable was signed at 9% interest payable on maturity date. On December 1, 2020, Cash was debited and Note Payable credited for $120,000.
11. On July 1, 2020, the company paid the city a $1,000 license fee for the next 12 months. On that date, Cash was credited and License Expense debited for $1,000.
12. The company owns three SUVs used by its executives. A six-month maintenance contract on them was signed on October 1, 2020, whereby a local garage agreed to do "all the required maintenance." Payment was made for the following six months in advance; specifically, on October 1, 2020, Cash was credited and Repair Expense was debited for $9,600.

Required

Prepare the adjusting entry (or entries) that are necessary, if any, on December 31, 2020, for each item 1 through 12.

Problem 2-59
Preparing Adjusting Journal Entries **LO4**

Rona Company is a calendar-year manufacturer. Rona is reviewing the following transactions for possible adjusting entries at December 31, 2020.

1. One of Rona Company's liabilities is a 12%, $40,000 long-term note payable, which requires interest to be paid each March 1 and September 1.
2. Rona Company owns a $20,000, 10% bond, which it purchased at face value and which pays interest each August 1 and February 1.
3. Rona Company performed and completed services for a customer in December for a $12,000 total fee. The customer was not billed and did not remit payment in the current year. The customer has a strong credit rating.
4. Depreciation of $30,000 is to be recorded.
5. Salaries totaling $15,000 were earned but not paid or recorded at year-end. The first payroll in 2021 is expected to total $45,000.
6. Rona paid $4,800 cash for a one-year insurance policy on September 1, 2020. Rona records the full amount on September 1 as insurance expense.

Required

Prepare the adjusting entry (or entries) that are necessary, if any, on December 31, 2020, for each item 1 through 6.

Problem 2-60
Analyzing Financial Statements and Preparing Accounting Adjustments **LO4**

Fannie Corp. started operations on January 1, 2020. It is now December 31, 2020, the end of its annual accounting period and the company has just prepared the following financial statements.

Fannie Corp.
Income Statement
For Year Ended December 31, 2020

Service revenue		$100,000
Expenses		
Salaries	$30,000	
Repairs	5,000	
Service	25,000	
Other miscellaneous	10,000	70,000
Net income		$ 30,000

Numerous variations of the single-step format exist. For example, revenue items such as interest income or investment income are sometimes netted against related expenses. The key characteristic of a single-step statement is that only two broad classifications are used in determining income from continuing operations. As a result, there is no priority implied in reporting one revenue or expense item over another revenue or expense item. In **Demo 3-1**, we show both the multiple-step and the single-step income statement presentations.

NIKE [NKE]

Real World—INCOME STATEMENT PRESENTATION

NIKE Inc. reported the following consolidated statement of income in the multiple-step format in its recent Form 10-K. This is a condensed version of the income statement because it does not provide all of the details for revenues and expenses on the face of its income statement. We see that Nike provides references to where more detailed information is available.

NIKE, INC.
Consolidated Statement of Income (excerpt)
For Year Ended May 31, 2015

$ millions	2015
Income from continuing operations	
Revenues	$30,601
Cost of sales	16,534
Gross profit	14,067
Demand creation expense	3,213
Operating overhead expense	6,679
Total selling and administrative expense	9,892
Interest expense (income), net (Notes 6, 7 and 8)	28
Other (income) expenses, net (Note 17)	(58)
Income before income taxes	4,205
Income tax expense (Note 9)	932
Net income	$ 3,273

Demo 3-1 LO3-1 Multiple-Step and Single-Step Income Statement Formats

Demo MBC

The following items are taken from the adjusted trial balance of Kabella Corp., a merchandiser, on December 31, 2020. Prepare an income statement using the multiple-step and the single-step formats for the year ended December 31, 2020. Assume a tax rate of 25%.

Sales revenue	$1,000,000	Loss on sale of bond investment...	$ 1,000
Gain on sale of investment	5,000	Interest revenue	3,000
Cost of goods sold	645,000	Interest expense	5,000
Selling expenses	90,000	Research and development expense	25,000
General and administrative expenses	60,000		

continued

continued from previous page

Solution **Multiple-Step Format**

KABELLA CORPORATION
Income Statement
For Year Ended December 31, 2020

Sales revenue		$1,000,000
Cost of goods sold		645,000
Gross profit		355,000
Operating expenses		
Selling	$90,000	
General and administrative	60,000	
Research and development	25,000	
Total operating expenses		175,000
Operating income		180,000
Other revenues and gains		
Interest revenue	3,000	
Gain on sale of investment	5,000	8,000
Other expenses and losses		
Interest expense	5,000	
Loss on sale of investment	1,000	6,000
Income before income taxes		182,000
Income tax expense ($182,000 × 25%)		45,500
Net income		$ 136,500

Single-Step Format

KABELLA CORPORATION
Income Statement
For Year Ended December 31, 2020

Revenues and gains	
Sales revenue	$1,000,000
Interest revenue	3,000
Gain on sale of investment	5,000
Total revenues and gains	1,008,000
Expenses and losses	
Cost of goods sold	645,000
Selling	90,000
General and administrative	60,000
Research and development	25,000
Interest expense	5,000
Loss on sale of investment	1,000
Total expenses and losses	826,000
Income before income taxes	182,000
Income tax expense ($182,000 × 25%)	45,500
Net income	$ 136,500

We see how the multiple-step statement provides a distinction between operating and nonoperating activities while the single-step statement does not. Net income of $136,500 is the same in each statement. The single-step format has the advantage of simplicity and avoids the need to develop labels for subtotals. The multiple-step format is potentially more informative to decision makers because it highlights key items. Retailers, for example, often use a multiple-step format to report gross profit, emphasizing the relation between sales and cost of sales.

Multiple-Step and Single-Step Income Statement Formats LO3-1 REVIEW 3-1

Golden Corp.'s records show the following information at December 31, 2020, which is its accounting year-end.

Sales revenue	$450,000	Interest expense	$ 10,000
Gain on sale of investment	20,000	Loss on sale of patent	3,000
Selling expenses	35,000	Cost of goods sold	300,000
General and administrative expense	65,000		

Part One—Multiple-Step Income Statement

Using the information from Golden Corp., compute the following subtotals that are shown in a *multiple-step income statement*. Assume an income tax rate of 25%.

a. Gross profit
b. Operating income
c. Income before income taxes
d. Income tax expense
e. Net income

continued

Brief Exercise 3-24
Reporting Earnings per Share **LO3, 4**

Refer to the information in Brief Exercise 3-23. Prepare the earnings per share section of the income statement for Leigh Corp. assuming weighted average common shares outstanding for 2020 were 150,000.

Brief Exercise 3-25
Computing Earnings per Share **LO4**
Hint: See Demo 3-4A

Lee Corp. had 200,000 weighted average common shares outstanding in 2020 and 5,000 weighted average preferred shares outstanding in 2020. Lee Corp. reported net income of $450,000 in 2020, and declared and paid $50,000 and $10,000 of common stock and preferred stock dividends, respectively. Compute earnings per share for Lee Corp. for 2020.

Brief Exercise 3-26
Preparing a Statement of Comprehensive Income **LO5**
Hint: See Demo 3-5

Sanders Inc. reported net income of $550,000 for the year ended December 31, 2020. The company had a pretax unrealized holding gain on debt securities of $14,000 and a pretax loss on foreign currency translation adjustment of $40,000. The company's tax rate is 25%. Prepare a separate statement of comprehensive income beginning with *net income*.

Brief Exercise 3-27
Preparing a Retained Earnings Statement **LO6**

In 2020, Lucky Inc. reported net income of $48,000 and declared and paid a common stock cash dividend of $20,000. Assuming that the company had a beginning balance of $344,000 in retained earnings, prepare a retained earnings statement for 2020.

Brief Exercise 3-28
Reporting a Change in Estimate **LO7**

In 2020, Nordsom Corp. increased its warranty accrual by $30,000 based upon recent experiences with product returns resulting from manufacturing defects originating in 2019, but not discovered until 2020.

a. Classify the accounting change.
b. Determine the proper accounting approach.

Brief Exercise 3-29
Reporting a Change in Accounting Principle **LO7**

CostKo Corp. reported net income of $1,000,000 and $1,100,000 in 2018 and 2019, respectively. In 2020, the company changed its method of accounting for inventory from weighted average to FIFO (first-in, first-out). As a result of using the new method (FIFO), net income would have been $1,100,000 and $1,302,000 in 2018 and 2019, respectively.

a. Classify the accounting change.
b. Determine the proper accounting approach.
c. In reporting comparative income statements in 2020, what net income amounts are included for 2018 and 2019?

Brief Exercise 3-30
Reporting an Accounting Error **LO7**

An error considered material of $125,000 (net of tax) to Netbic Corp. was discovered in 2020 that originated in 2019. The error represents an overstatement of the company's previously reported revenues. Assuming an unadjusted beginning balance in retained earnings of $2,000,000, a 2020 net loss of $50,000, and that no dividends were declared or paid in 2020, prepare its statement of retained earnings for 2020. *Hint:* Adjust the beginning balance of retained earnings for the error.

Exercises

Exercise 3-31
Computing Retained Earnings and Net Income **LO1**

The following selected balance sheet amounts are from Aerial Inc. as of December 31, 2020.

Selected Balance Sheet Amounts

Assets		Liabilities	
Cash	$14,000	Accounts payable	$ 4,800
Accounts receivable	5,000	Note payable	10,000
Supplies	3,800	Stockholders' equity	
Equipment	25,000	Common stock	10,000
		Paid-in capital in excess of par	5,000

Required

a. Compute retained earnings as of December 31, 2020 assuming retained earnings is the only missing category in the selected balance sheet amounts above.
b. Determine net income assuming that the balance in retained earnings on January 1, 2020, was $2,500; dividends declared during 2020 were $4,500; and no other items affected retained earnings during 2020.

Balance Sheet Classification — LO4-1 — REVIEW 4-1

Match each account *a* through *n* with one of the 12 balance sheet classifications.

Review MBC

Balance Sheet Classification	Account
1. Current assets	____ *a.* Machinery
2. Investments	____ *b.* Income tax receivable
3. Property, plant, and equipment	____ *c.* Franchise
4. Intangible assets	____ *d.* Raw materials inventory
5. Other assets	____ *e.* Dividends payable
6. Current liabilities	____ *f.* Common stock
7. Long-term liabilities	____ *g.* Value of shares held by noncontrolling stockholders
8. Paid-in capital	____ *h.* Bonds payable
9. Retained earnings	____ *i.* Cash surrender value of life insurance
10. Accumulated other comprehensive income	____ *j.* Deferred revenue (current)
11. Treasury stock	____ *k.* Investment in IBM common stock (with intent to hold at least 1 year)
12. Noncontrolling interests	____ *l.* Noncurrent receivable (due from supplier)
	____ *m.* Paid-in capital in excess of par—common stock
	____ *n.* Foreign currency translation adjustment

More Practice: 4-40, 4-41, 4-43

Solution on p. 4-62

Prepare a classified balance sheet — LO 4-2

The **classified balance sheet** (illustrated in **Demo 4-2**) organizes accounts according to the categories listed in **Exhibit 4-2**. The primary characteristic of a classified balance sheet is the distinction made between current and noncurrent assets and liabilities.

Classified Balance Sheet
- Presents balances in asset, liability, and equity accounts
- Classifies assets and liabilities as current and noncurrent
- Allows for determination of a company's working capital

LO 4-2 Overview

210-10-05-4 The balance sheets of most entities show separate classifications of current assets and current liabilities (commonly referred to as classified balance sheets) permitting ready determination of working capital.

With current assets and current liabilities identified on a classified balance sheet, **working capital** (current assets less current liabilities) is readily determinable. Without a distinction between current and noncurrent amounts, financial statement users can only estimate working capital. The amount of working capital provides useful information to financial statement users on the company's ability to pay short term obligations when they become due as explained in the ASC definition of working capital. Ratios are discussed in more detail in Chapter 5.

ASC Glossary **Working Capital** Working capital (also called net working capital) is represented by the excess of current assets over current liabilities and identifies the relatively liquid portion of total entity capital that constitutes a margin or buffer for meeting obligations within the ordinary operating cycle of the entity.

The accounting standards provide for aggregating the information from operating segments if the segments have similar economic characteristics and are similar in each of the following areas:

- Nature of the products and services.
- Nature of the production processes.
- Type or class of customer for the products and services.
- Methods used to distribute products and services.
- Nature of the regulatory environment, if applicable.

Quantitative Thresholds for Reporting Segments

In addition to meeting the definition of an operating segment, there also are several quantitative thresholds which determine the operating segments that must be separately reported (illustrated in **Demo 4-5**). A company must report information about an operating segment if the segment meets any one of the three thresholds based on: revenue, profit or loss, and assets.

Revenue Test

Report as a segment if the reported revenue, including sales to both external and internal customers, is 10% or more of the combined revenue, internal and external, of all reported operating segments.

Operating Profit Test

Report as a segment if the absolute amount of reported profit or loss is 10% or more of the greater, in absolute amount, of:

- Combined reported profit of all operating segments that did not report a loss, or
- Combined reported loss of all operating segments that did report a loss.

Identifiable Assets Test

Report as a segment if assets are 10% or more of the combined assets of all operating segments.

Combined Revenue Test

If combined external operating segment revenues are less than 75% of total external company revenue, then additional segments must be identified. If the 75% test is not met, management must identify additional individual segments, even though they do not meet any of the three quantitative thresholds, until the 75% test is met. The segments and other business activities that are not separately reported are combined into an "all other" category for reporting purposes.

Segment Disclosures

The required quantitative information that must be disclosed for each reportable segment includes measures of: *profit or loss* and *total assets*. Along with quantitative information, a company should disclose general information about the segment including factors in determining the segment and a description of its product and service offerings. Any of the following items that are included in the measure of segment profit or loss that is reviewed by the chief operating decision maker must also be reported.

- Revenues from external customers.
- Revenues from transactions with other operating segments.
- Interest revenue.
- Interest expense.
- Depreciation, depletion, and amortization expenses.
- Any unusual items.
- Equity in the net income of investees accounted for by the equity method.

Brief Exercise 4-29
Preparing the Long-term Liabilities Section **LO2**

Prepare the long-term liabilities section of a classified balance sheet given the following account balances on December 31, 2020.

Bonds payable (due in 2026)	$100,000	Net pension liability (long-term)	$30,000
Note payable (due November 1, 2021)	5,000	Income taxes payable	21,000
Note payable (due December 31, 2025)	45,000		

Brief Exercise 4-30
Preparing the Stockholders' Equity Section **LO2**

Prepare the stockholders' equity section of a classified balance sheet given the following account balances on December 31, 2020.

Preferred stock, par $15, authorized 20,000 shares	$255,000
Cash received above par of preferred stock	25,000
Common stock, no-par, 60,000 shares issued (100,000 shares authorized)	200,000
Retained earnings	150,000

Brief Exercise 4-31
Preparing a Classified Balance Sheet **LO2**
Hint: See Demo 4-2

Prepare a classified balance sheet given the following account balances on December 31, 2020. Next, compute working capital on that same date.

Cash	$ 2,000	Accounts payable	$ 62,000
Accounts receivable	60,000	Notes payable (long-term)	70,000
Inventory	2,500	Income taxes payable	2,200
Franchise	35,000	Retained earnings	45,800
Prepaid insurance	1,200	Interest payable	700
Common stock (no-par, 10,000 shares issued and outstanding)	50,000	Equipment, net	130,000

Brief Exercise 4-32
Preparing a Classified Balance Sheet **LO2**
Hint: See Demo 4-2

Prepare a classified balance sheet given the following account balances from a post-closing trial balance dated December 31, 2020.

Account	Debit	Credit
Cash	$180,000	
Accounts receivable	215,000	
Allowance for doubtful accounts		$15,000
Inventory	103,200	
Building	220,000	
Accumulated depreciation—building		45,000
Franchise	45,000	
Accounts payable		168,000
Salaries payable		25,000
Bonds payable		210,000
Common stock		100,000
Retained earnings		199,000
Accumulated other comprehensive income		1,200
Totals	$763,200	$763,200

Brief Exercise 4-33
Determining Current Assets and Current Liabilities from Other Accounts **LO2**

Determine the missing amounts from a balance sheet dated December 31, 2020.

Missing amounts: Total current assets and Total current liabilities. There are no other missing amounts.

Given amounts: Equipment, net $27,000, Patent $6,000, Notes payable $8,000, Common stock $18,000, Retained earnings $5,000, Total liabilities $20,000

(long-term)

Brief Exercise 4-38
Classifying Statements as Items in the Form 10-K LO4
Hint: See Demo 4-4

The following items are included in the fiscal year 2017 Form 10-K of **United Natural Foods Inc.**

____ 1. Steven L. Spinner [President and CEO]: fiscal 2017 base salary, $922,500.
____ 2. As we continue to aggressively pursue new customers, expand relationships with existing customers and pursue opportunistic acquisitions, we expect net sales for fiscal 2018 to grow over fiscal 2017.
____ 3. Basic earnings per share is calculated by dividing net income by the weighted average number of common shares outstanding during the period.
____ 4. Eric F. Artz , age 49, has served as a member of the Board since October 2015.
____ 5. Net sales of $9,274, $8,470, $8,185, $6,794, $6,064, for the fiscal years of 2017, 2016, 2015, 2014, and 2013, respectively. ($ millions)

For each statement 1 through 5, indicate the Item number of the Form 10-K where the statement would be included or incorporated by reference.

Brief Exercise 4-39
Identifying Which Items are Disclosed in the Annual Report on Form 10-K LO4

In each situation, indicate whether the item is included in the annual report on Form 10-K or not.

____ *a.* Press release on a company's earnings per share
____ *b.* Management's discussion and analysis
____ *c.* Executive compensation
____ *d.* Analyst report on earnings expectations
____ *e.* Corporate tax return
____ *f.* Financial statements and accompanying notes
____ *g.* Auditors' report

Exercises

Exercise 4-40
Classifying Balance Sheet Accounts LO1

The following are classifications included on a typical classified balance sheet.

Balance Sheet Classifications

a. Current assets.
b. Investments.
c. Property, plant, and equipment.
d. Intangible assets.
e. Other assets.
f. Current liabilities.
g. Long-term liabilities.
h. Paid-in capital.
i. Retained earnings.
j. Accumulated other comprehensive income.
k. Noncontrolling interests.

Required

Use the letters *a* to *k* from the balance sheet classifications above to indicate the usual classification for each of the 22 balance sheet items listed below. Also indicate whether an account is a *contra* account.

____ 1. Accumulated depreciation.
____ 2. Bonds payable (due in 10 years).
____ 3. Accounts payable (trade).
____ 4. Investment in stock of another company (long-term holding).
____ 5. Land (in use).
____ 6. Accumulated unrealized gain on foreign currency translation adjustment.
____ 7. Office supplies inventory.
____ 8. Restricted cash (release not expected for two years).
____ 9. Accumulated income less accumulated dividends.
____ 10. Deferred revenue (short-term).
____ 11. Bond sinking fund (to retire long-term bonds).
____ 12. Prepaid insurance.
____ 13. Accounts receivable (trade).
____ 14. Short-term investment.
____ 15. Allowance for doubtful accounts.
____ 16. Building (in use).
____ 17. Common stock (par $10).
____ 18. Interest revenue earned but not collected.
____ 19. Value of shares held by noncontrolling stockholders.
____ 20. Patent.
____ 21. Land, held for investment.
____ 22. Paid-in capital in excess of par—common stock.

Exercise 4-44
Computing Missing Amounts on a Classified Balance Sheet **LO2**

The consolidated balance sheet of Mutron Lock Inc. follows.

Consolidated Balance Sheet
As of December 31, 2020

Assets			Liabilities and Stockholders' Equity		
Current assets			Current liabilities		
Cash and cash equivalents		$ 10,195	Accounts payable	$85,476	
Marketable securities		*a*	Notes payable	*e*	
Accounts receivable	$153,682		Income taxes payable	6,421	
Allowance for doubtful accounts	*b*	147,421	Current portion of long-term debt	4,893	
Inventories		201,753	Accrued expenses	5,654	
Prepaid expenses		8,902	Total current liabilities		$110,763
Total current assets		*c*	Long-term debt		122,004
Property, plant, and equipment			Deferred income taxes		*f*
Land	12,482		Pension liability		35,136
Building	*d*		Total liabilities		*g*
Equipment and machinery	195,467		Stockholders' equity		
Accumulated depreciation	(103,675)		Preferred stock, no-par value (authorized 10,000 shares, issued 2,400 shares)	*h*	
Total property, plant, and equipment		261,056	Common stock, $5 par value (authorized 400,000 shares, issued 20,000 shares)	*i*	
Investments		14,873	Additional paid-in capital	73,725	
Other assets		7,926	Total contributed capital		*j*
			Retained earnings		
			Appropriated	25,000	
			Unappropriated	*k*	181,471
			Total retained earnings and contributed capital		*l*
			Less treasury stock (3,421 shares)		21,809
			Total stockholders' equity		347,668
Total assets		$661,774	Total liabilities and stockholders' equity		$ *m*

Required

For each of the items *a* through *m*, determine the balances that appear on the complete balance sheet.

Exercise 4-45
Computing Retained Earnings and Preparing a Classified Balance Sheet **LO2**

The following data, in no particular order, are from the accounts of Brown Corp. as of December 31, 2020, its annual year-end. All amounts are accurate, all accounts have normal balances, total debits equal total credits, and all amounts are in $ thousands.

Accounts payable (trade)	$ 8	Deferred revenue	$ 2
Debt retirement fund (long-term)	4	Cash dividends payable	5
Accounts receivable	17	Inventory	30
Income taxes payable	4	Land held for future business site	18
Short-term investments, marketable securities (cost which approximates fair value)	10	Equipment and furniture	70
Bonds payable (long-term)	51	Net income for 2020	35
Accumulated depreciation, equipment and furniture	6	Dividends (cash) declared (a debit)	3
Common stock, par $1 (100,000 shares authorized)	70	Prepaid expenses (short-term)	1
Cash	20	Patent	4
Retained earnings, December 31, 2019	17	Prepaid rent (long-term)	2
Allowance for doubtful accounts	2	Investment in capital stock of Zinc Products Corporation (long-term)	26
		Premium on common stock	5

Required

a. Compute the year-end balance of retained earnings.
b. Prepare a classified balance sheet as of December 31, 2020.
c. Compute working capital on December 31, 2020.

Exercise 4-48
Correcting the Presentation of a Classified Balance Sheet **LO2**

The following draft of a balance sheet was prepared for Roslyn Corp., but includes a number of errors in classification, presentation, and computation.

Roslyn Corp.
Balance Sheet
December 31, 2020

Assets		Liabilities and Stockholders' Equity	
Cash	$ 120,000	Liabilities	
Building	565,000	Accounts payable	$ 200,000
Equipment	110,000	Note payable	177,000
Accounts receivable	241,000	Dividends payable	10,000
Investments, short-term	140,000	Deferred revenue	3,000
Inventory	325,000	Accumulated depreciation	80,000
Prepaid rent	5,000	Bonds payable	200,000
Investments, long-term	140,000	Total	670,000
Franchise	40,000	Stockholders' equity	
Total assets	$1,686,000	Common stock	475,000
		Retained earnings	555,000
		Accumulated other comprehensive income	(14,000)
		Total stockholders' equity	1,016,000
		Total liabilities and stockholders' equity	$1,686,000

Additional information

- Note payable includes interest due of $2,000. The note is due in two years and interest is due in 6 months.
- Net accounts receivable of $241,000 consists of accounts receivable of $257,000 minus an allowance for doubtful accounts of $16,000.
- Common stock includes $175,000 attributed to additional paid-in capital.
- Included in the cash balance is $20,000 of cash restricted for 9 months due to a debt covenant.

Required

Prepare a corrected classified balance sheet for Roslyn Corp. on December 31, 2020.

Exercise 4-49
Preparing a Current Asset Section along with Note Disclosures **LO2, 3**

The following selected balances are from the post-closing trial balance of WKO Inc. as of December 31, 2020.

Cash	$ 75,000	Equipment	$80,000
Investments	98,000	Accumulated depreciation	15,000
Accounts receivable	75,000	Franchise, net	15,000
Inventory	80,000	Customer deposits received in advance	4,000
Note receivable	100,000	Accounts payable	65,000

Additional information

1. Included in the cash balance is $25,000 of cash restricted for 18 months due to a debt agreement.
2. Included in investments is $28,000 of short-term investments at fair value and the remaining is long-term, also recognized at fair value.
3. 5% of the accounts receivable balance of $75,000 is estimated to be uncollectible.
4. Inventory is valued at the lower of cost or market. The cost value is determined using the average cost method.
5. The note receivable of $100,000 is due in 21 months. The interest rate is 6% and the note originated on September 30, 2020. Interest is paid quarterly with the first payment due January 1, 2021.

Required

a. Prepare the current asset section of the classified balance sheet for WKO Inc. on December 31, 2020.
b. Prepare a list of four notes, regarding all assets, to be included in the significant accounting policy note accompanying the financial statements of WKO Inc. on December 31, 2020.

Exercise 4-50
Preparing Note Disclosures for Financial Statements **LO3**

Match each of the following excerpts *a* through *i* from actual financial statements with one of the six disclosure options where we are likely to find the excerpt.

Disclosure Options

1. Disclose as a separate note on the summary of significant accounting policies.
2. Disclose as a separate note on fair value.
3. Disclose as a separate note on related parties.
4. Disclose as a separate note on subsequent events.
5. Disclose as a separate note on errors, fraud, or illegal acts.
6. Disclose as a separate note on a subject not indicated in the list above.

Financial Reporting Items

____ *a*. On February 16, 2016, VF's Board of Directors declared a quarterly cash dividend of $0.37 per share, payable on March 18, 2016 to shareholders of record on March 8, 2016. (Source: **VF Corporation** 10-K (December 31, 2015))

____ *b*. We classify time deposits and other investments that are highly liquid and have maturities of three months or less at the date of purchase as cash equivalents. (Source: **Coca-Cola Company** 10-K)

____ *c*. As of March 1, 2014, the Company retired all existing treasury stock. Upon retirement, the treasury stock balance as of March 1, 2014 was reduced for the amount originally recorded for the shares repurchased. (Source: **The Gap Inc.** 10-K [December 31, 2014])

____ *d*. The Company has an operating lease agreement with an entity controlled by the Company's CEO to lease an aircraft for business purposes. (Source: **Under Armour Inc.** 10-K)

____ *e*. The Company identified a prior period error in the classification of available-for-sale securities ("AFS") for the first and second quarters of 2015. The Company concluded that the error was not material to any of its previously issued financial statements. (Source: **Under Armour Inc.** 10-K)

____ *f*. Subsequent to fiscal year-end, the Company repurchased approximately 7.8 million shares of the Company's common stock at an average price per share of $30.15 for a total of approximately $234 million. (Source: **Whole Foods Market Inc.** 10-K)

____ *g*. During the three months ended January 31, 2015, the Company recorded a cumulative adjustment to net sales for $7.7 million related to amounts owed to a customer resulting from an incorrect calculation of contractual obligations to that customer from fiscal year 2009 through fiscal year 2014. (Source: **United Natural Foods Inc.** 10-K)

____ *h*. We review the carrying amount of long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. (Source: **The Gap Inc.** 10-K)

____ *i*. Level 3 inputs are not observable in the market and include management's judgments about the assumptions market participants would use in pricing the asset or liability. (Source: **Harley-Davidson Inc.** 10-K)

Exercise 4-51
Identifying Where Items are Disclosed in Financial Statements and Notes **LO3**
Hint: See Demo 4-3

Match each of the following financial reporting items *a* through *j* from a company with a December 31, 2020, year-end with one of the following four reporting options:

1. Disclosed as part of the summary of significant accounting policies note.
2. Disclosed as a separate note.
3. Reported on the face of the balance sheet.
4. Not reported as part of the financial statements and accompanying notes.

Financial Reporting Items

____ *a*. Separate reporting of current and noncurrent liabilities.

____ *b*. Bond issuance that took place on January 10, 2021.

____ *c*. Use of straight-line method to amortize a patent (intangible asset with a finite life).

____ *d*. Sale of property to a sibling of the CEO (Chief Executive Officer).

____ *e*. Use of the average cost method to account for inventory.

____ *f*. Management's discussion and analysis of financial condition and results of operations.

____ *g*. The balance of inventory on December 31, 2021, and 2020.

____ *h*. Explanation of how the allowance for doubtful accounts was estimated.

____ *i*. Components of pension costs and a description of assumptions used to estimate pension liability.

____ *j*. Number of shares of common stock issued and outstanding.

Noncash Revenue and Expense Adjustments

Expenses not involving cash payments are added back to net income to arrive at cash from operating activities. The more common adjustments include depreciation and amortization changes. Losses on the sale of investments, including investments in property, plant, and equipment, or the settlement of nonoperating liabilities are added back to net income because the cash effects of these transactions are classified as investing or financing activities.

Noncash revenues are subtracted from net income. One example of a noncash revenue is income accrued on a bond purchased at a discount. Gains on the sale of investments, including investments in property, plant, and equipment, or the settlement of nonoperating liabilities are reversed from net income because the cash effects of these transactions are classified as investing or financing activities.

Changes in Current Operating Assets and Current Operating Liabilities

To reconcile net income to cash provided by operating activities, increases in operating assets (other than cash) are subtracted from net income and decreases in operating assets (other than cash) are added to net income. For example, an increase in accounts receivable is subtracted from net income because the corresponding sales increased net income, but did not result in the collection of cash. A decrease in accounts receivable is added to net income because it reflects cash received from customers that was not included in income this period.

Decreases in operating liabilities are subtracted from net income, and increases in operating liabilities are added to net income. For example, an increase in accounts payable is added to net income because the corresponding expense decreased net income without affecting cash. A decrease in accounts payable is subtracted from net income because it reflects a cash payment on account but not an expense of the current period.

Cash Flows from Investing and Financing Activities

Certain activities are classified as investing and financing activities. Unlike operating activities, investing and financing cash flows are always *directly reported* in the statement of cash flows. For example, the sale of equipment is reported as a positive amount (cash inflow) while a purchase of equipment is reported as a negative amount (cash outflow) in the investing activities section. Similarly, the sale of common stock is reported as a positive amount (cash inflow) while a purchase of stock for the treasury is reported as a negative amount (cash outflow) in the financing activities section.

Financial Statement Disclosures

Noncash investing and financing activities involve an exchange of value other than cash that must be disclosed in financial statements. A transaction may involve no cash (such as settling a debt in full by issuing the company's capital stock to the creditor) or be partly in cash (such as settling a debt with 30% cash and 70% capital stock). **These noncash and part-cash activities are either reported in a separate schedule at the bottom of the statement of cash flows or disclosed in the notes.**

Additional examples of noncash transactions follow.

- Purchase of property, plant, and equipment through debt financing.
- Conversion of debt securities (bonds payable) to equity securities (common stock).
- Issuance of stock to purchase assets such as land or equipment.
- Exchange of a noncurrent asset for another noncurrent asset.

230-10-50-3 Information about all investing and financing activities of an entity during a period that affect recognized assets or liabilities but that do not result in cash receipts or cash payments in the period shall be disclosed.
230-10-50-6 If there are only a few such noncash transactions, it may be convenient to include them on the same page as the statement of cash flows. Otherwise, the transactions may be reported elsewhere in the financial statements, clearly referenced to the statement of cash flows.

In addition, a company must disclose cash paid for interest and taxes and information about restricted cash and cash equivalents. Authoritative guidance follows.

continued from previous page

Depreciation Depreciation expense ($4,000) from the income statement is not a cash flow and therefore is not disclosed in the operating section of the direct method statement of cash flows. This amount, however, appears in the reconciliation of net income and net operating cash flow.

Selling and Administrative and Interest Selling and administrative expenses of $12,000 and interest expense of $3,500 are reported on the income statement. However, the balance sheet shows no associated payable accounts. Therefore, we assume the recognized expense amounts represent cash expenditures.

Statement of Cash Flows

Following is the statement of cash flows where the operating activities section is prepared using the direct method. Notice that the net cash provided by operating activities of $19,000 is the same total when following the indirect method in **Demo 5-2**.

LAKERS INC.
Statement of Cash Flows
For Year Ended December 31, 2020

Cash flows from operating activities	
Cash received from customers	$57,000
Cash payments to employees	(22,500)
Cash payments for selling and administrative activities	(12,000)
Cash payments for interest	(3,500)
Net cash provided by operating activities	19,000
Cash flows from investing activities	
Cash paid for acquisition of plant assets	(30,000)
Cash received from sale of plant assets	21,000
Cash paid for purchase of investment	(12,000)
Net cash used by investing activities	(21,000)
Cash flows from financing activities	
Cash received from long-term debt issuance	40,000
Cash paid on long-term debt	(46,000)
Cash paid for dividends	(11,000)
Cash received from sale of common stock	48,000
Net cash provided by financing activities	31,000
Net increase in cash and cash equivalents during 2020	29,000
Cash and cash equivalents, December 31, 2019	42,000
Cash and cash equivalents, December 31, 2020	$71,000

EMC CORP. [EMC]

EMC CORP. Real World—DIRECT METHOD FOR OPERATING ACTIVITIES

EMC Corporation, a technology-based company, is involved in the growing trends of cloud computing, Big Data, mobile, social networking, and security. EMC reports the operating activities section of the statement of cash flows using the direct method.

To calculate cash payments to suppliers:

Cash payments to suppliers	
Cost of goods sold	
Add increase in inventory balance	
Subtract decrease in inventory balance	
Add decrease in accounts payable	
Subtract increase in accounts payable	
Cash payments to suppliers	

Consolidated Statements of Cash Flows

For Year Ended December 31 ($ millions)	2015
Cash flows from operating activities:	
Cash received form customers	$25,737
Cash paid to suppliers and employees	(19,312)
Dividends and interest received	100
Interest paid	(138)
Income taxes paid	(1,001)
Net cash provided by operating activities	$ 5,386

Brief Exercise 5-21
Classifying Cash Flows **LO1, 2**

Classify each of the following items as a (1) cash from operating activity, (2) cash from investing activity, (3) cash from financing activity, or (4) noncash financing and/or investing activity.

_____ *a.* Cash received from sale of common stock.
_____ *b.* Common stock issued in exchange for equipment to be used in operations.
_____ *c.* Cash paid for the acquisition of plant assets.
_____ *d.* Cash paid to employees for salaries.
_____ *e.* Refinancing a short-term note with a long-term note.
_____ *f.* Cash received from dividends on investments held.
_____ *g.* Sale of long-term investment in equity securities.

Brief Exercise 5-22
Calculating Cash Flows from Operating Activities **LO2**

Sarasota Corp. reported net income of $50,000, which included depreciation expense of $6,500. It also reported a decrease in accounts receivable and salaries payable of $3,500 and $2,000, respectively. Further, it reported an increase in inventory of $7,000 and an increase in accounts payable of $4,800. Calculate its net cash provided by operating activities.

Brief Exercise 5-23
Calculating Cash Flows from Operating Activities **LO2**

Atlas Corp. reported the following amounts for the year ended December 31, 2020. Calculate the company's net cash provided by operating activities for the year ended December 31, 2020.

Net income	$230,000	Depreciation expense	$28,000
Decrease in accounts payable	8,800	Increase in accounts receivable	13,000
Increase in prepaid rent	3,000	Increase in interest payable	1,200

Brief Exercise 5-24
Calculating Cash Flows from Investing Activities **LO2**

Gomez Corp. reported the following items for the year ended December 31, 2020. Calculate Net cash flows from investing activities for the year ended December 31, 2020.

Purchased an investment in debt securities (long-term) for cash	$ 30,000
Sold equipment for cash, previously used in operations	25,000
Paid cash for dividends	10,000
Issued common stock for cash	100,000
Retired a 10-year bond payable by repaying the face value at maturity	80,000
Sold investment in equity securities (held for one-year)	11,000
Borrowed cash by signing a nine-month note payable	15,000
Extended a loan to a customer for a building expansion	8,000

Brief Exercise 5-25
Calculating Cash Flows from Financing Activities **LO2**

Refer to the information in Brief Exercise 5-24. Calculate Net cash flows from financing activities for the year ended December 31, 2020.

Brief Exercise 5-26
Computing Ending Stockholders' Equity **LO3**

Streep Corp. is in its first year of operations and it reported the following amounts. Compute the total amount of stockholders' equity as of December 31, 2020.

Common stock, December 31, 2020	$45,000	Dividends declared and paid, 2020	$ 4,500
Other comprehensive income, 2020	5,000	Net income, 2020	18,000

Brief Exercise 5-27
Identifying Interrelations of Financial Statements **LO3**
Hint: See Demo 5-3B

When considering the interrelations of financial statements, name two specific financial statements where:

_____ *a.* Net income is reported.
_____ *b.* Retained earnings is reported.
_____ *c.* Ending cash balance for the period is reported.
_____ *d.* Accumulated other comprehensive income is reported.

Brief Exercise 5-28
Computing Return on Equity **LO4**
Hint: See Demo 5-4A

Compute return on equity from the selected 2016 balance sheet and annual income statement information of **VF Corporation** ($ millions).

Sales	$12,251	Total assets	$9,640
Net income	1,232	Average stockholders' equity	5,508

Brief Exercise 5-29
Computing Return on Equity **LO4**
Hint: See Demo 5-4B

Using DuPont analysis, compute return on equity from the following information provided for **United Parcel Service Inc.** for the year ended December 31, 2015.

Profit margin (Net income/ Sales)	8.30%
Asset turnover (Sales/ Average total assets)	1.58
Financial leverage (Average total assets/Average stockholders' equity)	15.86

Brief Exercise 5-30
Computing Liquidity and Solvency Ratios **LO5**
Hint: See Demo 5-5A

The following selected financial information is provided for **United Parcel Services Inc.** for the year ended December 31, 2015 ($ millions).

Total liabilities	$35,820	Cash	$2,730
Current liabilities	10,696	Marketable securities	1,996
Total assets	38,311	Accounts receivable	7,252
Current assets	13,208		

Compute the following ratios.

a. Current ratio *b.* Quick ratio *c.* Total liabilities-to-equity

Brief Exercise 5-31
Computing Activity Ratios **LO4**
Hint: See Demo 5-4C

The following amounts are summarized from information included in the **Whole Foods Market Inc.**'s 2015 annual report on Form 10-K ($ millions).

Sales	$15,389	Inventory, average balance	$471
Cost of goods sold	9,973	Accounts payable, average balance	286
Accounts receivable, average balance	208		

Compute the following ratios.

a. Accounts receivable turnover
b. Average days to collect receivables
c. Inventory turnover
d. Average days in inventory
e. Accounts payable turnover
f. Average days payable outstanding
g. Cash conversion cycle

Brief Exercise 5-32
Solving for Unknown Financial Statement Amounts **LO4**

Financial information for **Target Corporation** for the fiscal year ended January 30, 2016, follows ($ millions).

Sales	$73,785	Asset turnover	1.812
Profit margin	4.558%	Financial leverage	3.021

Compute the following amounts.

a. Net income
b. Average total assets
c. Average stockholders' equity
d. Return on equity

Brief Exercise 5-33
Computing Cash Flow Based Measures **LO5**
Hint: See Demo 5-5B

The following amounts are from information in the 2015 annual report of **Target Corporation** ($ millions).

Cash provided by operating activities	$ 5,140	Cash paid for capital expenditures	$1,438
Average current liabilities	12,179	Cash paid for dividends	1,362
Average total liabilities	27,240		

Compute the following ratios for 2015.

a. Current cash debt coverage *b.* Cash debt coverage *c.* Free cash flow

Brief Exercise 5-34
Performing a Vertical and Horizontal Analysis **LO6**
Hint: See Demo 5-6A, Demo 5-6B

Complete a vertical and horizontal analysis of the following income statement from Gomez Corporation.

Income Statement	2020	2019
Revenues	$50,000	$55,000
Cost of goods sold	32,000	36,000
Gross margin	18,000	19,000
Operating expenses	11,000	12,500
Net income	$ 7,000	$ 6,500

Brief Exercise 5-35
Identifying Non-GAAP and GAAP Measures **LO7**
Hint: See Demo 5-7

Whole Foods Market Inc. reported the following reconciliation in the MD&A section of its 2015 annual report on Form 10-K ($ millions).

Net cash provided by operating activities	$1,129
Development cost of new locations	(516)
Other property and equipment expenditures	(335)
Free cash flow	$ 278

a. What is the GAAP measure included in this reconciliation?
b. What is the non-GAAP measure included in this reconciliation?

Brief Exercise 5-36
Identifying GAAP and Non-GAAP Measures **LO7**

Identify each of the following items *a* through *h* as a (1) GAAP measure or (2) a non-GAAP measure.

_____ *a.* EBITA
_____ *b.* Gross profit
_____ *c.* Income from continuing operations
_____ *d.* Pro forma income statement
_____ *e.* Current assets
_____ *f.* Working capital
_____ *g.* Free cash flow
_____ *h.* Adjusted operating income

Exercises

Exercise 5-37
Classifying Items in the Statement of Cash Flows **LO1**

The following items are commonly reported in a statement of cash flows (indirect method presentation). For each item 1 through 20, determine (a) in which section the item is presented (operating [O], investing [I], or financing [F]) and (b) whether the associated dollar amount is added [A] or subtracted [S] in the statement.

_____ _____ 1. Payments of short-term debt.
_____ _____ 2. Repurchases of common stock.
_____ _____ 3. Purchases of property and equipment.
_____ _____ 4. Sale of investments classified as long-term.
_____ _____ 5. Proceeds from the issuance of common stock.
_____ _____ 6. Increase in prepaid expenses and other current assets.
_____ _____ 7. Acquisition for cash of a competitor.
_____ _____ 8. Increase in current income tax payable.
_____ _____ 9. Decrease in accounts payable.
_____ _____ 10. Dividends paid to stockholders.
_____ _____ 11. Depreciation and amortization.
_____ _____ 12. Payment of current maturities of long-term debt.
_____ _____ 13. Increase in income tax receivable.
_____ _____ 14. Decrease in inventories.
_____ _____ 15. Decrease in accounts receivable.
_____ _____ 16. Decrease in deferred revenue.
_____ _____ 17. Loss on disposal of fixed assets.
_____ _____ 18. Increase in accrued salaries and payroll taxes.
_____ _____ 19. Loss on impairment of assets.
_____ _____ 20. Acquisition of intangibles assets.

Exercise 5-38
Classifying Transactions in the Statement of Cash Flows **LO1, 2**

The following transactions are from Diaz Corp. for the year ended December 31, 2020.

_____ 1. Paid cash to acquire assets for operations.
_____ 2. Cash dividends declared but not paid.
_____ 3. Cash proceeds from note payable.
_____ 4. Sale of assets used in operations for cash.
_____ 5. Loaned cash in exchange for long-term note receivable.*
_____ 6. Purchased long-term stock investment for cash.
_____ 7. Collected cash to settle notes receivable (principal only).*
_____ 8. Purchased a patent for cash.
_____ 9. Paid salaries in cash.
_____ 10. Paid off debt by giving 60% cash and 40% treasury stock.
_____ 11. Issued common stock for cash.
_____ 12. Paid cash dividend.
_____ 13. Purchased company's own common stock for cash.
_____ 14. Paid cash to settle notes payable.
_____ 15. Sales revenue collected in cash.

* Note receivable does not relate to the financing of goods or services.

Required

Classify each of the transactions, 1 through 15, into one of the following categories, *a*, *b*, *c*, *d*, or *e*. More than one category may apply.

a. Cash inflow (outflow) from operating activities.
b. Cash inflow (outflow) from investing activities.
c. Cash inflow (outflow) from financing activities.
d. Non-cash investing or financing activity.
e. Not a cash inflow or outflow.

Exercise 5-39
Indirect Method—Preparing the Operating Activities Section **LO2**

The following data are from the accounting records of Clooney Company.

Net income (accrual basis)	$40,000	Amortization of patent	$ 100
Depreciation expense	7,800	Increase in long-term liabilities	10,000
Decrease in salaries payable	1,200	Sale of capital stock for cash	25,000
Decrease in trade accounts receivable	1,800	Accounts payable increase	4,000
Increase in merchandise inventory	2,500		

Required
Prepare the operating activities section of the statement of cash flows for Clooney Company using the indirect method.

Exercise 5-40
Indirect Method—Preparing the Operating Activities Section **LO2**

Pitt Corp. reported net income of $450,000 for the year ended December 31, 2020. Depreciation expense was $48,000 and was reported as part of operating expenses in the income statement. Following are changes in account balances from December 31, 2019, to December 31, 2020.

Increase in accounts receivable	$21,000	Increase in accounts payable	$ 8,000
Increase in inventories	75,000	Decrease in salaries payable	44,000
Decrease in prepaid insurance	12,000		

Required
Prepare the 2020 operating activities section of the statement of cash flows for Pitt Company using the indirect method.

Exercise 5-41
Indirect Method—Preparing a Statement of Cash Flows **LO2**
Hint: See Demo 5-2

Range Company has the following selected data from its annual period ended December 31, 2020.

Paid cash dividend	$10,000
Purchase of equipment	60,000
Increase in merchandise inventory	14,000
Borrowed on a long-term note	25,000
Acquired land as a future company site; paid in full by issuing 3,000 shares of Range capital stock, $10 par, when the market price per share was $15	?
Increase in prepaid expenses	3,000
Decrease in accounts receivable	7,000
Payment of bonds payable in full	97,000
Increase in accounts payable	5,000
Cash from disposal of equipment (sold at book value)	12,000
Decrease in rent receivable	2,000

Income statement	2020
Sales revenue	$400,000
Rent revenue	10,000
Cost of goods sold	(190,000)
Depreciation expense	(20,000)
Remaining expenses	(97,000)
Net income	$103,000

Required
Prepare a statement of cash flows for the Range Company for the year ended December 31, 2020, using the indirect method to report cash flows from operating activities. The beginning-year cash balance was $62,000.

Exercise 5-46
Using Interrelations of Financial Statements **LO3**

Answer each of the following separate questions. If the missing amount cannot be determined with the information given, explain what is needed to answer the questions.

a. Given comprehensive income of $43,000, and other comprehensive income of $4,000, determine net income for the same period.
b. Given accumulated other comprehensive income on January 1 of $560,000 (credit balance) and other comprehensive income for the year of $65,000 (gain), what is accumulated other comprehensive income at year-end?
c. Assuming no dividend payments, determine net income if retained earnings increased by $20,000.
d. Given an ending balance of stockholders' equity of $76,000, an ending balance in no-par common stock of $50,000, and an ending balance in retained earnings of $34,000, determine the ending balance in accumulated other comprehensive income.
e. Given the information in part *d*, can other comprehensive income for the year be determined? Why or why not?
f. If cash decreased during the year by $9,000, and ending cash totaled $5,000, determine beginning cash for the period.

Exercise 5-47
Computing and Disaggregating Return on Equity **LO4**

Following are selected balance sheet and income statement information from a recent annual report on Form 10-K for **Ralph Lauren Corporation**.

$ millions	April 2, 2016	March 28, 2015
Sales	$7,230	$7,451
Net income	396	702
Total assets	6,213	6,106
Total stockholders' equity	3,744	3,891

Required

a. Calculate Ralph Lauren's return on equity for the fiscal year ended April 2, 2016.
b. Disaggregate return on equity to its DuPont components of activity (profit margin), activity (asset turnover), and leverage (financial leverage). Demonstrate how the product of the components is equal to return on equity.

Exercise 5-48
Computing, Disaggregating, and Analyzing Return on Equity **LO4**

Selected balance sheet and income statement information follows for **American Eagle Outfitters Inc.** and **Abercrombie & Fitch Co.**

American Eagle Outfitters Inc.		
$ millions	January 30, 2016	January 31, 2015
Sales	$3,522	$3,283
Net income	218	80
Total assets	1,612	1,697
Total stockholders' equity	1,051	1,140

Abercrombie & Fitch Co.		
$ millions	January 30, 2016	January 31, 2015
Sales	$3,519	$3,744
Net income	39	52
Total assets	2,433	2,505
Total stockholders' equity	1,291	1,390

Required

a. Calculate return on equity for the fiscal year ended January 30, 2016, for each company.
b. Disaggregate return on equity to its DuPont components of profitability (profit margin), activity (asset turnover), and leverage (financial leverage) for each company. Demonstrate how the product of the components is equal to return on equity.
c. Analyze the results. What are the drivers for the differences (if any) between the ratios of the two companies?

Exercise 5-49
Computing Activity Ratios **LO4**
Hint: See Demo 5-4C

Selected balance sheet and income statement information follows for **Ralph Lauren Corporation**.

Ralph Lauren Corporation		
$ millions	April 2, 2016	March 28, 2015
Sales	$7,230	$7,451
Cost of goods sold	3,218	3,242
Accounts receivable, gross	771	906
Inventory	1,125	1,042
Accounts payable	151	210

Non-GAAP Measures: Core Operating Earnings, Core Operating Margin, and Core Earnings Per Share
Our Consolidated Financial Statements are prepared in accordance with Generally Accepted Accounting Principles in the United States of America (GAAP), which we supplement with certain non-GAAP financial information. These non-GAAP measures should not be considered in isolation or as a substitute for the related GAAP measures, and other companies may define such measures differently . . . Core operating earnings, core operating margin and core earnings per share exclude the impact of certain pension and other postretirement benefit expenses that are not allocated to business segments . . . Management uses core operating earnings, core operating margin and core earnings per share for purposes of evaluating and forecasting underlying business performance. Management believes these core earnings measures provide investors additional insights into operational performance as unallocated pension and other postretirement benefit cost primarily represent costs driven by market factors and costs not allocable to U.S. government contracts.

Required

a. What are the non-GAAP measure(s) reported?
b. What GAAP measure is used in the reconciliation to compare to the non-GAAP measure?
c. Why is this disclosure included in the MD&A section of the Form 10-K and not in the notes accompanying the financial statements?
d. Why is this non-GAAP measure reported?

Exercise 5-59
Analyzing Non-GAAP Disclosures **LO7**

The following excerpts are from the annual report on Form 10-K for **Walgreens Boots Alliance Inc.**

Excerpt 1: For Year Ended ($ millions)	2017
Operating income (GAAP)	$5,557
Cost transformation	835
Acquisition-related costs	474
Acquisition-related amortization	332
Adjustments to equity earnings in AmerisourceBergen	187
LIFO provision	166
Asset recovery	(11)
Adjusted operating income (Non-GAAP measure)	$7,540

Excerpt 2: For Year Ended ($ millions)	2017
Sales	$118,214
Cost of sales	89,052
Gross profit	29,162
Selling, general and administrative	23,740
Equity earnings in AmerisourceBergen	135
Equity earnings in Alliance Boots	—
Operating income	$ 5,557

Required

a. Where do we expect to find (1) *Excerpt One* and (2) *Excerpt Two* within the annual report on Form 10-K?
b. What is the non-GAAP measure reported?
c. What GAAP measure is used in the reconciliation in comparison with the non-GAAP measure?
d. What is the percentage difference in comparing the non-GAAP measure to the GAAP measure?
e. The largest reconciling item is cost transformation. What other term can be used for such costs?

Exercise 5-60
Analyzing Non-GAAP Disclosures **LO7**

The following excerpt is from the MD&A section of annual report on Form 10-K for **3M Company**.

Net Debt (non-GAAP measure) The Company defines net debt as total debt less the total of cash, cash equivalents and marketable securities. 3M considers net debt and its components to be an important indicator of liquidity and a guiding measure of capital structure strategy. Net debt is not defined under U.S. generally accepted accounting principles and may not be computed the same as similarly titled measures used by other companies. The following table provides net debt as of December 31, 2016 and 2015.

Table 6A-4 Present Value of an Ordinary Annuity of *n* Payments of 1 Each: $PVA = \left[\frac{1 - \{1/(1+i)^n\}}{i}\right]$

n	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	15%
1 . . .	0.98039	0.97087	0.96154	0.95238	0.94340	0.93458	0.92593	0.91743	0.90909	0.90090	0.89286	0.86957
2 . . .	1.94156	1.91347	1.88609	1.85941	1.83339	1.80802	1.78326	1.75911	1.73554	1.71252	1.69005	1.62571
3 . . .	2.88388	2.82861	2.77509	2.72325	2.67301	2.62432	2.57710	2.53129	2.48685	2.44371	2.40183	2.28323
4 . . .	3.80773	3.71710	3.62990	3.54595	3.46511	3.38721	3.31213	3.23972	3.16987	3.10245	3.03735	2.85498
5 . . .	4.71346	4.57971	4.45182	4.32948	4.21236	4.10020	3.99271	3.88965	3.79079	3.69590	3.60478	3.35216
6 . . .	5.60143	5.41719	5.24214	5.07569	4.91732	4.76654	4.62288	4.48592	4.35526	4.23054	4.11141	3.78448
7 . . .	6.47199	6.23028	6.00205	5.78637	5.58238	5.38929	5.20637	5.03295	4.86842	4.71220	4.56736	4.16042
8 . . .	7.32548	7.01969	6.73274	6.46321	6.20979	5.97130	5.74664	5.53482	5.33493	5.14612	4.96764	4.48732
9 . . .	8.16224	7.78611	7.43533	7.10782	6.80169	6.51523	6.24689	5.99525	5.75902	5.53705	5.32825	4.77158
10 . . .	8.98259	8.53020	8.11090	7.72173	7.36009	7.02358	6.71008	6.41766	6.14457	5.88923	5.65022	5.01877
11 . . .	9.78685	9.25262	8.76048	8.30641	7.88687	7.49867	7.13896	6.80519	6.49506	6.20652	5.93770	5.23371
12 . . .	10.57534	9.95400	9.38507	8.86325	8.38384	7.94269	7.53608	7.16073	6.81369	6.49236	6.19437	5.42062
13 . . .	11.34837	10.63496	9.98565	9.39357	8.85268	8.35765	7.90378	7.48690	7.10336	6.74987	6.42355	5.58315
14 . . .	12.10625	11.29607	10.56312	9.89864	9.29498	8.74547	8.24424	7.78615	7.36669	6.98187	6.62817	5.72448
15 . . .	12.84926	11.93794	11.11839	10.37966	9.71225	9.10791	8.55948	8.06069	7.60608	7.19087	6.81086	5.84737
16 . . .	13.57771	12.56110	11.65230	10.83777	10.10590	9.44665	8.85137	8.31256	7.82371	7.37916	6.97399	5.95423
17 . . .	14.29187	13.16612	12.16567	11.27407	10.47726	9.76322	9.12164	8.54363	8.02155	7.54879	7.11963	6.04716
18 . . .	14.99203	13.75351	12.65930	11.68959	10.82760	10.05909	9.37189	8.75563	8.20141	7.70162	7.24967	6.12797
19 . . .	15.67846	14.32380	13.13394	12.08532	11.15812	10.33560	9.60360	8.95011	8.36492	7.83929	7.36578	6.19823
20 . . .	16.35143	14.87747	13.59033	12.46221	11.46992	10.59401	9.81815	9.12855	8.51356	7.96333	7.46944	6.25933
21 . . .	17.01121	15.41502	14.02916	12.82115	11.76408	11.83553	10.01680	9.29224	8.64869	8.07507	7.56200	6.31246
22 . . .	17.65805	15.93692	14.45112	13.16300	12.04158	11.06124	10.20074	9.44243	8.77154	8.17574	7.64465	6.35866
23 . . .	18.29220	16.44361	14.85684	13.48857	12.30338	11.27219	10.37106	9.58021	8.88322	8.26643	7.71843	6.39884
24 . . .	18.91393	16.93554	15.24696	13.79864	12.55036	11.46933	10.52876	9.70661	8.98474	8.34814	7.78432	6.43377
25 . . .	19.52346	17.41315	15.62208	14.09394	12.78336	11.65358	10.67478	9.82258	9.07704	8.42174	7.84314	6.46415

Table 6A-5 Future Value of an Annuity Due of *n* Payments of 1 Each: $FVAD = \left[\frac{(1+i)^n - 1}{i}\right] \times (1+i)$

This table shows the future value of an annuity due of $1 at various rates of interest and for various time periods. It is used to compute the future value of a series of payments made at the beginning of each interest compounding period.

n	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	15%
1 . . .	1.02000	1.03000	1.04000	1.05000	1.06000	1.07000	1.08000	1.09000	1.10000	1.11000	1.12000	1.15000
2 . . .	2.06040	2.09090	2.12160	2.15250	2.18360	2.21490	2.24640	2.27810	2.31000	2.34210	2.37440	2.47250
3 . . .	3.12161	3.18363	3.24646	3.31013	3.37462	3.43994	3.50611	3.57313	3.64100	3.70973	3.77933	3.99338
4 . . .	4.20404	4.30914	4.41632	4.52563	4.63709	4.75074	4.86660	4.98471	5.10510	5.22780	5.35285	5.74238
5 . . .	5.30812	5.46841	5.63298	5.80191	5.97532	6.15329	6.33593	6.52333	6.71561	6.91286	7.11519	7.75374
6 . . .	6.43428	6.66246	6.89829	7.14201	7.39384	7.65402	7.92280	8.20043	8.48717	8.78327	9.08901	10.06680
7 . . .	7.58297	7.89234	8.21423	8.54911	8.89747	9.25980	9.63663	10.02847	10.43589	10.85943	11.29969	12.72682
8 . . .	8.75463	9.15911	9.58280	10.02656	10.49132	10.97799	11.48756	12.02104	12.57948	13.16397	13.77566	15.78584
9 . . .	9.94972	10.46388	11.00611	11.57789	12.18079	12.81645	13.48656	14.19293	14.93742	15.72201	16.54874	19.30372
10 . . .	11.16872	11.80780	12.48635	13.20679	13.97164	14.78360	15.64549	16.56029	17.53117	18.56143	19.65458	23.34928
11 . . .	12.41209	13.19203	14.02581	14.91713	15.86994	16.88845	17.97713	19.14072	20.38428	21.71319	23.13313	28.00167
12 . . .	13.68033	14.61779	15.62684	16.71298	17.88214	19.14064	20.49530	21.95338	23.52271	25.21164	27.02911	33.35192
13 . . .	14.97394	16.08632	17.29191	18.59863	20.01507	21.55049	23.21492	25.01919	26.97498	29.09492	31.39260	39.50471
14 . . .	16.29342	17.59891	19.02359	20.57856	22.27597	24.12902	26.15211	28.36092	30.77248	33.40536	36.27971	46.58041
15 . . .	17.63929	19.15688	20.82453	22.65749	24.67253	26.88805	29.32428	32.00340	34.94973	38.18995	41.75328	54.71747
16 . . .	19.01207	20.76159	22.69751	24.84037	27.21288	29.84022	32.75023	35.97370	39.54470	43.50084	47.88367	64.07509
17 . . .	20.41231	22.41444	24.64541	27.13238	29.90565	32.99903	36.45024	40.30134	44.59917	49.39594	54.74971	74.83636
18 . . .	21.84056	24.11687	26.67123	29.53900	32.75999	36.37896	40.44626	45.01846	50.15909	55.93949	62.43968	87.21181
19 . . .	23.29737	25.87037	28.77808	32.06595	35.78559	39.99549	44.76196	50.16012	56.27500	63.20283	71.05244	101.44358
20 . . .	24.78332	27.67649	30.96920	34.71925	38.99273	43.86518	49.42292	55.76453	63.00250	71.26514	80.69874	117.81012
21 . . .	26.29898	29.53678	33.24797	37.50521	42.39229	48.00574	54.45676	61.87334	70.40275	80.21431	91.50258	136.63164
22 . . .	27.84496	31.45288	35.61789	40.43048	45.99583	52.43614	59.89330	68.53194	78.54302	90.14788	103.60289	158.27638
23 . . .	29.42186	33.42647	38.08260	43.50200	49.81558	57.17667	65.76476	75.78981	87.49733	101.17415	117.15524	183.16784
24 . . .	31.03030	35.45926	40.64591	46.72710	53.86451	62.24904	72.10594	83.70090	97.34706	113.41331	132.33387	211.79302
25 . . .	32.67091	37.55304	43.31174	50.11345	58.15638	67.67647	78.95442	92.32398	108.18177	126.99877	149.33393	244.71197

Table 6A-6 Present Value of an Annuity Due of *n* Payments of 1 Each: $PVAD = \left[\frac{1 - (1 + i)^{-n}}{i}\right] \times (1 + i)$

This table shows the present value of an annuity due of $1 at various rates of interest and for various time periods. It is used to compute the present value of a series of payments made at the beginning of each interest compounding period.

n	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	15%
1 . . .	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
2 . . .	1.98039	1.97087	1.96154	1.95238	1.94340	1.93458	1.92593	1.91743	1.90909	1.90090	1.89286	1.86957
3 . . .	2.94156	2.91347	2.88609	2.85941	2.83339	2.80802	2.78326	2.75911	2.73554	2.71252	2.69005	2.62571
4 . . .	3.88388	3.82861	3.77509	3.72325	3.67301	3.62432	3.57710	3.53130	3.48685	3.44371	3.40183	3.28323
5 . . .	4.80773	4.71710	4.62990	4.54595	4.46511	4.38721	4.31213	4.23972	4.16987	4.10245	4.03735	3.85498
6 . . .	5.71346	5.57971	5.45182	5.32948	5.21236	5.10020	4.99271	4.88965	4.79079	4.69590	4.60478	4.35216
7 . . .	6.60143	6.41719	6.24214	6.07569	5.91732	5.76654	5.62288	5.48592	5.35526	5.23054	5.11141	4.78448
8 . . .	7.47199	7.23028	7.00205	6.78637	6.58238	6.38929	6.20637	6.03295	5.86842	5.71220	5.56376	5.16042
9 . . .	8.32548	8.01969	7.73274	7.46321	7.20979	6.97130	6.74664	6.53482	6.33493	6.14612	5.96764	5.48732
10 . . .	9.16224	8.78611	8.43533	8.10782	7.80169	7.51523	7.24689	6.99525	6.75902	6.53705	6.32825	5.77158
11 . . .	9.98259	9.53020	9.11090	8.72173	8.36009	8.02358	7.71008	7.41766	7.14457	6.88923	6.65022	6.01877
12 . . .	10.78685	10.25262	9.76048	9.30641	8.88687	8.49867	8.13896	7.80519	7.49506	7.20652	6.93770	6.23371
13 . . .	11.57534	10.95400	10.38507	9.86325	9.38384	8.94269	8.53608	8.16073	7.81369	7.49236	7.19437	6.42062
14 . . .	12.34837	11.63496	10.98565	10.39357	9.85268	9.35765	8.90378	8.48690	8.10336	7.74987	7.42355	6.58315
15 . . .	13.10625	12.29607	11.56312	10.89864	10.29498	9.74547	9.24424	8.78615	8.36669	7.98187	7.62817	6.72448
16 . . .	13.84926	12.93794	12.11839	11.37966	10.71225	10.10791	9.55948	9.06069	8.60608	8.19087	7.81086	6.84737
17 . . .	14.57771	13.56110	12.65230	11.83777	11.10590	10.44665	9.85137	9.31256	8.82371	8.37916	7.97399	6.95423
18 . . .	15.29187	14.16612	13.16567	12.27407	11.47726	10.76322	10.12164	9.54363	9.02155	8.54879	8.11963	7.04716
19 . . .	15.99203	14.75351	13.65930	12.68959	11.82760	11.05909	10.37189	9.75563	9.20141	8.70162	8.24967	7.12797
20 . . .	16.67846	15.32380	14.13394	13.08532	12.15812	11.33560	10.60360	9.95012	9.36492	8.83929	8.36578	7.19823
21 . . .	17.35143	15.87747	14.59033	13.46221	12.46992	11.59401	10.81815	10.12855	9.51356	8.96333	8.46944	7.25933
22 . . .	18.01121	16.41502	15.02916	13.82115	12.76408	11.83553	11.01680	10.29224	9.64869	9.07507	8.56200	7.31246
23 . . .	18.65805	16.93692	15.45112	14.16300	13.04158	12.06124	11.20074	10.44243	9.77154	9.17574	8.64465	7.35866
24 . . .	19.29220	17.44361	15.85684	14.48857	13.30338	12.27219	11.37106	10.58021	9.88322	9.26643	8.71843	7.39884
25 . . .	19.91393	17.93554	16.24696	14.79864	13.55036	12.46933	11.52876	10.70661	9.98474	9.34814	8.78432	7.43377

REVIEW 6-8 LO6-8 Compound Interest Table

Review MBC

Complete the following table for investments *a* through *f* by indicating the relevant factor from the present value or future value table and the final present or future value amount.

Investment	Compounding	Annual Interest Rate	Amount	Investment Period	Payment at Beg. or End of Period	Future Value or Present Value	Factor	Answer
a. Annuity	Annually	5%	$1,000	2 years	End	Future	_____	$_____
b. Annuity	Semiannually	4%	500	3 years	Beginning	Present	_____	_____
c. Annuity	Semiannually	6%	7,000	4 years	Beginning	Future	_____	_____
d. Single Payment	Annually	5%	4,500	6 years	n/a	Present	_____	_____
e. Single Payment	Semiannually	6%	8,000	5 years	n/a	Future	_____	_____
f. Single Payment	Semiannually	4%	4,800	4 years	n/a	Present	_____	_____

More Practice: 6-98

Solution on p. 6-48.

Questions

6-1. Explain what is meant by the time value of money.

6-2. Assuming that the annual rate of interest is stated as 12%, what is the interest rate for the following compounding periods: (a) semiannual, (b) quarterly, (c) monthly?

6-3. What is the fundamental difference between simple interest and compound interest?

6-4. Briefly explain each of the following:

a. Future value of $1.

b. Present value of $1.

c. Future value of annuity of *n* payments of $1 each.

d. Present value of annuity of *n* payments of $1 each.

Exercise 6-46 Computing Present Value of Annuity Payments Under Different Assumptions **LO5**

Consider the following four separate investment scenarios.

	Investment 1	Investment 2	Investment 3	Investment 4
Annual interest rate	7%	6%	5%	8%
Investment period	5 years	6 years	5 years	10 years
Compounding periods	Quarterly	Annually	Semiannually	Monthly
Payment per compounding period	$5,000	$18,000	$10,000	$1,000
First payment	Beg. of period	End of period	End of period	Beg. of period

Required

Compute the present value of the annuity stream for each of the four investment scenarios.

Exercise 6-47 Computing Present Value of a Deferred Annuity **LO5**

Hint: See Demo 6-5C

J. Johnson receives a defined retirement benefit, which commences in 15 years. At that time, Johnson is to receive monthly cash payments of $1,500 for 10 years with the first payment scheduled for the end of the initial month of benefit. Assume an interest rate of 6%.

Required

What is the value of the deferred annuity as of today? Assume annual compounding during the deferral period.

Exercise 6-48 Computing Annuity Amounts Under Different Situations **LO4, 5**

1. Julie has $25,000 in a fund that earns 10% annual compound interest. If she desires to withdraw it in five equal annual amounts, starting today (at beginning of period), how much would she receive each year?
2. Jules deposits $250 each semiannual period starting today (at beginning of period); this account earns 3% (annual rate). What is the balance in the account at the end of year 10?
3. Jill purchases a new automobile that cost $14,000. She receives a $4,000 trade-in allowance for her old auto and signs ~~an 8% note for $10,000~~. The note requires eight equal quarterly payments starting at the end of the first quarter from date of purchase. What is the amount of each payment?
4. June deposits $2,000 at the end of each year in an investment account for five years at compound interest. The fund has a balance of $12,456 at the date of the last deposit. What rate of interest did she earn?
5. On January 1, Jin owed a debt of $15,130. An agreement was reached that she would pay the debt plus compound interest in 24 monthly installments of $700, the first payment to be made at the end of January. What rate of annual interest is she paying?

a $10,000 note with a market rate of 8%.

Exercise 6-49 Computing Annuity Amounts Under Different Situations **LO4, 5**

1. Oliver Inc. plans to establish a debt retirement fund, beginning December 31, 2020. Contributions of $20,000 are made to a trustee annually, beginning December 31, 2020, so that the desired amount of $90,120 is available in four years, the date of the last payment. Compute the required interest rate that must be earned by the fund on an annual basis to satisfy these requirements.
2. Polus Inc. decides to create a plant expansion fund by making equal annual deposits of $30,000 on each January 1. Interest at 10% compounded annually is added to the fund balance each year-end. How many deposits are required to accumulate a fund of $313,077?

Exercise 6-50 Computing Present and Future Values Under Different Assumptions **LO4, 5**

Consider the following four *separate* investment scenarios.

	Investment 1	Investment 2	Investment 3	Investment 4
RATE	?%	7%	6%	1%
NPER	10	?	4	24
PV	$240,000	$10,000	$?	$24,000
PMT	$ (35,000)	$ (2,300)	$(18,000)	$?
TYPE	End of period	Beginning of period	End of period	Beginning of period

Required

Determine the unknown variables in each of the four separate investment scenarios.

Exercise 6-51 Computing Future and Present Values **LO2, 3, 4, 5**

1. What is the present value of $5,000 to be received after 5 years, discounted at 5%?
2. What is the future value of $10,000 at the end of 4 years, compounded at 6%?
3. What is the present value of equal payments of $18,000 due at the end of each of 8 periods, discounted at 5%?
4. What is the future value of equal payments of $25,000 made at the beginning of each of 5 periods, compounded at 7%?
5. What is the present value of equal payments of $20,000 made at the end of 8 periods, compounded at 6%? The payments are deferred for 3 years.

Exercise 6-52
Computing Future and Present Value Under Different Investment Assumptions **LO1, 2, 3, 4, 5**

1. If we invest $10,000 in an account at 4% interest compounded annually, what is the account balance at the end of five years?
2. We wish to accumulate an investment fund of $40,000 at the end of six years by making a single deposit now. What amount must we deposit now assuming annual compounding of 6%?
3. If we deposit $250,000 in an investment fund on January 1, which earns interest of 8% compounded annually, what annual payment can we withdraw each year over the next 20 years? Assume that our first withdrawal is at the end of the first year.
4. If we make a payment of $575 each month starting today into a fund that earns 6%, how many months does it take to accumulate $100,000? Assume monthly compounding of interest.

Exercise 6-53
Computing Future and Present Value Under Different Investment Assumptions **LO2, 3, 4, 5, 6**

1. Stone Inc. deposits $40,000 today into a special fund that is needed at the end of six years. A financial institution serves as the fund trustee and pays 10% interest on the fund balance. Compute the fund balance at the end of year 6 assuming annual compounding.
2. On January 15, 2020, Southwest Inc. adopts a plan to accumulate funds for environmental improvements on July 2, 2024, at an estimated cost of $2,000,000. Southwest plans to make four equal annual deposits in a fund that earns interest at 10% compounded annually. The first deposit is made on July 1, 2020. Compute the amount of the annual deposit.
3. Hanks Inc. establishes a debt retirement fund to retire debt of $72,820. Hanks makes three equal annual contributions of $20,000, starting on January 1, 2020. The fund earns interest at 10%, compounded annually. The $72,820 debt must be paid on December 31, 2022. What is the balance of the fund at the end of 2022?
4. Gold Inc. invests $10,000 today in a mutual fund. Gold anticipates leaving this fund alone for 12 years. The fund is increased each year-end by specified compound interest rates as follows: years 1 to 4 inclusive, 8%; 5 to 8 inclusive, 9%; and 9 to 12 inclusive, 10%. Compute the fund balance at the end of year 12.

Exercise 6-54
Determining Present Value of Annuities, Deferrals **LO5**

For the following separate annuity streams *A* through *F*, complete the table by indicating the present value amount of the annuity stream.

Investment	Frequency of Payments	Annual Interest Rate	Payment	Number of Payments	Beginning or End of Period Payment	Deferral of Annuity Payment	Present Value Amount
Annuity A.	Annually	5%	$(5,000)	4	End	n/a	$_____
Annuity B	Annually	6%	(3,500)	8	Beginning	n/a	_____
Annuity C	Annually	7%	(10,000)	6	End	2 years*	_____
Annuity D	Semiannually	5%	(1,400)	10	End	n/a	_____
Annuity E	Semiannually	6%	(7,500)	8	Beginning	n/a	_____
Annuity F	Semiannually	7%	(12,000)	4	End	2 years**	_____

*Assume annual compounding during the deferral period.

**Assume semiannual compounding during the deferral period.

Exercise 6-55
Determining Selling Prices of Bonds Under Different Interest Assumptions **LO6**

Olay Inc. issues $100,000, 8%, 10-year bonds payable on January 1, 2020. Calculate the selling price of the bonds under the following separate assumptions.

a. The bonds pay cash interest annually ($8,000) and the market rate of interest on similar bonds is 10%.
b. The bonds pay cash interest annually ($8,000) and the market rate of interest on similar bonds is 8%.
c. The bonds pay cash interest annually ($8,000) and the market rate of interest on similar bonds is 6%.
d. The bonds pay cash interest semiannually ($4,000) and the market rate of interest on similar bonds is 10%.
e. The bonds pay cash interest semiannually ($4,000) and the market rate of interest on similar bonds is 8%.
f. The bonds pay cash interest semiannually ($4,000) and the market rate of interest on similar bonds is 6%.

Exercise 6-56
Determining Asset Cost When Paying with Cash and Notes Payable **LO6**

Ked Inc. purchases equipment, which has a cash price of $6,726. Terms are arranged for a $2,000 cash down payment plus payment of the remaining $4,726, plus 15% compound interest per annum, through three equal payments. The purchase occurs on January 1, 2020, and the three payments occur on each December 31 thereafter.

Required

a. Compute the amount of each annual payment.
b. What does Ked record for the cost of equipment?
c. What total amount of interest was paid?

Exercise 6-57 Computing Annuity Amounts to a Debt Retirement Fund **LO6**

On January 1, 2020, Chang Inc. establishes a bond sinking fund (a bond retirement fund) amounting to $100,000. A trustee has agreed to handle the fund and to increase it each year on a 10% annual compound interest basis. Chang is to make equal annual contributions to the fund during the next four years, starting in 2020.

Required

a. Compute the amount of the required annual deposits assuming payments begin on December 31, 2020.

b. Compute the amount of the required annual deposits assuming payments begin on January 1, 2020.

Exercise 6-58 Computing the Annual Debt Payments **LO6**

On September 1, 2020, Sault Inc. incurs a $60,000 debt. Arrangements are made to pay this debt in three equal annual installments starting immediately at compound interest of 10%.

Required

a. Is this an ordinary annuity or an annuity due?

b. Compute the amount of the equal annual payments.

c. Compute the annual payment assuming the payments are made annually at the end of each annual period beginning on September 1, 2021.

Exercise 6-59 Computing the Annual Lease Payments **LO6**

On January 1, 2020, Alpha Inc. leased equipment to Omega Company. Selected information for Alpha relating to the lease follows.

Lease term . . . . . 10 years (expected life of the equipment)
Lease payments . . . Due annually on January 1, beginning immediately on January 1, 2020
Lease liability. . . . . $85,000 (at lease inception)
Interest rate. 10%

Required

Determine the annual lease payment charged by Alpha Inc.

Exercise 6-60 Computing the Exchange Price for an Asset Sale **LO6**

On April 1, 2020, Linden sold a patent to Bell Company in exchange for a $100,000 noninterest-bearing note due on April 1, 2021. There was no established exchange price for the patent, and the note had no ready market. The prevailing rate of interest for a note of this type at April 1, 2020, was 9%. The collection of the note receivable from Bell is reasonably assured.

Required

Calculate the amount that Linden should record as note receivable and sales revenue on April 1, 2020.

Exercise 6-61 Computing the Value of a Pension Agreement and Interest **LO6**

On January 1, the Wiek Company contracted with its president, J. May, to make a single deposit immediately to establish a fund with a trustee that pays May $40,000 per year for each of the three years following retirement. May will retire in 10 years on December 31, and the three equal annual payments are to be made by the trustee each December 31 starting in the 11th year. The trustee will add to the fund 8% annual compound interest each year-end. The fund is to have a zero balance on December 31, immediately after the last payment in May.

Required

a. Compute the present value of the pension obligation.

b. How much of the total amount paid to May during the payout period is provided by interest earned during that time?

Exercise 6-62 Applying Present Value in Deciding to Lease or Buy **LO6**

Express Inc. is considering whether to lease or buy equipment with a useful life of 10 years. If the company were to purchase the equipment, it would cost $25,000 upfront. However, if the company were to lease the equipment, the lease payment would be $4,500 annually, with the first payment due immediately. Considering a 10% interest rate, which alternative, lease or buy, is recommended?

Exercise 6-63 Computing Present and Future Values Under Different Assumptions **LO4, 5**

Complete the following table by solving for the present value in each of the separate cases. In each case, one variable changes from the original scenario.

	Original	Increase Interest Rate	Increase Periods	Increase Payment	Beginning of Period
RATE . . .	8%	**10%**	8%	8%	8%
NPER . . .	10	10	**8**	10	10
PMT	$(50,000)	$(50,000)	$(50,000)	**$(75,000)**	$(50,000)
PV.	$?	$?	$?	$?	$?
FV.	$ 0	$ 0	$ 0	$ 0	$ 0
TYPE . . .	0	0	0	0	**1**

Brief Exercise 7-40
Identifying a Contract Modification **LO7**

A wholesaler enters into a contract with a retailer to sell 5,000 distinct items of merchandise for $25,000 ($50 per item) over a 12-month period. The parties to the contract modify the agreement after 6 months to sell an additional 200 items for $60 each. The $60 per unit price of the additional items represents the standalone selling price of these items on the date of the modification.

a. Would the change to the agreement be accounted for as (1) a new separate contract with no change to the original contract or (2) a new contract after terminating the original contract?

b. Would the answer to part *a* change if the $60 per unit price for the additional distinct items did not represent the standalone selling price?

Brief Exercise 7-41
Identifying Accounting Treatment for Contract Modifications **LO7**

Match each of the contract modifications *a* to *c* with the proper accounting treatment, 1 through 3.

Accounting treatment

1. New separate contract with no change to original contract
2. Termination of original contract and creation of a new combined contract
3. Cumulative catch-up adjustment with no new contract

Contract modifications

____ *a.* Contract modification of distinct goods not reflective of standalone selling prices.
____ *b.* Contract modification of non-distinct goods.
____ *c.* Contract modification of distinct goods at standalone selling prices.

Brief Exercise 7-42
Timing of Revenue Recognition on Bill-and-Hold Arrangement **LO8**
Hint: See Demo 7-8A

On June 5, 2020, Quantum Corp. sold 500 units to a manufacturer. Payment is due in 30 days according to the normal credit arrangements with this customer. However, the units will not be shipped to the manufacturer for 2 to 6 weeks due to an unexpected change in the manufacturer's production schedule. Quantum Corp. has isolated the units in its storage facility and will ship the items when the manufacturer can accommodate the items. If the units were shipped to the manufacturer on July 6, 2020, when would Quantum Corp. recognize revenue?

Brief Exercise 7-43
Recognizing Revenue on Consignment Arrangement **LO8**

A magazine distributor ships a supply of weekly issues to a chain of grocery stores on March 1, 2020. The grocery chain will receive a 20% commission on any magazines sold. Any magazines not sold at the end of the week are returned to the distributor at the same time that the inventory of the next weekly issue is dropped off at the grocery store. At what point in the process does the distributor recognize revenue?

Brief Exercise 7-44
Classifying Repurchase Arrangements **LO8**

Indicate how each of the following contractual arrangements would be treated for accounting purposes: (1) leasing agreement, (2) financing agreement, or (3) sale with the right of return.

____ *a.* Contract obligates the seller to repurchase merchandise sold to a customer where the repurchase price is greater than the original selling price.
____ *b.* Contract obligates the seller to repurchase merchandise sold to a customer where the repurchase price is less than the original selling price.
____ *c.* Contract gives the right to the seller to repurchase merchandise sold to a customer where the repurchase price is less than the original selling price.
____ *d.* Contract gives the right to the seller to repurchase merchandise sold to a customer where the repurchase price is equal to the original selling price.
____ *e.* Contract gives the right to the customer to obligate the seller to repurchase merchandise sold to the customer where the repurchase price is less than the expected market value.
____ *f.* Contract gives the right to the customer to obligate the seller to repurchase merchandise sold to the customer where the repurchase price is greater than the expected market value and greater than the original selling price.

Brief Exercise 7-45
Recording Principal and Agent Revenue Entries **LO8**
Hint: See Demo 7-8D

Travel-by-Air Inc. sells discounted airline tickets to travelers on three major airlines. The discounted airfares are established by the airline companies that fulfill the promised flights. After purchase, customers must contact the airline companies directly for changes to or questions about their airline tickets. The customer pays for the airline ticket through the website of Travel-by-Air. Travel-by-Air forwards the payment for the airline tickets to the airlines less a 10% commission fee. In August of 2020, Travel-by-Air collected cash from customers totaling $40,000, and forwarded $36,000 (fees collected less commission) to the airlines. Prepare the entry recorded by Travel-by-Air Inc. to (a) recognize revenue, and (b) remit payment to the airlines.

c. Only 25% of the coupons were redeemed during the redemption period on qualifying purchases of $18,500. Record the entry for the redemption of the coupons, ignoring the cost entries.

d. If the coupon offered were instead 20% on purchases of $30 or more (otherwise, same facts as before), how would the answers change to parts *a* and *b*, if at all?

Exercise 7-56
Determining the Transaction Price for a Revenue Contract **LO4**

A contractor enters into a revenue contract with a customer to build customized equipment for $100,000 with a performance bonus of $55,000 that will be paid based on how quickly the equipment is completed. The amount of the performance bonus decreases by 15% of the original bonus per week for every week beyond the agreed-upon completion date. The contractor has had experiences with similar contracts and thus has the data to predict the timing of completion of the contract. Therefore, the contractor concludes that the expected value method is the best predictor of revenue. The contractor estimates that there is a 65% probability that the contract will be completed by the agreed-upon completion date, a 25% probability that it will be completed one week late, and a 10% probability that it will be completed two weeks late.

Required

Determine the transaction price for revenue recognition for the contractor.

Exercise 7-57
Determining the Transaction Price for a Revenue Contract **LO4**
Hint: See Demo 7-4A

A contractor enters into a revenue contract to construct customized equipment for a customer. The contract price is $100,000 plus a $50,000 bonus if the customized equipment is completed by a specified date. The contract is expected to take three years to complete. The contractor has extensive experience in building customized equipment. The award fee is paid only if the customized equipment is completed by the agreed upon date. Otherwise, the contractor receives no bonus. The contractor estimates that it is 80% likely that the contract will be completed successfully and in advance of the target date.

Required

Determine the transaction price for revenue recognition for the contractor.

Exercise 7-58
Determining the Transaction Price for a Revenue Contract **LO4**

Equipment Inc. sells machinery to a customer for $1 million payable in 6 months. At the inception of the contract, Equipment Inc. believes that it is likely that the customer will not pay the full contract price due to a possible price concession. Equipment Inc. has been offered up to a $250,000 price concession if it provides demonstrations of the equipment to potential customers of Equipment Inc. Equipment Inc. estimates that the customer will pay at least $750,000, which is sufficient to cover Equipment Inc.'s cost of sales. Equipment Inc. is interested in the contract and thus willing to accept the lower contract price because it wants to grow its presence in this market. Equipment Inc. concludes it is probable it will collect $750,000.

Required

Determine the transaction price for revenue recognition for the seller.

Exercise 7-59
Measuring the Transaction Price **LO4**

The following are separate revenue contract scenarios.

1. Loyola Inc. sells $50,000 of inventory during the year to customers for $100,000. Loyola Inc. accepts returns up to 3 months after the date of purchase. Loyola estimates returns to be 6% of sales.
2. Nakoma Corp. sells product offering a retroactive volume discount on certain cumulative sales volumes as follows: 0 to 500 units cost $10 each; 501 to 1,000 units cost $9 each; 1,001 units and beyond cost $8 each. For Nakoma's largest customer, Nakoma estimates the likelihood of cumulative purchases for the year as follows: 15% for 400 units, 50% for 800 units, and 35% for 1,200 units. The revenue contract stipulates that the price per unit of product will be adjusted retroactively once specified sales volumes are met. Cumulative sales to Nakoma's largest customer were 200 units in the first quarter.
3. Spectrum Inc. is entering into a revenue contract with a new customer for $20,000. Spectrum agrees to pay an up-front fee of $2,500 to the new customer in order to obtain the new contract as a way to compensate the customer for additional up-front processing costs. This payment is not associated with any distinct goods or services.
4. Lakeside Inc. enters into a revenue contract with a customer to provide services. Under the contract, Lakeside will receive a $10,000 bonus (beyond the established fees of $72,000) if the services are completed by the established date and within the required specifications. Based on Lakeside's history of completing past contracts, Lakeside estimates that the most likely amount of the bonus is $10,000.
5. Atlanta Inc. enters into a revenue contract with a customer to provide services. Under the contract, Atlanta Inc. will receive 100 shares of the customer's common stock ($1 par value per share). At the contract's inception, the stock is trading on an exchange at $25 per share.

d. Assume instead that Smith has the option to require Miller to buy back the equipment after one year for $58,850 (an amount greater than the expected market value of the equipment at that time). How would the answers to parts *a* and *b* change (if at all)?

Exercise 7-77
Recording Revenue and Receivables Under a Consignment Arrangement **LO8**
Hint: See Demo 7-8B

On March 15, 2020, Drexel Corp. provides goods to a retailer through consignment where Drexel Corp. retains ownership of the goods until the goods are sold to the retailer's customer. Sale to the final customer is documented when the goods are scanned at the cash register of the retailer. Drexel Corp. receives a daily report on the number of units sold by the retailer to the end customer. Any unsold product can be returned to Drexel Corp. at any time. Drexel Corp. has the right through the contract to recall any goods shipped and to transfer the goods to another retailer as a way to increase the rate of sales to the final customer. After the sale of the products to the final customer, the retailer cannot return the items to Drexel Corp. During March of 2020, Drexel Corp. transferred 1,200 units to the retailer, and the retailer sold 1,000 units. The product cost Drexel Corp. $80 per unit and the product was sold for $115 per unit to the end customer. The retailer sent a payment to Drexel Corp. for the cash collected on the sale of product less a 10% commission on April 7, 2020.

Required

a. At what point should Drexel Corp. recognize revenue? Explain.
b. Record Drexel's entries on March 15, 2020, March 31, 2020, and April 7, 2020.

Exercise 7-78
Determining Type of Revenue Arrangement and the Timing or Amount of Revenue Recognized **LO8**

Answer the requirements for each of the following separate revenue arrangements.

a. On December 31, 2020, Quality Wholesalers Inc. sold merchandise to a retailer with payment terms net 30. The merchandise is clearly segregated in Wholesalers Inc.'s distribution center, ready for shipment to the customer, but the units are not scheduled to ship until March 1, 2021 (or earlier if requested by retailer). Due to structural damage from a fire at one of the retailer's locations, the retailer does not currently have the capacity to hold the merchandise, but would like to have the merchandise available if needed. Determine (1) the type of complex revenue arrangement, and (2) the date that Quality Wholesalers Inc. should record the sale of the merchandise to its customer.

b. On February 1, 2020, Atlanta Inc. sells equipment to Raleigh Inc. for $200,000. As stipulated in the revenue contract, Raleigh Inc. can sell back the equipment on December 31, 2020, for $15,000. (The expected value of the equipment at that time is $20,000.) The relevant interest rate is 7%. Determine (1) the type of complex revenue arrangement, and (2) the amount of revenue that Atlanta Inc. should record on February 1, 2020.

c. On April 1, 2020, Container Store Inc. shipped merchandise to Office Plus Inc. with a sales value of $15,000. Container Store Inc. entered into a contract with Office Plus Inc. in which it only is responsible for purchasing the merchandise that it ultimately sells to its customers. Any unsold merchandise can be returned to Container Store Inc. at no cost to Office Plus Inc. and Container Store Inc. can request return of merchandise held by Office Plus Inc. at any time. For the month of April, Office Plus Inc. sold $10,000 of the shipped merchandise and paid Packaging Plus Inc. for the purchase electronically on April 30, 2020. Determine (1) the type of complex revenue arrangement, and (2) the amount of revenue that Container Store Inc. should record in April 2020.

d. MyTickets Inc. facilitates the purchase of concert tickets to customers through its vast social media network. MyTickets Inc. has access to blocks of tickets from a large number of vendors that are advertised through its network. When a customer purchases a ticket, MyTickets Inc. electronically forwards the payment to the vendor, less a commission of 15%. Any issues with the performances associated with the tickets are managed by the vendors. In March of 2020, MyTickets Inc. sold tickets worth $45,000, of which $8,000 of the concerts have not yet taken place. Determine (1) the type of complex revenue arrangement, and (2) how much revenue MyTickets Inc. reports in March of 2020.

Exercise 7-79
Accounting for Contract (Commission) Costs **LO9**

Alexis Inc. pays commissions to sales agents for initial sales of 18-month contracts for product purchases. The cost of commissions will be recovered over the contract period. Alexis Inc. concludes that the commission payment is an incremental cost of obtaining the contract and recognizes an asset for the commissions paid.

Required

a. What period of time should Alexis Inc. use to amortize the commission costs? Explain.
b. If instead the contract was a 12-month contract, would the accounting treatment for commission costs change assuming that the cost of commissions will be recovered over the contract period? Explain.
c. How would our answer to *a* change if Alexis instead concluded that the cost of commissions would not be recovered over the contract period?

continued from previous page

d. Home Store recognizes the following amounts in its income statement for the month ended June 30, 2020.

Financial Statement Presentation of Revenue—Net Method

Income Statement—Excerpt For Month Ended June 30, 2020	
Sales revenue	$980
Sales discounts forfeited	10
Total revenue	$990

Under both the gross and net methods, the total amount of revenue recognized for the month is identical ($990). However, the composition of revenue differs. Net sales revenue is higher under the gross method at $990 compared to $980 under the net method. Sales discounts forfeited of $10 is only recorded under the net method. As a result, gross margin (sales revenue less cost of goods sold) will be higher under the gross method by $10.

Comparing the Gross and Net Methods on Accounting for Discounts

Both the gross and net methods are used in practice. However, the gross method is more frequently seen. Both methods result in identical financial statements. Evidence published in *The Review of Financial Studies* points out that a little under half of cash discounts are forfeited. This means that neither method is markedly more reflective of practice than the other. Further, with typically short collection periods on receivables, the likelihood of any material difference in financial statement accounts arising between the gross and net method at any point in time is low.

Both methods do require year-end adjustments. Under the gross method, a company records an adjusting entry at period-end to *reduce* accounts receivable and revenue by the cash discounts expected to be executed in the next period on sales extending from the current period. Under the net method, a company records an adjusting entry at period-end to *increase* accounts receivable and revenue by the cash discounts expected to be forfeited in the next period on sales extending from the current period.

EXPANDING YOUR KNOWLEDGE **Incentive to take Cash Discounts?**

A cash discount can be an incentive to pay early even when a percentage of, say, 2% does not seem large. Assume a company purchases merchandise with a $1,000 gross sales price on 2/10, n/30 terms. The company decides to pay on the 30th day following the sale, meaning it pays $1,000 without advantage of the $20 cash discount. This decision to delay payment cost $20, which is an annualized interest rate of 37.2%. The $20 "interest," or amount of discount lost, is slightly over 2% of $980, the amount that would have satisfied the seller if paid within the discount period. *This rate was paid for a borrowing period of 20 days.* The factor 365/20 represents the number of 20-day periods in a year, which yields the annualized rate.

$$\frac{0.02 \times \$1{,}000}{\$980} \times \frac{365 \text{ days}}{20 \text{ days}} = 37.2\%$$

Gross Method versus Net Method in Recording Cash Discounts **LO8-2** **REVIEW 8-2**

On January 1, 2020, Vitamin Water Inc. sold merchandise for $2,800 on credit terms 2/10, n/45.

Required

Ignore cost of sales entries for all of the following requirements.

a. Under the *gross method*, record (1) the sales transaction on January 1, 2020, and (2) the collection of the account, assuming collection took place on January 5, 2020.

b. Under the *gross method*, record (1) the sales transaction on January 1, 2020, and (2) the collection of the account, assuming collection took place on January 25, 2020.

c. Under the *net method*, record (1) the sales transaction on January 1, 2020, and (2) the collection of the account, assuming collection took place on January 5, 2020.

d. Under the *net method*, record (1) the sales transaction on January 1, 2020, and (2) the collection of the account, assuming collection took place on January 25, 2020.

More Practice:
8-18, 8-19, 8-35, 8-36
Solution on p. 8-70.

continued from previous page

a. Sale of Merchandise

2020—To record sale of merchandise

Accounts Receivable	1,000,000	
Sales Revenue		1,000,000
Cost of Goods Sold	650,000	
Inventory		650,000

Assets	=	Liabilities	+	Equity
+1,000,000				+1,000,000
Accounts Rec				Sales Rev
1,000,000				1,000,000

Assets	=	Liabilities	+	Equity
−650,000				−650,000
Inventory				COGS
650,000				650,000

b. Actual Returns

2020—To record actual return of merchandise

Sales Returns	16,000	
Cash (or Accounts Receivable)		16,000

Assets	=	Liabilities	+	Equity
−16,000				−16,000
Cash or Rec				Sales Returns
16,000				16,000

2020—To record cost of sale returns

Inventory ($16,000 × 0.65)	10,400	
Cost of Goods Sold		10,400

Assets	=	Liabilities	+	Equity
+10,400				+10,400
Inventory				COGS
10,400	650,000			650,000 10,400

c. Estimated Returns at Year-End

December 31, 2020—To record an estimate of future returns

Sales Returns ($20,000 − $16,000)	4,000	
Refund Liability		4,000

Assets	=	Liabilities	+	Equity
		+4,000		−4,000
		Refund Liab		Sales Returns
		4,000		16,000 4,000

December 31, 2020—To record cost of estimated returns

Inventory—Estimated Returns	2,600	
Cost of Goods Sold ([$20,000 × 0.65] − $10,400)		2,600

Assets	=	Liabilities	+	Equity
+2,600				+2,600
Inv—Est Returns				COGS
2,600				650,000 10,400 2,600

As an aside, some academics have suggested using an account such as **Allowance for Sales Returns** (a contra Accounts Receivable account) instead of **Refund Liability** if the sales amount for the return is associated with outstanding accounts receivable.

TARGET

Real World—ESTIMATING SALES RETURNS

TARGET [TGT]

Target Corporation recognizes revenues net of estimated returns as indicated by the following accounting policy note accompanying its financial statements in its recent Form 10-K.

> Our retail stores generally record revenue at the point of sale . . . Guests may return national brand merchandise within 90 days of purchase and owned and exclusive brands within one year of purchase. Revenues are recognized net of expected returns, which we estimate using historical return patterns as a percentage of sales and our expectation of future returns.

Accounting for Sales Returns LO8-3 REVIEW 8-3

Vitamin Water Inc. recognized sales of $28,000 on account (with a cost of $16,800, or 60% of sales) for the year ended December 31, 2020. During 2020, the company recorded actual returns of $800. The company estimates returns at 4% of current year sales. Assume January 1, 2020, balances of $130 Cr. and $78 Dr. in the accounts Refund Liability and Inventory—Estimated Returns, respectively.

Review MBC

Required

a. Prepare the journal entry to record sales in 2020.

b. Prepare the journal entry to record actual returns in 2020.

c. Prepare the journal entry to record estimated returns on 2020 sales on December 31, 2020.

More Practice: 8-20, 8-37, 8-38
Solution on p. 8-70.

continued from previous page

December 1, 2020—To record purchase of receivables by factor

Accounts Receivable	200,000	
Payable to Largo (0.10 × $200,000)		20,000
Financing Revenue (0.12 × $200,000)		24,000
Cash ($200,000 − $20,000 − $24,000)		156,000

Assets = Liabilities + Equity
+200,000 +20,000 +24,000
−156,000

Accounts Rec		Payable to Largo	
200,000			20,000

Cash		Financing Rev	
	156,000		24,000

December 1, 2020—To record allowance related to purchased receivables

Bad Debt Expense	1,500	
Allowance for Doubtful Accounts		1,500

Assets = Liabilities + Equity
−1,500 −1,500

AFDA		Bad Debt Exp	
	1,500	1,500	

Sale of Accounts Receivable with Recourse

When receivables are factored with recourse, the seller bears the risk and cost of bad debts. The finance company has recourse against the seller in the event of default by the original customer. The value of the recourse is estimated as a **recourse liability**.

Sale of Receivables With Recourse

LO8-6 **Demo 8-6C**

On December 1, 2020, Largo Inc. factors with recourse $200,000 of accounts receivable with a finance company. The factor charges a 6% finance fee and retains an amount equal to $10,000 of the accounts receivable for sales adjustments. Because the sale is with recourse, the fees and charges are lower. Largo estimates its recourse liability for bad debts to be $3,000 (an estimate for bad debts has not yet been recorded).

a. Record Largo's entry for the transfer of receivables on December 1, 2020, assuming that the arrangement qualifies as a sale.
b. Record the factor's entry for the transfer of receivables on December 1, 2020.

Solution

a. The entry to record the transfer by Largo follows.

December 1, 2020—To record sale of receivables by Largo Inc.

Cash ($200,000 − $10,000 − $12,000)	178,000	
Receivable from Factor	10,000	
Loss on Sale of Receivables ([0.06 × $200,000] + $3,000)	15,000	
Recourse Liability		3,000
Accounts Receivable		200,000

Assets = Liabilities + Equity
+178,000 +3,000 −15,000
+10,000
−200,000

Cash		Recourse Liab	
178,000			3,000

Rec from Factor		Loss on Sale of Rec	
10,000		15,000	

Accounts Rec	
Bal. 200,000	200,000

b. The entry to record the transfer by the factor follows.

December 1, 2020—To record purchase of receivables by factor

Accounts Receivable	200,000	
Payable to Largo		10,000
Financing Revenue (0.06 × $200,000)		12,000
Cash ($200,000 − $10,000 − $12,000)		178,000

Assets = Liabilities + Equity
+200,000 +10,000 +12,000
−178,000

Cash		Payable to Largo	
	178,000		10,000

Accounts Rec		Financing Rev	
200,000			12,000

T-MOBILE [TMUS]

Real World—SALE OF RECEIVABLES

T-Mobile US Inc. is a wireless company in the U.S., currently providing wireless communications services, including voice, messaging and data, to over 55 million customers in the postpaid, prepaid, and wholesale markets. In a recent Form 10-K, T-Mobile described its treatment of receivables sold along with a two-year factoring arrangement "to sell certain service accounts receivable on a revolving basis with a current maximum funding limit of $640 million, subject to change upon notification to certain third parties. Sales of receivables occur daily and are settled on a monthly basis."

Factoring Arrangement—Sales of Receivables The sales of receivables through the factoring arrangement are treated as sales of financial assets. Upon sale, T-Mobile derecognizes the receivables, as well as the related allowances, and recognizes the net proceeds in cash provided by operating activities. As of December 31, 2014, T-Mobile derecognized net receivables of $768 million through the factoring arrangement. For the year ended December 31, 2014, T-Mobile received net cash proceeds of $610 million. The proceeds were net of a receivable for the remainder of the purchase price ("deferred purchase price"), which is received from collections on the service receivables. T-Mobile recognizes the deferred purchase price in cash provided by operating activities due to the short duration of the receivables sold and the nature of the related activity. The deferred purchase price represents a financial asset that can be settled in such a way that T-Mobile may not recover substantially all of its recorded investment due to the creditworthiness of customers. As a result, T-Mobile elected at inception to classify the deferred purchase price as a trading security carried at fair value with unrealized gains and losses from changes in fair value included in selling, general and administrative expense.

Discounting a Note Receivable

Just as we saw with accounts receivable, a company may sell a note receivable to a factor such as a financial institution, or otherwise use a note receivable as collateral for a loan, in order to obtain immediate access to cash. A sale of a note to a factor is called **discounting**. The factor charges a finance fee for the transaction.

Demo 8-6D **LO8-6** **Discounting a Note Receivable**

Demo MBC

On April 1, 2020, Wyoming Inc. received a $3,000, 6%, one-year note from a sale of equipment to Neilson Company. Interest on the note is due at maturity. Wyoming discounted the note on August 1, 2020, with recourse to a bank. Assume that the discounting qualifies as a sale and that the bank charges an 8% fee on the maturity value of the note. Prepare Wyoming's 2020 entries related to the note.

Solution

The bank charges an 8% fee on the full maturity value of the note, prorated for 8 months or the period of time from August 1, 2020 (date of the discounting) to April 1, 2021 (the maturity of the note). The full maturity value equals the principal plus interest on the note receivable. The net proceeds to Wyoming of $3,010 equal the total maturity value ($3,180) less the fee ($170). The calculation of the proceeds to Wyoming follow.

Principal value	$3,000
Add: Interest to maturity ($3,000 × 0.06)	180
Total maturity value subject to discount	3,180
Subtract: Interest charged by bank ($3,180 × 0.08 × 8/12)	170
Proceeds to Wyoming	$3,010

The bank charges interest on the maturity value a full eight months before that value is reached, effectively raising the interest cost to Wyoming. Wyoming records the following entries to discount the note. First, Wyoming accrues interest revenue through the date of the discounting. Next, Wyoming records the discounting of the note.

August 1, 2020—To accrue interest revenue

Assets +60 = Liabilities + Equity +60

Interest Receiv 60 | Interest Rev 60

Interest Receivable	60	
Interest Revenue ($3,000 × 0.06 × 4/12)		60

continued

3. Maintain close supervision of all cash-handling and cash-recording functions. This control includes both routine and surprise cash counts, internal audits, and daily reports of cash receipts, payments, and balances.

Although **cash disbursement** controls are tailored to each company's needs, certain common procedures apply.

1. Separate the responsibilities for cash disbursement documentation, check writing, check signing, check mailing, and record keeping.
2. Except for internal cash funds (petty cash), make all cash disbursements by check.
3. Develop tight controls and authorization procedures over the check authorization and signing procedures.
4. Require adequate documentation and verification for checks or electronic payments.
5. Supervise all cash disbursements and record-keeping functions.

REVIEW 8-8 LO8-8 Cash Controls

Review MBC

Part One—Cash Drawer Reconciliation

At the end of the business day of May 1, 2020, Pet Supplies Inc. compiled the following amounts from cash drawer reconciliations of cash receipts: Cash collected: ~~$8,549.20;~~ , net of refunds: $8,405.40; checks collected: $2,341.90 ~~cash refunds made: $143.80.~~ From the retail point of sales system through the input of the electronic register, amounts compiled were as follows: Cash collected: $8,650.80; checks collected: $2,341.90, and cash refunds made: $163.80. Record the necessary adjusting entry, assuming that sales had been automatically recorded from information in the point of sales system.

Part Two—Petty Cash Fund Reconciliation

The Koller Company utilizes a petty cash system for making small payments. Record the journal entries required for the following petty cash transactions completed during June 2020.

1. On June 1, 2020, the company treasurer prepared a $750 check payable to petty cash; the cash was given to the custodian. The petty cash fund has a beginning balance of $0.
2. Expenditures by the custodian through June 30 were postage $50, office supplies $210, office equipment repairs $50, coffee room supplies $100, office birthday party $25, and miscellaneous items $50. The ending fund balance is $265. The fund was replenished on June 30, 2020, back to a level of $750.

Part Three—Bank Reconciliation

Reconciling items on Smith's Inc. prior period *March 31* bank reconciliation follow.

Deposits in transit	$500
Checks outstanding	(100)

April transactions for Smith follow.

Transactions	Bank	Books
Checks recorded	$5,750	$5,900
Deposits recorded	3,800	4,500
Service charges recorded	15	—
Direct deposits to bank	800	—
Electronic payments from bank	80	—
Balance, April 30, 2020	4,540	4,785

Prepare a bank reconciliation for April 2020.

More Practice: 8-99, 8-100, 8-101, 8-102, 8-103

Solution on p. 8-72.

Impairment of a Note Receivable

LO8-9 REVIEW 8-9

Prince Inc., a calendar-year firm, has a 6%, $20,000 note receivable from the sale of merchandise on January 1, 2020. The note was issued when the market rate was 6%. The note is due December 31, 2024. Annual interest is due each December 31. On December 31, 2020, Prince reviews the collectibility of its note and determines that only $15,000 is likely to be received on the due date from this note. Although Prince received the 2020 interest payment, the company does not expect to receive further interest payments. On December 31, 2024, Prince received $14,200 and expects no further payments.

MBC

Required

a. Prepare the entry to record the note receivable impairment on December 31, 2020.

b. Prepare the December 31 entry to accrue interest at year-ends for 2021, 2022, and 2023. Prince chooses to recognize interest revenue using the effective interest method.

c. Prepare the entry to record the final receipt of principal on December 31, 2024.

d. Repeat the requirement for part *a* but now assume that management estimates a 40% probability of collecting $15,000 on the due date (and no interest) and a 60% chance of collecting no further payments.

More Practice:
8-97, 8-98, 8-104, 8-105
Solution on p. 8-73.

Questions

8-1. Define cash as it is used for accounting purposes.

8-2. What are cash equivalents and how are they reported on the balance sheet?

8-3. In what circumstances, if any, is it permissible to offset a bank overdraft against a positive balance in another bank account?

8-4. Define a compensating balance and explain the related reporting requirements.

8-5. Which of the following items should not be recorded in the cash account?

a. Money orders.
b. Postdated checks.
c. Ordinary checks.
d. Postage stamps
e. Currency.
f. Cash deposited in savings accounts.
g. Certificates of deposit.
h. Deposits in checking accounts.

8-6. Crown Co. sold merchandise for $500, terms 2/10, n/30. Explain these terms and prepare the journal entry for the sale under the gross method and under the net method. Which approach is preferable? Why?

8-7. What is the difference between a cash discount and a trade discount?

8-8. In addition to recognizing the sale of a product, describe why an asset and liability are recorded when we estimate returns.

8-9. Briefly describe the allowance method for estimating bad debt expense and the allowance for doubtful accounts for trade receivables. What guidance is available in the accounting standards for estimating the allowance for doubtful accounts?

8-10. Under the allowance method, is the income statement affected when a specific account is determined to be uncollectible?

8-11. It sometimes happens that a receivable that has been written off as uncollectible is recovered. Describe the accounting procedures in such an event.

8-12. What is an accounts receivable aging schedule and how is it used to estimate the allowance for doubtful accounts?

8-13. What accounting guidance is available in determining whether a financing arrangement involving receivables is considered either a sale or a secured borrowing?

8-14. Which party is responsible for uncollectible accounts if an owner sells its receivables to a factor (1) with recourse or (2) without recourse? How is this reported in the financial statements?

8-15. Why are long-term notes recorded at the present value of all future cash flows specified in the note, using the market interest rate?

8-16. When are short-term notes exempt from valuation at present value?

addition, the finance company charges 10% interest on the unpaid loan balance, payable at the end of each month. Record the April 1, 2020, entry for NYC Corporation.

Brief Exercise 8-28 Recording a Sale of Accounts Receivable With Recourse **LO6**
Hint: See Demo 8-6C

Exon Company sold accounts receivable of $10,000 (with an allowance for doubtful accounts of $300) for $9,000 cash, with recourse. Estimated obligations due to the with-recourse provision amounted to $700. Record the sale of receivables entry for Exon Company.

Brief Exercise 8-29 Recording a Sale of Accounts Receivable Without Recourse **LO6**
Hint: See Demo 8-6B

Bappa Apparel manufactures fine sportswear for many national retailers and frequently sells its receivables to factors as a means of accelerating cash collections. Bappa sold $100,000 of receivables to a factor. The receivables were sold without recourse. The factor charged 6% and held back 5% for sales adjustments. Record Bappa's required entry.

Brief Exercise 8-30 Recording Purchase of Accounts Receivable Without Recourse **LO6**

Refer to Brief Exercise 8-29 above. Assume that the factor estimates that expected credit losses are 2% of the accounts receivable balance. Record the journal entry for the factor at the time the receivables are purchased.

Brief Exercise 8-31 Discounting a Note Receivable **LO6**
Hint: See Demo 8-6D

Sonic Inc. received from a customer a $1,000, 9% interest-bearing note that will mature in three months. Two months later, Sonic Inc. discounted the note to the bank at a charge of 12%. Provide the required journal entry made by the company at the time the note was discounted.

Brief Exercise 8-32 Computing Receivable Ratios **LO7**
Hint: See Demo 8-7

Broadway Inc. recognized credit sales of $200,000 for the year ended December 31, 2020. The accounts receivable balances at December 31, 2019, and at December 31, 2020, were $18,880 and $22,000, respectively. Compute Broadway's receivable turnover ratio and its average days to collect receivables for 2020.

Exercises

Exercise 8-33 Classifying Cash and Non-Cash Items on a Balance Sheet **LO1**

Tropical Inc. is preparing its December 31 financial statements, and it must determine the proper balance sheet classification of the items listed below.

Financial Statement Item	Balance Sheet	
	Include in Cash Amount	Classification (If Not Cash)
1. Coins and currency, $1,000.		
2. Checks received from customers, $12,000.		
3. Certificates of deposit (CDs), 6-month term, $16,000		
4. Petty cash fund, $800.		
5. Postage stamps, $120.		
6. First Star checking account balance, $42,000.		
7. Postdated check from customer, $200.		
8. Money order from customer, $300.		
9. Cash in savings account, $20,000.		
10. Bank draft from customer, $800.		
11. Investment in commercial paper, 30-day term , $160.		
12. Utility deposit to a utilities company (refundable), $100.		
13. Certified check from customer, $2,000.		
14. NSF (non-sufficient fund) check from R. Roe, $400.		
15. Cash advance to company executive, collectible upon demand, $40,000.		
16. Hometown Credit Union, checking account, overdraft, $4,000.		
17. Travel advances to employees, $240.		
18. Cashier's check, $500.		

Required

Complete the table above. (a) Indicate whether each amount would be classified as cash. (b) Indicate an alternative classification if the amount is excluded from cash.

Exercise 8-34
Classifying Cash-Related Items on a Balance Sheet **LO1**

Olympian Inc. is preparing its 2020 financial statements; its annual accounting period ends December 31. The following items, related to cash, are under consideration.

a. A $900 check received from a customer, dated February 1, 2021, is held by Olympian.
b. A customer's check was included in the December 20 deposit. It was returned by the bank stamped NSF (non-sufficient funds). No entry has yet been made by Olympian Inc. to reflect the return.
c. A 6-month, $20,000 CD (certificate of deposit) on which $1,000 of interest accrued to December 31 has just been recorded by debiting interest receivable and crediting interest revenue.
d. Postage stamps that cost $30 are in the cash drawer.
e. A cashier's check of $200 payable to Olympian Inc. is in the cash drawer; it is dated December 29.
f. Three checks, dated December 31, 2020, totaling $465, payable to vendors who have sold merchandise to Olympian Inc. on account, were not mailed by December 31, 2020. They have not been entered as payments in the check register and ledger.
g. Olympian Inc. has a note receivable that matures December 31, 2020. The note is for $20,000 and bears interest at 9%, having been outstanding for three months. The company plans to include the full amount due of $20,000 plus interest in its cash balance even though payment was not received until January 1, 2021.
h. The company has invested in a U.S. Treasury bill, originating December 15, 2020, and maturing February 1, 2021, for $2,500.
i. The company is legally required to maintain $25,000 at its bank as a compensating balance.

Required

Indicate how each item *a* through *i* should be reported on a balance sheet as of December 31, 2020.

Exercise 8-35
Accounting for Sales on Credit: Gross Method **LO2**

On December 29, 2020, Sabre Company sold merchandise for $2,000 on credit terms, 3/10, n/60. The accounting period ends December 31.

Required

Provide the following entries under the gross method.

a. To record the 2020 sale. Omit the cost of goods sold entry.
b. To record collection of the account, assuming collection took place on January 5, 2021.
c. To record collection of the account, assuming collection took place on April 1, 2021.
d. Indicate what should be reported on the balance sheet and income statement for both 2020 and 2021 assuming
   1. Parts *a* and *b* occur. 2. Parts *a* and *c* occur.

Exercise 8-36
Accounting for Sales on Credit: Net Method **LO2**

On December 29, 2020, Sabre Company sold merchandise for $2,000 on credit terms, 3/10, n/60. The accounting period ends December 31.

Required

Provide the following entries under the net method.

a. To record the 2020 sale. Omit the cost of goods sold entry.
b. To record collection of the account, assuming collection took place on January 5, 2021.
c. To record collection of the account, assuming collection took place on April 1, 2021.
d. Indicate what should be reported on the balance sheet and income statement for both 2020 and 2021 assuming
   1. Parts *a* and *b* occur. 2. Parts *a* and *c* occur.

Exercise 8-37
Recording Entries for Sales and Estimated Returns **LO3**
Hint: See Demo 8-3

Lacey Company recorded sales of $2,000,000 for the year ended December 31, 2020. During 2020, the company recorded actual returns and allowances of $25,000. As of December 31, 2020, Lacey estimates sales returns at 3% of current year sales. It is the company's policy to provide refunds on account. Lacey uses a perpetual inventory system and records estimated returns at the end of the period. The balance in Refund Liability is $18,000 and the balance in Inventory—Estimated Returns is $7,200 on January 1, 2020.

Required

a. Prepare the journal entries to record sales in 2020 assuming all sales are on account. Cost of goods sold is 40% of the selling price.

Required

a. Assuming that Master uses the allowance method to estimate net accounts receivable and uses 9% of accounts receivable as its estimate of expected credit losses, prepare the (1) journal entries to record write-offs and bad debt expense for 2020, and (2) disclosure on gross and net accounts receivable on the balance sheet at December 31, 2020.

b. How would the answers to part *a* change (if at all) assuming instead that the December 31, 2019, balance in the allowance for doubtful accounts was a debit balance of $5,000?

Exercise 8-42
Estimating and Recording Bad Debt Estimates and Write-offs; Reporting of Accounts Receivable **LO4**

At December 31, 2020, its annual year-end, the accounts of Sun Systems Inc. show the following.

1. Sales revenue for 2020, $180,000, of which one-sixth was on account.
2. Allowance for doubtful accounts, balance December 31, 2019, $900 credit.
3. Accounts receivable, balance December 31, 2020 (prior to any write-offs of uncollectible accounts during 2020), $18,050.
4. Uncollectible accounts to be written off, December 31, 2020, $1,050.
5. Aging schedule at December 31, 2020, showing the following breakdown of total accounts receivable, excluding the amounts to be written off.

Status	Amount
Not past due	Remainder
Past due 1–60 days	$4,000
Past due over 60 days	3,000

Required

a. Prepare the 2020 entry to write off the uncollectible accounts.

b. Prepare the 2020 adjusting entry to record bad debt expense for each of the following independent assumptions concerning expected bad debt loss rates.
   1. Based on credit sales, 1.5%.
   2. Based on total receivables at year-end, 2.5%.
   3. Based on aging schedule: not past due, 0.5%; past due 1–60 days, 1%; and past due over 60 days, 8%.
   4. Based on direct write-off method (assume entry in part *a* has not been recorded).

c. Prepare the 2020 balance sheet disclosure relating to accounts receivable for each assumption 1 through 4 of part *b*. Describe the positives and negatives of the four methods in part *b*.

Exercise 8-43
Recording Write-Offs and Computing Net Realizable Value of Receivables **LO4**

Andler Inc. estimates that an allowance of $8,000 is required on its accounts receivable balance of $160,000 on December 31, 2020.

Required

a. What is the net realizable value of its accounts receivable on December 31, 2020?

b. On February 1, 2021, the company determined that $2,000 of specific accounts receivable would be written off. Prepare the journal entry required to write-off these accounts. What is the net realizable value of accounts receivable after the write-off?

c. On February 15, 2021, the company unexpectedly collected $500 of the accounts written off on February 1, 2021. Prepare the journal entries required upon collection of these accounts. What is the net realizable value of accounts receivable after the collection?

The company estimates bad debts as 2% of receivables at year-end to be uncollectible. Prepare the adjusting entry at December 31, 2020, to adjust the allowance for doubtful accounts.

Required

Analyze each of the four separate scenarios and answer the requirements.

Exercise 8-47
Recording and Reporting Transactions with Short-Term, Interest-Bearing Note Receivable **LO5**
Hint: See Demo 8-5A

On April 1, 2020, Welsch Company sold merchandise to Customer Rodriguez for $18,000, terms 2/10, n/30. Because of nonpayment by Rodriguez, Welsch received an $18,000, 10%, 12-month note dated May 1, 2020. The stated rate and the market rate are equal. The company's annual reporting period ends December 31. Customer Rodriguez paid the note in full, plus cash interest, on its maturity date.

Required

a. Prepare all entries for Welsch related to the above transactions, including any year-end adjustments. Welsch uses the gross method for cash discounts.
b. Show what should be presented on the 2020 income statement and balance sheet.

Exercise 8-48
Recording and Reporting Transactions with Short-Term, Interest-Bearing Note Receivable **LO5**

On May 1, 2020, Swimm Company sold merchandise to Customer Lochte and received a $26,400 (face amount), one-year, noninterest-bearing note. The market rate of interest is 10%. The annual reporting period for Swimm Company ends on December 31. Customer Lochte paid the note in full on its maturity date.

Required

a. Prepare all entries for Swimm Company related to the above transactions, including any year-end adjustments. Amortize the discount on the note receivable using the straight-line method.
b. Show what should be presented on the 2020 income statement and balance sheet.

Exercise 8-49
Recording Entries for Long-Term Note Receivable; Effective Interest Method **LO5**
Hint: See Demo 8-5B

On January 1, 2020, Jacobs Company sells land financed through a $40,000 note, issued by Andress Company. The note is a $40,000, 8%, annual interest bearing note. Andress agrees to repay the $40,000 proceeds on December 31, 2021. The prevailing interest rate on similar notes is 11%. Assume that the cost of the land is equal to the fair value of the note.

Required

Prepare all entries for Jacobs over the note term, including any year-end adjustments. Use the effective interest method to amortize the discount.

Exercise 8-50
Preparing Entries and Interest Schedule for Long-Term Note Receivable; Effective Interest Method **LO5**

On July 1, 2020, Stealth Company sold a machine (classified as inventory) that had a list price of $36,000. The customer paid $6,000 cash and signed a three-year, $30,000 note that specified a stated interest rate of 3%. Annual interest on the full amount of the principal is payable each June 30. The principal is payable on June 30, 2023. The market rate of interest for a note of this risk is 10%.

Required

a. Compute the present value of this note.
b. Prepare an effective interest schedule for this note.
c. Prepare all entries required by Stealth for this note through its maturity date, including year-end adjustments.

Exercise 8-51
Preparing Entries and Interest Schedule for Long-Term Note Receivable; Effective Interest Method **LO5**
Hint: See Demo 8-5C

On April 1, 2020, Mountain Company sold merchandise and received a $12,000, three-year, noninterest-bearing note. The market rate is 10%. Mountain Company has a March 31 year-end. Assume the use of the effective interest method.

Required

Prepare all entries for Mountain Company over the note's term, including year-end adjustments.

Exercise 8-52
Preparing Entries for a Secured Borrowing and Subsequent Collections and Payments **LO6**

A note payable was executed by Sterling Inc. to Miami Finance Company. Sterling Inc. used $240,000 of its accounts receivable as collateral for the loan. The contract provided that Miami would advance 85% of the gross amount of the receivables. Sterling Inc. continues to collect payments for the receivables and the cash from customers is then remitted to the finance company. The cash remitted is first applied to the finance charges, with the remainder applied to principal.

During the first month, customers owing $164,000 paid cash, less sales returns and allowances of $6,400, originally recorded as a refund liability. The finance charge at the end of the first month was $1,400.

App—Exercise 8-100
Recording Cash Reconciliation Adjustment **LO8**

Fashionable Inc. compiled the following amounts from cash drawer reconciliations of cash receipts: Cash collected, net of refunds: $38,604.08; checks collected: $2,310.77; cash refunds made: $328.12. Per the retail point of sales system through the input of the electronic register, amounts compiled were as follows: Cash collected: $39,002.10; checks collected: $2,342.77, and cash refunds made: $302.12. Record the necessary adjusting entry at the end of the day assuming that sales had been automatically recorded from information in the point of sales system.

App—Exercise 8-101
Preparing Entries to Establish, Reimburse, and Increase Petty Cash **LO8**

As a part of its newly designed internal control system, Waters Inc. established a petty cash fund. Transactions for the first month follow.

1. Wrote a check for $500 on August 1 and gave the cash to the fund custodian.
2. Count of petty cash on August 15 totaled $60. The fund is replenished on August 15.
3. Count of petty cash on August 31 totaled $34. The fund is replenished on August 31.
4. A summary of the petty cash expenditures made by the custodian follows.

	August 1–15	August 16–31
Postage used	$ 40	$ 58
Supplies purchased and used	265	190
Delivery expense	98	178
Miscellaneous expenses	35	40
Total	$438	$466

5. Increased the petty cash fund by $300 on August 31.

Required

Prepare the journal entries required on:

a. August 1
b. August 15
c. August 31

App—Exercise 8-102
Preparing a Bank Reconciliation and Recording Adjusting Entries **LO8**

The following information pertains to the cash reconciliation process for Jones Company.

1. Jones Company received its June 30 bank statement. A summary of this statement follows.

Bank balance, June 1	$23,000
Deposits and other credits	11,600
Checks and other debits	(12,120)
Interest earned on this statement	100
Bank balance, June 30	$22,580

Account transactions reflected in the bank statement follow.

Deposits

June 1	$ 2,000
June 8	3,000
June 17	4,500
June 22	2,100
Total	$11,600

Checks

June 2	#61	$1,000	June 17	#65	$ 400
June 7	#63	2,000	June 23	#60	1,100
June 9	#66	3,000	June 27	#67	2,100
June 14	#64	1,420	June 28	#59	1,100
		June total for checks	$12,120		

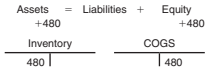
2. Transaction details involving the Jones Company's Cash account per its book follow.

Cash Account

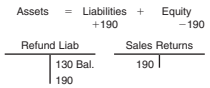
Balance June 1		$23,900			
Deposits		12,300	$13,220	Checks	
June 8	$3,000		#60	$1,100	#65 $ 400
June 17	4,500		#61	1,000	#66 3,000
June 22	2,100		#62	900	#67 2,100
June 30	2,700		#63	2,000	#68 1,300
			#64	1,420	

2020—To record the return of merchandise

Sales Returns	800	
Cash or Accounts Receivable		800

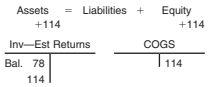


Inventory ($800 × 0.60)	480	
Cost of Goods Sold		480



December 31—To record estimated returns

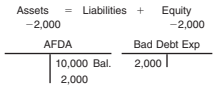
Sales Returns ((($0.04 × $28,000) – $800) – $130)	190	
Refund Liability		190



Inventory—Estimated Returns (($320 – 130) × 60%)	114	
Cost of Goods Sold		114

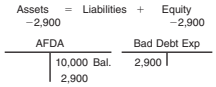
Review 8-4

a. **(1) December 31, 2020—To record bad debt expense**



Bad Debt Expense	2,000	
Allowance for Doubtful Accounts ([$400,000 × 0.03] – $10,000)		2,000

(2) December 31, 2020—To record bad debt expense

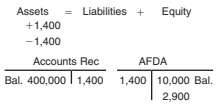


Bad Debt Expense	2,900	
Allowance for Doubtful Accounts*		2,900

*([$300,000 × 0.02] + [$90,000 × 0.06] + [$10,000 × 0.15]) – $10,000 = $2,900

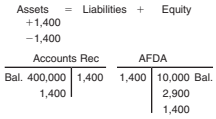
b. (1) $388,000 ($400,000 – $12,000) (2) $387,100 ($400,000 – $12,900)

c. **January 15, 2021—To record account write-off**

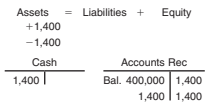


Allowance for Doubtful Accounts	1,400	
Accounts Receivable		1,400

d. **January 31, 2021—To record unexpected collection on account**



Accounts Receivable	1,400	
Allowance for Doubtful Accounts		1,400



Cash	1,400	
Accounts Receivable		1,400

Review 8-5

a. $25,000

b. $2,000 ($25,000 × 0.08)

c. $2,000 ($25,000 × 0.08)

d. $23,663 PV(0.08,2,–1250,–25000)

e. $1,893 ($23,663 × 0.08)

f. $1,250 ($25,000 × 0.05)

g. $21,433 PV(0.08,2,0,–25000)

h. $1,715 ($21,433 × 0.08)

i. $0

j. $25,917 PV(0.06,2,–2000,–25000)

k. $1,555 ($25,917 × 0.06)

l. $2,000 ($25,000 × 0.08)

d. $750 of in-transit merchandise was shipped f.o.b. destination to a customer and was excluded from the physical inventory count. The merchandise was turned over to a common carrier on December 28, 2020, and is expected to arrive at the customer on December 31, 2020.

e. Ultim Corp. ordered merchandise on December 26, 2020. The merchandise ($800) was shipped to Ultim Corp. f.o.b. shipping point, and was expected to arrive January 2, 2021. The merchandise was not included in the physical inventory count.

f. A return to a vendor of merchandise for $1,000 was in-transit on December 31, 2020, and was excluded from the physical inventory count. The merchandise was shipped f.o.b. shipping point on December 30, 2020.

Required

For each item *a* through *f*, determine and explain any adjustments required to the physical inventory balance of $100,000 for Ultim Corp.

Exercise 9-44
Determining Merchandise to be Included or Excluded from Ending Inventory **LO1**

The unadjusted inventory balance of Sara Ann Corp. is $500,000 on December 31, 2020, based on a physical inventory count. The following items must be considered before the inventory valuation is finalized.

a. On December 31, the physical inventory excluded $500 of merchandise inventory shipped to Sara Ann Corp. from a vendor f.o.b. destination that arrived on January 1, 2021.

b. On December 31, the physical inventory included $18,000 of merchandise inventory held on consignment by a customer. Sara Ann Corp. is the consignor.

c. On December 31, the physical inventory included $800 of merchandise held on consignment. The consignor is Sara Ann's largest vendor.

d. $18,000 of in-transit merchandise was shipped f.o.b. shipping point to a customer and was excluded from the physical inventory count. The merchandise was shipped on December 28, 2020, and is expected to arrive at the customer on December 31, 2020.

e. Goods are in-transit from a vendor to Sara Ann on December 31, 2020. The invoice cost was $12,000 and the goods were shipped f.o.b. shipping point on December 28, 2020. The merchandise was excluded from the physical inventory count because they had not been delivered.

f. Merchandise with a cost of $300 is held in the receiving department for return. The merchandise was excluded from the physical inventory count.

Required

Determine whether any adjustments are needed to Sara Ann's physical inventory balance of $500,000 due to the transactions *a* through *f* outlined above.

Exercise 9-45
Periodic System—Recording Inventory-Related Entries using the Gross Method **LO2**
Hint: See Demo 9-2A

Unite Inc. maintains a periodic inventory system and uses the gross method to record purchases. The following transactions occurred during the month of March 2020 for its major inventory line.

a. Purchase of merchandise inventory on March 1, 2020, for $24,000 on account, terms 1/10, n/30.

b. Paid $240 cash for freight charges on March 1, 2020, related to the purchase.

c. Returned $180 of merchandise on March 5, 2020, and received a credit from the vendor.

d. Paid the balance due to the vendor on March 8, 2020.

e. Sold merchandise inventory on March 15, 2020, for $15,000.

Required

Prepare journal entries for transactions *a* through *e*.

Exercise 9-46
Computing Income and Recording Period-End Adjusting Entry—Periodic System **LO2**

The records of Whirlpools Inc. show the following data for 2020.

Sales revenue	$400,000	Beginning inventory	$50,000
Purchases	$280,000	Expenses including income taxes	$90,000
Net income as a percent of sales revenue	15%	Tax rate for 2020	25%

Required

a. Reconstruct the income statement for this company. Assume a periodic inventory system.

b. Prepare the required journal entry at period end to record ending inventory. Assume a periodic inventory system.

Required

a. Prepare entries for the transactions reflected above assuming a periodic inventory system for:
1. Merchandise sales.
2. Merchandise purchases.
3. Merchandise returns.
4. Total expenses.
5. To record cost of sales and ending inventory balance.

b. Prepare entries for the transactions reflected above assuming a perpetual inventory system for:
1. Merchandise sales.
2. Merchandise purchases.
3. Merchandise returns.
4. Total expenses.
5. To record adjusting entry.

Exercise 9-52
Periodic System—Calculating Ending Inventory and Cost of Sales using Average Cost, FIFO, and LIFO **LO3**

Leven Company began operations on December 1, 2019. The following information is available for the company's merchandise inventory. A physical inventory taken on March 31, 2020, showed 1,500 units available. Leven uses a periodic inventory system.

Date	Units	Unit Cost
January 1, 2020 (beginning inventory)	800	$ 9.00
Purchases: January 5, 2020	1,500	10.00
January 25, 2020	1,200	10.50
February 16, 2020	600	12.00
March 26, 2020	900	13.00

Required

a. Compute ending inventory and cost of goods sold for the quarter ended March 31, 2020, using:
1. Average Cost method.
2. FIFO method.
3. LIFO method.

b. Which method results in the:
1. Highest gross profit?
2. Lowest gross profit?
3. Highest ending inventory balance?
4. Lowest ending inventory balance?

Exercise 9-53
Perpetual System—Calculating Ending Inventory and Cost of Sales using Moving Average, FIFO, and LIFO **LO5**

April Inc. maintains a perpetual inventory system and recorded the following information for the month of January.

Date	Units	Unit Cost
Inventory, January 1	475	$10.50
Purchase, January 10	200	12.00
Purchase, January 20	100	13.25
Purchase, January 28	300	14.00
Sale, January 5	250	
Sale, January 13	100	
Sale, January 31	160	
Inventory, January 31	565	

Required

Compute ending inventory and cost of goods sold for the month ending January 31 using:
1. Average Cost method.
2. FIFO method.
3. LIFO method.

Its ending inventory of 400 units can be specifically identified as follows: 100 units from the January 3 purchase, 50 units from the January 10 purchase, and 250 units from the January 25 purchase.

Required

Compute ending inventory and cost of goods sold for the month ended January 31 using:

a. Specific identification (periodic inventory system).
b. Average cost (periodic inventory system).
c. FIFO (periodic inventory system).
d. LIFO (periodic inventory system).
e. Moving average (perpetual inventory system).
f. FIFO (perpetual inventory system).
g. LIFO (perpetual inventory system).
h. Dollar-value LIFO (periodic inventory system). Assume that the beginning inventory is the base layer at a cost of $6.00 per unit. The price index for January 2020 is 1.05.

Exercise 9-66
Analyzing the Impact on Ratios from Changing Inventory Prices **LO9**

Consider two companies that are identical except for the way they value inventory. One company uses FIFO (Company F), while the other uses LIFO (Company L). Assume prices are rising in the markets in which these companies buy materials. Indicate for each ratio below which company (Company F, Company L, or neither) will have the larger ratio value.

Ratio	Company with Larger Ratio Value
a. Current	_____
b. Working capital to total assets	_____
c. Inventory turnover	_____
d. Total liabilities-to-equity	_____
e. Total liabilities-to-total assets	_____
f. Book value per share	_____
g. Return on total assets	_____
h. Earnings per share	_____

Exercise 9-67
Matching Terms Relating to Inventory Concepts and Procedures with their Descriptions **LO1, 2, 3, 4, 5, 6, 7, 8, 9**

Following are terms relating to inventory concepts and procedures along with descriptions of those terms.

Terms

___ 1. Free on board shipping point
___ 2. Free on board destination
___ 3. Gross method—purchase discounts
___ 4. Net method—purchase discounts
___ 5. Consignee
___ 6. Consignor
___ 7. Perpetual inventory system
___ 8. Periodic inventory system
___ 9. Specific Identification
___ 10. Average Cost method
___ 11. Moving Average method
___ 12. Repurchase agreement
___ 13. LIFO reserve
___ 14. LIFO liquidation

Description of Terms

a. Requires each inventory item to be distinguishable from another
b. Occurs when the seller of inventory agrees to buy back the inventory at set terms
c. Purchase discounts lost are treated as a finance charge
d. Ownership passes when the seller transfers goods to carrier
e. An average inventory cost is computed based upon an entire period
f. Purchase discounts are only recorded if taken
g. Elimination of prior period's inventory layer
h. Owner of inventory held at a separate location
i. Requires a physical count of inventory in order to determine COGS
j. Requires average inventory calculations throughout the period
k. Measures the difference between inventory valued at FIFO vs. LIFO
l. Ownership passes when the buyer receives goods from carrier
m. Requires a physical inventory to verify inventory balances
n. Acts as a sales agent to sell merchandise

Required

Match each term, 1 through 14, with the best description *a* through *n*.

Required

a. Prepare the following journal entries for the transactions summarized above assuming that the company uses the perpetual inventory system.
1. Purchase of inventory
2. Return of inventory to suppliers
3. Sale of inventory
4. Return of sales from customers
5. Write-off of inventory
6. Recording of expenses
7. Year-end adjustment for any inventory shortage

b. Prepare the following journal entries for the transactions summarized above assuming that the company uses the periodic inventory system.
1. Purchase of inventory
2. Return of inventory to suppliers
3. Sale of inventory
4. Return of sales from customers
5. Recording of expenses
6. Year-end adjustment to record inventory and cost of sales

c. Prepare a multiple-step income statement under both the periodic and the perpetual inventory systems. Assume 10,000 shares of common stock are outstanding, and the tax rate is 40%.

Problem 9-71
Recording Inventory and Sales Transactions; Preparing an Income Statement **LO2**

Gamit Company completed the following selected (and summarized) transactions during 2020.

1. Merchandise inventory at January 1, 2020, $105,000 (at cost).
2. During the year, purchased merchandise for resale at a quoted price of $200,000 on credit, terms 2/10, n/30. Immediately paid 85% of the cash cost.
3. Paid freight on merchandise purchased, $10,000 cash.
4. Paid 40% of the accounts payable within the discount period. The remaining payables were unpaid at the end of 2020 and were still within the discount period.
5. Merchandise that had a quoted price of $3,000 (terms 2/10, n/30) was returned to a supplier. A cash refund of $2,940 was received because the items were unsatisfactory.
6. During the year, sold merchandise for $370,000, of which 10% was on credit, terms 2/10, n/30.
7. Some merchandise was returned by the customer. Merchandise was originally sold for $600, of which $400 cash was refunded. *Hint:* Debit Sales Returns and Allowances for cash refund.
8. Operating expenses (administrative and distribution) paid in cash, $120,000.
9. Excluded from the purchase given in transaction *2* and from the physical count of ending inventory was a shipment for $7,000 (net of discount). This shipment was in transit, FOB shipping point, at December 31, 2020. The invoice is received.
10. Sold the returned merchandise for $195.

A physical count of ending inventory was $110,000 at cost. The company's average income tax rate is 25%. Accounting policies followed by the company are (1) its annual accounting period ends December 31, (2) a periodic inventory system is used, (3) purchases and accounts payable are recorded net of cash discounts, (4) all cash discounts are taken.

Required

a. Prepare the journal entries for transactions 2 through 10 along with the year-end entry to record ending inventory and cost of goods sold.

b. Prepare a multiple-step income statement for the year ended December 31, 2020. Assume that 20,000 shares of common stock are outstanding.

c. Show how ending inventory and accounts payable should be reported on the balance sheet at December 31, 2020.

Problem 9-72
Periodic and Perpetual Systems—Recording Purchases and Sales, and Year-End Adjustments; Computing Gross Profit under both Systems **LO2, 4**

Diaz Inc. uses the gross method to record purchases. Its inventory balance on August 1, 2020, is $4,000. The following transactions occurred during the month of August 2020 for its major inventory item.

Aug. 1	Purchase of merchandise inventory for $18,000 on account, terms 2/10, n/30.
Aug. 2	Shipping charges of $500 cash paid on delivery of merchandise (shipped f.o.b. shipping point).
Aug. 3	After inspection of the merchandise, $800 of inventory was returned to the vendor for account credit.
Aug. 8	Paid balance on account to vendor.
Aug. 15	Sold merchandise inventory on account for $10,000 with a cost of $6,000.
Aug. 20	Sold merchandise inventory on account for $8,000 with a cost of $4,800.
Aug. 31	Physical inventory count indicated that the ending inventory balance at cost was $9,500.

TARGET

Real World—PURCHASE COMMITMENTS

TARGET CORP [TGT]

Target Corporation discloses the value of purchase commitments in a recent Form 10-K. Target does not consider purchase orders as part of purchase commitments because they are cancelable.

> **Commitments** Purchase obligations, which include all legally binding contracts such as firm commitments for inventory purchases, merchandise royalties, equipment purchases, marketing-related contracts, software acquisition/license commitments, and service contracts, were $1,950 million and $2,411 million at January 30, 2016 and January 31, 2015, respectively. These purchase obligations are primarily due within three years and recorded as liabilities when inventory is received. We issue inventory purchase orders, which represent authorizations to purchase that are cancelable by their terms. We do not consider purchase orders to be firm inventory commitments. If we choose to cancel a purchase order, we may be obligated to reimburse the vendor for unrecoverable outlays incurred prior to cancellation. Real estate obligations, which include commitments for the purchase, construction or remodeling of real estate and facilities, were $279 million and $243 million at January 30, 2016 and January 31, 2015, respectively. These real estate obligations are primarily due within one year, a portion of which is recorded as liabilities.

REVIEW 10-5 **LO10-5** **Purchase Commitment**

Review MBC

More Practice:
10-30, 10-31, 10-56, 10-57
Solution on p. 10-57.

On May 1, 2020, Sonic Inc. entered into a noncancelable contract to purchase 80,000 units of raw materials inventory at $20 per unit, which is the current market price of the inventory at that date. The contract period extends through May 2021. Sonic's accounting period ends December 31. On December 31, 2020, raw materials were being sold for $18 per unit. On March 25, 2021, Sonic purchased the 80,000 units; the selling price per unit of inventory on this date was $17. The company maintains a perpetual inventory system and uses the FIFO inventory method.

Prepare journal entries required, if any, on (a) May 1, 2020, (b) December 31, 2020, and (c) March 25, 2021. Assume no selling costs.

EXPANDING YOUR KNOWLEDGE **Inventory Disclosures**

ASC 330-10-50 requires the following disclosures related to inventory.

- Basis for stating inventories and the nature and effect on income of any change in basis.
- Substantial and unusual losses resulting from subsequent measurement of inventory.
- Inventory stated above cost.
- Inventory stated at sales price.
- Net losses recognized on firm purchase commitments.
- Disclosures of significant estimates.

Other inventory disclosures include the composition of inventory (such as raw materials or finished goods for a manufacturer), inventory financing arrangements, and the effects of any LIFO liquidations.

LO 10-6 Describe accounting treatment for changes in inventory methods

LO 10-6 Overview

Change in Accounting Method
- Retrospective adjustment
  - Voluntary change in accounting principle
- Prospective adjustment
  - Retrospective approach is impracticable
- Expense indirect effects of accounting change

Once a company chooses an inventory method, there is a presumption that the chosen method is consistently applied. Financial statement users rely on consistent application of principles from one period to the next to allow for comparative financial analysis. However, under certain circumstances, a company may voluntarily change from one generally accepted accounting method to another or may be required to change an accounting method due to a Codification update as described in Chapter 3.

b. Prepare year-end journal entries to apply lower-of-cost-or-net realizable value rule to inventory on December 31, 2020, assuming that the company adjusts inventory through the allowance account, and adjusts equity through a separate loss account.

c. Identify the primary advantage and disadvantage of the procedures followed in part *a* and part *b*.

Exercise 10-46
Valuing Inventory at Lower-of-Cost-or-Market **LO2**
Hint: See Demo 10-2

Gard Inc. has compiled the following information related to its five products. Costs of disposal are estimated to be 10% of selling price, and gross profit is estimated to be 25% of the selling price.

	#1	#2	#3	#4	#5
Estimated selling price	$330	$380	$410	$500	$650
Original cost (LIFO)	225	240	300	315	450
Replacement cost	250	350	245	330	415

Required

Determine the value of inventory applying the lower-of-cost-or-market rule to each individual inventory item.

Exercise 10-47
Valuing Inventory at Lower-of-Cost-or-Market **LO2**

Management of Tarry Company takes the position that under the lower-of-cost-or-market rule, the two items below are reported in ending inventory at $33,200 (total). Inventory cost is reported using LIFO.

- Edgers: 600 in inventory; cost is $22 each; replacement cost is $16 each; estimated sale price is $30 each; estimated distribution cost is $3 each; and normal profit is 10% of sale price.
- Hedge clippers: 400 in inventory; cost is $50 each; replacement cost is $36 each; estimated sale price is $90 each; estimated distribution cost is $28 each; and normal profit is 20% of sale price.

Required

a. Compute your inventory valuation by item and in total for the Tarry Company inventory reported above. Identify the source of the error if Tarry's estimate differs from your own.

b. Prepare the entry, if any, to report inventory at the lower-of-cost-or-market. Assume that all adjustments directly impact cost of goods sold and inventory.

Exercise 10-48
Valuing Inventory and Recording Entries Using Relative Sales Value Method **LO3**
Hint: See Demo 10-3

AVC Inc. purchased 1,200 bags of pecans that cost $4,200. The company also incurred $300 for transportation and grading. The pecans graded out as follows.

Grade	Quantity (bags)	Current Market Price per Bag
A	400	$6.75
B	600	6.00
C	100	4.50
Waste	100	—

Required

Assume the relative sales value method is used to allocate lump sum costs.

a. Prepare the purchase entry assuming a perpetual inventory system.

b. Determine the value of ending inventory assuming the following quantities are in inventory: grade A, 100 bags; grade B, 80 bags; and grade C, 40 bags.

c. Prepare the entry for sale of 20 bags of grade A pecans at a market price of $6.75 cash per bag.

Exercise 10-49
Valuing Inventory and Recording Entries Using Relative Sales Value Method **LO3**

Arizona Developers purchased for cash and subdivided a tract of land that cost $900,000. The subdivisions were divided on the following basis.

- 10% used for streets, alleys, and parks
- 50% divided into 100 lots selling at $4,000 each
- 30% divided into 200 lots selling at $3,000 each
- 10% divided into 100 lots selling at $2,000 each

Required

a. Prepare the entry for the purchase of the lots. Use the relative sales value method to allocate the total cost of $900,000 to the three categories of lots. Assume a perpetual inventory system.

b. During the final month of the year, the paving was completed (included in the $900,000 cost) and several sales occurred. Inventory remaining at the first year-end was: 20 of the $4,000 lots; 50 of the $3,000 lots; and 10 of the $2,000 lots. (1) Compute the valuation of inventory at the first year-end. (2) Prepare the entry for sales and cost of goods sold for each category of lots 1, 2 and 3 separately. Assume cash sales.

Exercise 10-50 Estimating Inventory Using Gross Profit Method **LO4**

The following data is from Netflicks Company for 2020.

Sales revenue	$120,000
Beginning inventory	16,000
Purchases	80,000

Required

For each separate case *a* through *e*, estimate ending inventory.

a. Markup is 50% on cost.
b. Markup is 60% on sales.
c. Markup is 25% on cost.
d. Markup is 40% on sales.
e. Markup is 60% on cost.

Exercise 10-51 Estimating Inventory Using Gross Profit Method **LO4**

Assume that we are auditing the records of Forde Corporation. A physical inventory has been taken by the company under our observation. However, the valuation extensions have not been completed. The records of the company show the following account data. The gross margin last period was 35% of net sales; we anticipate that it will be 25% for the year under audit.

Sales, gross	$630,000	Beginning inventory	$200,000
Sales returns (returned to inventory)	10,000	Freight-in	14,000
Purchases, gross	310,000	Purchase returns and allowances	4,000

Required

Estimate the cost of ending inventory using the gross profit method.

Exercise 10-52 Estimating Inventory Loss Using Gross Profit Method **LO4**
Hint: See Demo 10-4

On November 15, 2020, a fire destroyed Youngstown Inc.'s warehouse where inventory is stored. It is estimated that $20,000 can be realized from sale of usable but damaged inventory. The accounting records concerning inventory reveal the following. Based on recent records, gross margin has averaged 35% of net sales.

Inventory at Nov. 1, 2020	$240,000
Purchases from Nov. 1, 2020, to Nov. 15, 2020	280,000
Net sales from Nov. 1, 2020, to Nov. 15, 2020	400,000

Required

a. Calculate the estimated loss of inventory using the gross profit method.
b. Assume instead that the markup is 35% of cost. Estimate the loss of inventory using the gross profit method.

AICPA adapted

Exercise 10-53 Estimating Inventory Loss Using Gross Profit Method **LO4**
Hint: See Demo 10-4

The accounting records of Butler Company reveal the following information.

Inventory, January 1	$ 20,000
Purchases to July 19	200,000
Net sales to July 19	170,000

Before the company opened for business for the day on July 20, its assets were totally destroyed by flood. The insurance company adjuster found that the average gross profit percentage for the past few years had been 40%.

Required

a. Estimate the value of inventory destroyed assuming that the gross profit percentage given was based on sales.
b. Estimate the value of inventory destroyed assuming that the gross profit percentage given was based on cost of sales.

Exercise 10-54 Computing Gross Profit and Cost Percentages Given Ending Inventory Balances **LO4**

Harris Inc. with a December 31 year-end, uses a periodic inventory system in reporting inventory. Because its physical inventory count takes place at year-end, Harris estimates ending inventory for its quarterly reports using the gross profit method. The following information for the first two quarters of 2020 is available for Harris.

Inventory, December 31, 2019 (based on physical count)	$ 45,000	Purchases, Second quarter, 2020	$175,000
Inventory, March 31, 2020 (estimated)	20,000	Net sales, First quarter, 2020	200,000
Inventory, June 30, 2020 (estimated)	59,000	Net sales, Second quarter, 2020	180,000
Purchases, First quarter, 2020	125,000		

Required

a. Estimate gross profit percentage for first quarter 2020.
b. Estimate cost percentage for first quarter 2020.
c. Estimate gross profit percentage for second quarter 2020.
d. Estimate cost percentage for second quarter 2020.

Exercise 10-55
Estimating Inventory Loss Using Gross Profit Method **LO4**

Dart Company's accounting records reveal the following.

Inventory, January 1, 2020	$ 500,000
Purchases during 2020	2,500,000
Sales during 2020	3,200,000

A physical inventory taken on December 31, 2020, shows an ending inventory of $575,000. Dart's gross margin on sales has remained constant at 25% in recent years. Dart suspects some inventory theft by a new employee.

Required

At December 31, 2020, compute an estimate of the cost of missing inventory.

Exercise 10-56
Accounting for Inventory Transactions with Purchase Commitments **LO5**

During 2020, Moss Company signed a contract with a supplier to purchase 30,000 subassemblies at $30 each during 2021. The company uses the FIFO method to account for inventory.

Required

a. The cost of subassemblies had declined and the estimated net realizable value is $850,000 on December 31, 2020. Prepare any year-end entry required for this cost decline.
b. The subassemblies are received in 2021 when the net realizable value is estimated at $850,000. The contract was paid in full. Prepare the required purchase entry in 2021.

Exercise 10-57
Accounting for Inventory Transactions with Purchase Commitments **LO5**
Hint: See Demo 10-5

Nov. 1, 2020	Sonic Inc. entered into a purchase contract (not subject to revision or cancellation) to purchase 20,000 units of inventory at $7 per unit (to be used in manufacturing). The contract period extends through February 2021, and Sonic applies a perpetual inventory system and the FIFO inventory method.
Dec. 31, 2020	At Sonic's December 31 year-end, inventory was being sold at a price of $5 per unit.
Jan. 25, 2021	Sonic purchased the 20,000 units contracted; however, the selling price per unit of inventory on this date was $4.75.

Required

Prepare any necessary journal entries or disclosures on the following dates. *Note:* The selling prices above are net of selling costs.

a. November 1, 2020 (initiation of contract).
b. December 31, 2020 (end of reporting period).
c. January 25, 2021 (purchase date).

Exercise 10-58
Recording Entry and Determining Effect on Net Income for Change in Accounting Principle **LO6**

Sterling Co. changed from FIFO to average cost on January 1, 2021. Inventory balances on December 31, 2021, under both methods follow. Sterling Co. has a December 31 year-end.

Inventory balances	2020	2019
Ending inventory, average cost	$15,000	$10,000
Ending inventory, FIFO	9,000	7,000

Required

a. Prepare the entry on January 1, 2021, to record the accounting change. Ignore taxes.
b. Show how its 2020 income is impacted when retroactively adjusted for the change in accounting principle. Ignore taxes.

Exercise 10-59 Recording Entry and Determining Effect on Reporting for Change in Accounting Principle **LO6**
Hint: See Demo 10-6

Refer to the information in Exercise 10-58. Assume that instead the company is changing from average cost to FIFO in 2021 for reporting inventory.

Required

a. Prepare the entry in the company's accounting system on January 1, 2021, to record the accounting change. Ignore taxes.
b. For external reporting purposes on December 31, 2021, the company reports comparative balance sheets for 2021 and 2020. What amount of inventory is reported on the December 31, 2020, balance sheet?
c. What cumulative effect of change in accounting principle is reported as an adjustment to retained earnings in 2021? In 2020? Assume comparative financial statement presentation of years ended December 31, 2021, and 2020. Ignore taxes.

Exercise 10-60 Change from Average Cost to FIFO: Reporting **LO6**

Park Company began operations on January 1, 2018. The following information includes the financial statement impacts of both the average cost and FIFO inventory methods.

	Inventory Balance		Cost of Goods Sold			
	Average Cost	FIFO	Average Cost	FIFO	Sales	Operating Expenses
December 31, 2018 . . .	$30,000	$35,000	$150,000	$145,000	$250,000	$40,000
December 31, 2019 . . .	34,000	48,000	160,000	151,000	255,000	40,400
December 31, 2020 . . .	37,500	61,500	170,000	160,000	230,000	40,800

Required

a. Prepare three-year comparative income statements assuming the company uses the average cost inventory method.
b. Prepare three-year comparative income statements assuming the company uses the FIFO inventory method.
c. Prepare three-year comparative income statements assuming the company changes from the average cost method to the FIFO method in 2020.

Exercise 10-61 Change in Inventory Methods: Entries and Reporting **LO6**

Pier2 Company computed net income under the following two inventory methods for the recent four years. Ignore income taxes.

	Net Income	
Year	Average Cost Inventory	FIFO Inventory
2017	$180,000	$195,000
2018	185,000	190,000
2019	190,000	200,000
2020	200,000	205,000

Required

a. Prepare the January 1, 2020, journal entry assuming the company changed from average cost to FIFO in 2020.
b. Assuming the change in part *a*, compute net income reported in 2020, 2019, and 2018, assuming a comparative income statement with two prior years reported.
c. Prepare the January 1, 2020, journal entry assuming the company changed from FIFO to average cost in 2020.
d. Assuming the change in part *c*, compute net income reported in 2020, 2019, and 2018, assuming a comparative income statement with two prior years reported.
e. Instead, assume that the company changes from FIFO to LIFO beginning in 2020. The company is unable to estimate the LIFO amounts for earlier years. What entry does the company record for the change in accounting method on January 1, 2020?

Exercise 10-62 Recording Entries to Correct Inventory Errors **LO7**

A company purchased merchandise on credit at December 31, 2020, for $6,000. That merchandise was in its warehouse that same day. This purchase was *not* recorded in 2020 because the accounting department did not receive the invoice from the vendor. In 2021, the invoice was received, reported, and paid.

Required

a. Assuming that financial statements are not yet issued for 2020 when this error is discovered, what journal entry, if any, is recorded? The company applies a periodic inventory system.

b. Assuming that financial statements are already issued for 2020 when this error is discovered, what journal entry, if any, is recorded? Ignore income taxes.

Exercise 10-63
Analyzing Impact of Inventory Errors on Reporting **LO7**

The records of Largo Company reveal the following.

Sales revenue		$205,000
Cost of goods sold		
Beginning inventory	$ 10,000	
Purchases	105,000	
Goods available for sale	115,000	
Ending inventory	25,000	(90,000)
Gross margin		115,000
Operating expenses		(60,000)
Income (pretax)		$ 55,000

The following errors were found and they have *not* been corrected.

1. Revenues collected in advance of $5,000 are included in Sales Revenue.
2. Accrued operating expenses not recognized of $7,000.
3. Goods costing $10,000 are incorrectly included in ending inventory (they are being held on consignment from Carter Inc.). No purchase was recorded.
4. Goods costing $5,000 are correctly included in ending inventory; however, no purchase was recorded (assume a credit purchase).

Required

a. Prepare a revised income statement on a correct basis.
b. Identify incorrect amounts on the balance sheet *if the errors were not corrected.*

Exercise 10-64
Analyzing Impact of Inventory Errors on Accounts **LO7**

The following table has six *separate* descriptions of inventory errors assuming the use of a periodic inventory system.

Inventory Error	Cost of Goods Sold	Pretax Income	Ending Inventory
a. Ending inventory overstated			
b. Ending inventory and purchases overstated			
c. Ending inventory understated			
d. Ending inventory and purchases understated			
e. Beginning inventory overstated			
f. Beginning inventory understated			

Required

For each of the six *separate* scenarios, indicate what effect—overstated, understated, or no effect—the error has on cost of goods sold, pretax income, and ending inventory. Ignore income taxes.

Exercise 10-65
Estimating Inventory Using Retail Inventory Method—Conventional **LO8**
Hint: See Demo 10-8C

Retail-Mart values its inventory using the conventional retail inventory method. It discloses the following data for the month of June 2020.

	Cost	Selling Price
Inventory, June 1	$ 53,800	$ 80,000
Markdowns		21,000
Markups		29,000
Markdown cancellations		10,000
Markup cancellations		9,000
Purchases	173,200	223,600
Sales		250,000
Purchase returns and allowances	3,000	3,600
Sales returns and allowances		10,000

Required

Compute estimated inventory at June 30, 2020, using the conventional retail inventory method.

AICPA adapted

Exercise 10-66
Estimating Inventory Using Retail Inventory Method—Conventional
LO8

Wally-Mart values its inventory using the conventional retail inventory method. It discloses the following data for a recent period.

	At Cost	At Retail
Beginning inventory	$101,000	$150,000
Purchases	323,000	563,000
Purchases returns	6,000	10,000
Freight-in	8,000	
Additional markups		12,000
Additional markup cancellations		5,000
Markdowns		9,000
Markdown cancellations		2,000
Sales		540,000
Sales returns (and restored to inventory)		6,000

Required
Compute estimated ending inventory for the period end using the conventional retail inventory method.

Exercise 10-67
Estimating Inventory Using Retail Inventory Method—Conventional
LO8

Outlet Store applies the conventional retail inventory method. Information relating to the computation of inventory for 2020 follows. Estimated normal spoilage is 2% of sales.

	At Cost	At Retail
Beginning inventory	$ 40,000	$ 80,000
Sales		600,000
Purchases	300,000	590,000
Freight-in	8,000	
Markups		60,000
Markup cancellations		20,000
Markdowns		25,000
Markdown cancellations		5,000

Required
Calculate estimated ending inventory for 2020 using the conventional retail method.

Exercise 10-68
Estimating Inventory Using Retail Inventory Method—Average Cost
LO8

Rainey Retailers disclosed the following data for January.

	At Cost	At Retail
Beginning inventory	$ 20,000	$ 26,000
Sales		310,000
Sales returns (items restored to inventory)		5,000
Purchases	150,000	300,000
Purchases returns	3,000	6,000
Freight-in	9,000	

Required
Calculate estimated ending inventory using the retail inventory method at average cost.

Exercise 10-69
Calculating Cost to Retail Percentage and Markdowns Using Retail Inventory Method—Conventional
LO8

Baldor Company reports inventory at cost of $30,000 and retail of $65,000 on January 1, 2020. Purchases in 2020 are $20,000 at cost and $30,000 at retail. Sales for 2020 are $79,000. It made additional markups of $8,000 (with cancellations of $3,000). Baldor uses the conventional retail inventory method and estimates the cost of ending inventory at $10,000. Markdowns were taken during the year but the dollar amount is unavailable.

Required

a. Compute the cost ratio.
b. Compute net markdowns.

Exercise 10-70
Defining Chapter Terms
LO1, 2, 3, 4, 5, 6, 7, 8

Terms and phrases relating to concepts discussed in this chapter along with descriptions of those terms and phrases follow.

Key Inventory Terms and Phrases	Description of Terms and Phrases
___ 1. Net realizable value	*a*. Requires retroactive restatement of financial statements
___ 2. Lower-of-cost-or-market	*b*. Method for valuing inventory applying to LIFO and retail methods
___ 3. Allowance to reduce inventory to net realizable value	*c*. Cancellation of additional markup
___ 4. Gross profit method	*d*. Inventory estimation that is not acceptable under GAAP
___ 5. Estimated loss on purchase commitment	*e*. Method that approximates lower-of-cost-or-market
___ 6. Change in inventory method from average cost to FIFO	*f*. Not usually practical to retroactively restate or adjust financial statements
___ 7. Change from FIFO to LIFO	*g*. Reduction in original sales price
___ 8. Markdown	*h*. Selling price net of completion and disposal costs
___ 9. Additional markup cancellation	*i*. Theft of inventory that exceeds expectations
___ 10. Retail inventory method—Conventional Method	*j*. Dollar amount required to purchase an inventory item
___ 11. Abnormal casualty loss	*k*. Recorded when contract price is greater than market price
___ 12. Replacement cost	*l*. Requires net markups and markdowns in cost-to-retail percentage
___ 13. Retail inventory method—Average Method	*m*. Adjusted in accounting records in the period discovered
___ 14. Material error	*n*. Allows for estimation of inventory values when multiple items are purchased at one price
___ 15. Relative sales value method	*o*. Contra inventory account

Required

Match each term, 1 through 15, with the best description *a* through *o*.

Problems

Problem 10-71
Valuing Inventory Using Lower-of-Cost-or-Net Realizable Value **LO1**

Printer Inc. discloses the following ending inventory data.

Classification	Quantity	Cost per Unit	NRV per Unit
Paper			
Stock X	400	$300	$330
Stock Y	120	250	230
Ink			
Stock D	40	70	65
Stock E	20	55	62
Toner			
Stock A	16	75	70
Stock B	8	95	80
Stock C	14	100	110

Required

a. Determine the valuation of inventory at cost and at the lower-of-cost-or-net realizable value assuming application by (a) individual items, (b) classifications, and (c) total inventory. The unit costs of the three categories are significantly different; however, within each category the unit costs are similar.

b. Prepare the entry to record the ending inventory for *each* approach in part *a* assuming any inventory holding loss is recognized as a separate loss and reduces inventory through an allowance account.

c. Of the three applications in part *a*, which one appears preferable in this situation? Explain.

SEARS HOLDINGS CORP. [SHLD]

Real World—PROPERTY AND EQUIPMENT

Sears Holdings Corporation disclosed its policy on capitalizing costs subsequent to acquisition in a recent Form 10-K.

> Property and equipment are recorded at cost, less accumulated depreciation. Additions and substantial improvements are capitalized and include expenditures that materially extend the useful lives of existing facilities and equipment. Maintenance and repairs that do not materially improve or extend the lives of the respective assets are expensed as incurred.

REVIEW 11-7 LO11-7 Subsequent Acquisition Costs

Review MBC

The corporate office building of Lorge Inc. has an original cost of $2,000,000 and accumulated depreciation of $1,000,000 at the beginning of the current year. During the current year, the following expenditures relating to the building are made.

a.	Incurred ordinary repairs	$ 38,000
b.	Completed an extension to the building adding 20 additional office spaces	750,000
c.	Removed original roof (cost of $200,000 and 50% depreciated) and replaced it with a new roof (solar enhanced)	400,000
d.	Completed an update to the electrical system (old costs not known)	120,000

More Practice: 11-60, 11-61, 11-62
Solution on p. 11-49.

Required

Prepare journal entries to record each event *a* through *d* assuming all items are paid in cash.

LO 11-8 Account for disposal of property, plant, and equipment

LO 11-8 Overview

Disposal of Property, Plant, and Equipment
- May be voluntary or involuntary
- Update depreciation expense to time of disposal
- Record gain or loss for the difference between proceeds and net book value

The disposal of plant assets can be *voluntary* (a result of a sale, exchange, or abandonment) or *involuntary* (a result of a casualty such as a fire, a storm, or a government's exercise of its right of eminent domain). In either case, a gain or loss is recorded upon disposal (even if the company must replace the item in an involuntary disposal).

> **610-30-25-3** Involuntary conversions of nonmonetary assets to monetary assets are monetary transactions for which gain or loss shall be recognized even though an entity reinvests or is obligated to reinvest the monetary assets in replacement nonmonetary assets.

If the asset to be disposed of is subject to depreciation, it is depreciated through the date of disposal to update the recorded book value. Applicable property taxes, insurance premiums, and similar costs also are accrued through the date of disposal. Then, the original cost of the asset and its related accumulated depreciation are derecognized. The difference between the book value of a plant asset and the amount received on disposal is recorded as a gain or loss as illustrated in **Demo 11-8**. The **gain or loss on disposal** is reported in the income statement as part of income from continuing operations.

Demo 11-8 LO11-8 Disposal of Property, Plant, and Equipment

Demo MBC

Example One—Gain on Disposal On February 1, 2016, Brown Company paid $32,000 for office equipment with an estimated service life of five years and an estimated residual value of $2,000. Brown uses straight-line depreciation and decides to sell the asset on July 1, 2020, for $8,000. Record the entry on July 1, 2020, for the sale of the office equipment. Depreciation was last updated on December 31, 2019.

continued

Brief Exercise 11-37
Determining Gain or Loss on Disposal **LO8**

For each of the following three assets, determine the gain or loss on disposal.

Asset	Original Cost of Fixed Asset	Accumulated Depreciation, Balance	Cash Received upon Disposal of Asset	Gain or Loss
#1	$8,000	$6,000	$ 0	a
#2	8,000	5,000	1,500	b
#3	8,000	6,000	2,500	c

Brief Exercise 11-38
Assigning Value to Assets in Nonmonetary Exchange Lacking Commercial Substance **LO9**

Silo Inc. owns an asset originally costing $75,000, with accumulated depreciation of $38,000. The asset's fair value is $38,000. Silo trades in this old asset and pays $4,500 for a new asset. If the transaction lacks commercial substance, record Silo's journal entry for the exchange.

Brief Exercise 11-39
Assigning Value to Assets in Nonmonetary Exchange with Commercial Substance **LO9**

DD Inc. traded in its old building (costing $350,000 with accumulated depreciation of $100,000) for a new building with a fair value of $160,000 along with $80,000 cash from the trade. If the transaction has commercial substance, what amount does DD assign to the new building?

Brief Exercise 11-40
Assigning Value to Assets in Nonmonetary Exchange with Commercial Substance **LO9**

Mariot Inc. trades its old equipment for new equipment with a $12,000 fair ~~market~~ value. Mariot paid $7,000 cash on the exchange. If the transaction has commercial substance, what amount does Mariot assign to the new equipment?

Original cost of old equipment	$10,000
Accumulated depreciation on old equipment	6,000

Brief Exercise 11-41
Assigning Value to Assets in Nonmonetary Exchange Lacking Commercial Substance **LO9**

Mariot trades in its old equipment for new equipment with a $12,000 fair value. Mariot paid $7,000 cash on the exchange. If the transaction lacks commercial substance, what amount does Mariot assign to the new equipment?

Original cost of old equipment	$10,000
Accumulated depreciation on old equipment	6,000

Brief Exercise 11-42
Assigning Value to Assets in Nonmonetary Exchange Lacking Commercial Substance **LO9**

Mariot trades in its old equipment for new equipment. Mariot received $4,000 cash on the exchange. The fair value of the new equipment is $14,000. If the transaction lacks commercial substance, what amount does Mariot assign to the new equipment?

Original cost of old equipment	$10,000
Accumulated depreciation on old equipment	6,000

Exercises

Exercise 11-43
Recording Land Acquisition Costs **LO1, 3**

Following are descriptions of land purchases in four *separate cases*.

1. At the midpoint of the current year, a $40,000 check is given for land, and the buyer assumes the liability for unpaid taxes in arrears of $1,000 at the end of last year and those assessed for the current year of $900.
2. A company issues 14,000 shares of $1 par common stock with a fair value of $6 per share (based upon a recent sale of 10 shares) for land. The land is recently appraised at $80,000 by independent and competent appraisers.
3. A company's offer to purchase land for $8,000 cash two years ago was rejected. Instead, the company acquires the land by issuing 1,000 shares of $1 par common stock (fair value of the stock is $7.80 per share based on several recent large transactions under normal weekly stock trading volume).
4. A company issues 1,000 shares of $40 par common stock for land. The fair value was $60 per share at the time of the land purchase (stock sells regularly with an average daily volume of 5,000 shares). The seller had earlier offered to sell the land for $59,000 cash. Competent appraisers value the land at $61,000.

Required

a. Determine the cost used for recording the land acquired in each of the cases.
b. Record the journal entry for each case on the date of the land's acquisition.

Exercise 11-47
Recording Costs for Self-Constructed Asset **LO1**

Amethyst Company constructed a building and incurred the following costs directly associated with construction. The building is valued at $77,500 (fair value) upon completion.

Materials	$25,000
Labor	40,000
Incremental overhead	15,000
Interest on construction loan incurred before completion	2,500
Interest on construction loan incurred after completion	1,000
Total	$83,500

Required

Prepare summary journal entries to record costs of (1) construction and (2) completion of the building. Assume that all qualifying interest during the current year is capitalized to the building.

Exercise 11-48
Recording Acquisition Costs **LO1**

Following are three *separate* cases.

1. Equipment with a list price of $30,000 is purchased; terms are 2/10, n/30. Payment is made within the discount period.
2. Equipment with a list price of $20,000 is purchased; terms are 2/10, n/30. Payment is made after the discount period. Any purchase discounts lost are recorded as interest expense.
3. Equipment listed at $9,000 (less a 2% discount for cash purchases) is purchased for cash. To take advantage of this discount, the company simultaneously borrowed $8,000 from a bank by issuing a 60-day, 15% note, which is paid with interest at its maturity date. (Note: Do not record the entry for the issuance of the note.)

Required

Prepare journal entries for each *separate* case for (a) equipment acquisition, and (b) cash payment.

Exercise 11-49
Recording a Lump-Sum Acquisition **LO2**

Freeman Company purchased a tract of land on which were located a warehouse and an office building. The cash purchase price was $140,000 plus $10,000 in fees connected with the purchase. The following information relates to the property.

	Tax Assessment	Seller's Book Value	Original Cost
Land	$20,000	$10,000	$10,000
Warehouse	40,000	20,000	60,000
Building	60,000	50,000	80,000

Required

Prepare the journal entry to record this purchase.

Exercise 11-50
Recording a Lump-Sum Acquisition **LO2, 7**

Tires Outlet purchases the following used items at an auction for $40,000 cash: a drill press, a lathe, and a heavy-duty air compressor. The equipment is in excellent condition except for the electric motor on the lathe, which will cost $900 to replace with a new motor. Tires Outlet determines that selling prices for the used items are as follows: drill press, $8,400; lathe with an operational motor, $24,000; and air compressor, $10,500.

Required

Prepare the entry to record (a) acquisition of the equipment and (b) replacement of the motor.

Exercise 11-51
Recording Purchase of Equipment through Debt **LO3**
Hint: See Demo 11-3A

O'Reilly Company purchases equipment by making a down payment of $10,000 cash. In addition, O'Reilly signs a note requiring monthly payments of $2,000, starting one month after purchase and continuing for a total of 20 months. The contract calls for no interest, yet the prevailing interest rate is 12% on similar transactions.

Required

a. Record the entry required for the purchase of this equipment.
b. Record the entry to recognize interest expense, one month after this purchase.

Exercise 11-52
Recording Purchase of Equipment through Debt and Equity **LO3**

On January 1, 2020, Vale Inc. acquires equipment with a 10-year useful life by issuing a two-year, zero-interest bearing installment note payable when the market rate is 14% for this transaction. Terms are $7,000 cash payment immediately plus payments of $5,000 cash at the end of each of the next two years. The company uses the effective interest method to amortize interest expense and the straight-line method to estimate depreciation expense.

Required

a. Prepare the entry to record the purchase of this equipment.
b. Prepare the entry at the end of year one for (1) payment and interest and (2) depreciation expense.
c. Prepare the entry at the end of year two for (1) payment and interest and (2) depreciation expense.
d. Assume instead that Vale exchanged 100 shares of its own $1 par common stock along with $7,000 cash for the equipment. The stock was not actively traded but the equipment was estimated to have a fair value at the date of acquisition of $16,000. Prepare the entry to record the purchase.

Exercise 11-53
Recording Purchase of Equipment through Debt and Equity **LO3**

On January 1, 2020, Sidelines Company purchases equipment with an estimated 6-year useful life by making a $7,000 cash payment and issuing a noninterest-bearing note for $24,000 due in two years. The fair value of the equipment is unknown. An 11% annual interest rate is typical of this transaction. The company uses the effective interest method to amortize interest expense and the straight-line method to estimate depreciation expense.

Required

a. Prepare the entry to record the purchase on January 1, 2020.
b. Prepare the entry on December 31, 2020, to record (1) interest expense and (2) depreciation expense.
c. Indicate the balance sheet presentation related to this transaction as of December 31, 2020.
d. Prepare the entry on December 31, 2021, to record (1) interest expense and payment of the note and (2) depreciation expense.
e. Assume instead that Sidelines exchanged 500 shares of its own $10 par value common stock along with $7,000 cash for the equipment. At the date of the exchange, the stock was trading on the market at $40 per share. Prepare the entry to record the purchase of equipment.

Exercise 11-54
Recording Acquisition of Equipment through Donation **LO4**

A shareholder donated a building and the land on which it is located to Clemson Inc. The property was reliably appraised at a value of $160,000 (25% related to the land). Clemson Inc. paid transfer costs of $4,000 cash. The building has an estimated remaining life of 25 years (no residual value).

Required

Prepare Clemson's entries to record the (a) transfer of the building and land, and (b) depreciation expense at the end of the first year. Assume a full year of depreciation and use of the straight-line method.

Exercise 11-55
Computing Interest Capitalization Amounts **LO5**
Hint: See Demo 11-5

Whit Company spent a total of $300,000 cash on a construction project during 2018 and 2019. During 2020, Whit spends an additional $600,000 evenly during the year on the project and completes construction at the end of 2020. Debt outstanding during 2020 follows.

Accounts payable average balance	$ 50,000
10% bond payable	700,000
12% construction loan	200,000

Required

a. Compute the amount of interest to be capitalized in 2020.
b. Calculate the amount of interest to expense in 2020.

Exercise 11-56
Computing and Recording Interest Capitalization **LO5**
Hint: See Demo 11-5

Weld Corporation is constructing a plant for its own use. Weld capitalizes interest on an annual basis. The following expenditures are made during the current year: January 1, $30,000; July 1, $290,000; September 1, $800,000; and December 31, $2,110,000. The following debts were outstanding throughout the current year.

Construction note, 12%	$100,000
Short-term note payable, 15%	400,000
Accounts payable (noninterest-bearing)	400,000

Required

a. Compute the amount of interest to be capitalized in 2020.
b. Calculate the amount of interest to expense in 2020.
c. Prepare the 2020 summary journal entry to record the construction expenditures and interest, assuming that construction is not complete on December 31, 2020.

1.	Continuing, frequent, and low-cost repairs	$17,000
2.	Added a new storage shed attached to the building; estimated useful life of eight years	36,000
3.	Removed roof with original cost, $40,000; replaced it with guaranteed, modern roof	50,000
4.	Unusual and infrequent repairs due to damage from flood; repairs did not increase the use, value, or the economic life of the asset	6,000
5.	Complete overhaul of the plumbing system (old costs unknown)	12,500

Required

Prepare the journal entry to record each item 1 through 5, assuming all items are paid in cash.

Exercise 11-62
Classifying Subsequent Expenditures **LO7**

The following items relate to company expenditures after the original acquisition of property, plant, and equipment.

____ 1. An improvement made to equipment to increase its fair value and its production capacity by 25% without extending the equipment's useful life.
____ 2. An improvement made to equipment to extend the equipment's useful life by 25%.
____ 3. Minor repair of a roof due to hail damage.
____ 4. Replacement of a roof due to hail damage where the book value of the original roof is known.
____ 5. Replacement of a roof due to hail damage where the book value of the original roof is unknown.
____ 6. Rearrangement of a manufacturing assembly line expected to materially impact the current year.
____ 7. Rearrangement of a manufacturing assembly line expected to materially impact the next three years.
____ 8. Major repair to an equipment engine that will increase the useful life of the asset.

Required

Identify the proper accounting treatment for each item *1* through *8* from the following: (a) capitalize and depreciate, (b) expense in current year, (c) decrease accumulated depreciation, or (d) record as new asset after removing old asset.

Exercise 11-63
Recording Fixed Asset Disposal **LO8**
Hint: See Demo 11-8

Manchester Company sells equipment on June 1, 2021, for $139,000 cash. Manchester incurred $800 of removal and selling costs on disposal. The equipment cost $250,000 when it was purchased on January 2, 2018. Its estimated residual value and useful life were $40,000 and 10 years, respectively. Manchester uses straight-line depreciation and records annual depreciation on each December 31.

Required

a. Prepare the journal entries needed to record the asset disposal on June 1, 2021.
b. Record the journal entries if the equipment were abandoned (zero fair value) on June 1, 2021.

Exercise 11-64
Recording Fixed Asset Disposal **LO1, 8**

On April 1, 2020, one of the two large production machines used by Evert Company stripped a gear, causing major internal damage. On April 5, 2020, the company decided to purchase a new machine (cost of $182,500) so that production could continue. On January 1, the accounts showed the following for the old machine: original cost, $90,000; accumulated depreciation, $63,000 (20-year life; no residual value). The company did not accept a trade-in offer of $13,500. Instead, the old machine was sold on April 5 to another company for $24,000. Evert spent $3,000 cleaning and $1,000 moving the machine prior to shipping. Insurance premiums (prepaid) on the old machine were $450; the unused portion of the premium is applied to the new machine. That insurance was paid on January 1 and covered the period January 1 through December 31.

Required

a. Record the entry for Evert Company to purchase equipment on April 5, 2020.
b. Record the entries for Evert Company on April 5, 2020, to dispose of the old machine, including any required updates for depreciation and for insurance expense.

Exercise 11-65
Recording Asset Exchanges **LO9**

Minneapolis Inc. has equipment with an original cost of $35,000 and accumulated depreciation of $20,000. This equipment was traded in for new equipment with a list price of $40,000. The new equipment can be purchased without a trade-in for $37,500 cash. The difference between the fair value of the new asset and the fair value of the old asset will be paid in cash.

Required

Prepare the entry to record acquisition of the new equipment under each of the following *separate cases*.

a. The new equipment is purchased for cash with no trade-in.
b. The transaction has commercial substance. The old equipment is traded in, and $25,000 cash is paid.
c. The same as in part *b* except that the transaction lacks commercial substance.

Exercise 11-66
Recording Asset Exchanges **LO9**

Miley Corp. exchanges old equipment that cost $10,000 (accumulated depreciation of $4,500) for new equipment. The fair value of the new equipment is $8,000. The fair value of the old equipment cannot be reliably estimated.

Required
Prepare the entry to record acquisition of the new equipment under each of the following separate cases.

a. Transaction has commercial substance. No cash is involved.
b. Transaction has commercial substance. Cash of $3,000 is paid by Miley.
c. Transaction lacks commercial substance. No cash is involved.
d. Transaction lacks commercial substance. Cash of $1,000 is paid by Miley.
e. Transaction lacks commercial substance. Cash of $2,000 is received by Miley.

Exercise 11-67
Reporting an Asset Exchange **LO9**

Clarksten Co. and Keyes Inc. exchange equipment. Information related to this exchange for both companies follows.

	Clarksten Co.	Keyes Inc.
Equipment given up:		
Equipment (original cost)	$30,000	$35,000
Accumulated depreciation	10,000	12,000
Fair value	18,000	24,000
Cash exchanged	(6,000)	6,000

Required
a. Record the exchange for *Clarksten Co.* assuming the transaction has commercial substance.
b. Record the exchange for *Keyes Inc.* assuming the transaction has commercial substance.
c. Record the exchange for *Clarksten Co.* assuming the transaction lacks commercial substance.
d. Record the exchange for *Keyes Inc.* assuming the transaction lacks commercial substance.

Exercise 11-68
Reporting an Asset Exchange **LO9**

Two independent companies, Bevine and Shalton, are in the home-building business. Each owns a tract of land for development, but each company prefers to build on the other's land. Accordingly, they agree to exchange their land. An appraiser is hired, and from the appraiser report and the companies' records, the following information is drawn.

Land	Bevine Co.	Shalton Co.
Cost (same as book value)	$ 80,000	$50,000
Fair value based on appraisal	100,000	90,000

The exchange of land is made. Based on the difference in appraised values, Shalton also pays $10,000 cash to Bevine. The transaction lacks commercial substance.

Required
a. For financial reporting purposes, what does *Bevine* recognize as a pretax gain on this exchange?
b. For financial reporting purposes, what does *Shalton* recognize as a pretax gain on this exchange?
c. After the exchange, at what value does *Bevine* record its newly acquired land?
d. After the exchange, at what value does *Shalton* record its newly acquired land?

Exercise 11-69
Recording an Asset Exchange **LO9**

Science Center trades an electron microscope with an original cost of $200,000 and accumulated depreciation of $80,000 for new optical equipment. The old equipment has a fair value of $160,000 at trade-in time, and Science Center receives $30,000 cash on the trade-in. The transaction lacks commercial substance.

Required
Prepare the entry for Science Center to record the exchange.

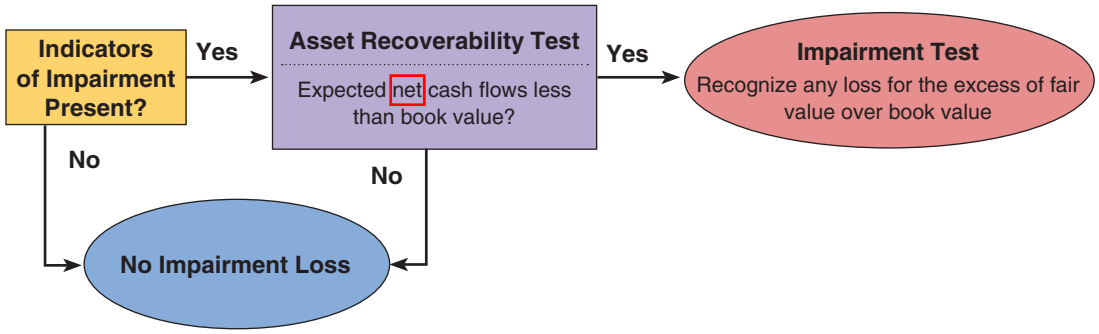


EXHIBIT 12-4
Accounting for Impairment of Property, Plant, and Equipment

Indicators of Impairment

There is no requirement to periodically review assets for impairment. Instead, companies should review for impairment whenever events or changes in circumstances imply that the carrying value might not be recoverable. The following are examples of factors suggesting that an asset currently in use is impaired.

- A decline in fair value of the asset.
- A change in manner in which the asset is used; for example, current underutilization of capacity.
- A change in legal or business climate or an adverse action by a regulator; for example, a plant closing due to noncompliance with environmental regulations.
- A cost overrun on assets being acquired or constructed.
- A current-period cash-flow loss combined with a history of losses associated with the asset.

If one of the above (or a similar event or circumstance) is present, the asset must be reviewed for impairment.

360-10-35-21 A long-lived asset (asset group) shall be tested for recoverability whenever events or changes in circumstances indicate that its carrying amount may not be recoverable.

Step 1—Asset Recoverability Test

If a condition indicates possible impairment, the company performs the **asset recoverability test**.

Asset impaired if: Recoverable cost < Carrying value

One of the assumptions inherent in reporting assets at cost less accumulated depreciation is that carrying value will be recovered. Otherwise, an impairment loss is *implied*. The **recoverable cost** of an asset in use equals the total estimated future net cash inflows (*undiscounted*) expected to be generated by the asset through use and disposal. Net cash inflows are the cash flows expected to be generated by the asset less the cash flows needed to obtain the inflows. If recoverable cost is less than carrying value, the company moves to step 2.

360-10-35-17 An impairment loss shall be recognized only if the carrying amount of a long-lived asset (asset group) is not recoverable and exceeds its fair value. The carrying amount of a long-lived asset (asset group) is not recoverable if it exceeds the sum of the undiscounted cash flows expected to result from the use and eventual disposition of the asset (asset group) . . . An impairment loss shall be measured as the amount by which the carrying amount of a long-lived asset (asset group) exceeds its fair value.

Step 2—Impairment Test

An impairment loss is *recognized* for an asset in use if its fair value is less than its carrying value (net of depreciation to date). The loss is measured as follows.

Impairment loss = Asset carrying value − Asset fair value

The loss is reported as a component of income from continuing operations.

12-7. Explain the effects of depreciation on (a) the income statement and (b) the balance sheet.
12-8. In estimating the service life of a fixed asset, obsolescence should be considered. Explain this factor.
12-9. Explain the relation of depreciation to (a) cash flow and (b) fixed assets.
12-10. Explain the relation between depreciation and replacement of the assets being depreciated.
12-11. Compare the effect of the straight-line and units-of-production methods of depreciation on the per unit cost of output for a manufacturing company.
12-12. What is meant by accelerated methods of depreciation? Under what circumstances would these methods generally be appropriate?
12-13. Which method, sum-of-the-years'-digits or double-declining-balance, will always produce the larger amount of depreciation in the first year of an asset's useful life? Support your response.
12-14. Explain the basic accounting policy problems that arise with respect to depreciation when a company's reporting year and the asset year do not coincide. Consider the case of a company that closes its books on June 30 and has purchased a depreciable asset on January 1.
12-15. Explain when and in what amount an impairment loss is recognized on a plant asset in use.
12-16. Explain when and in what amount an impairment loss is recognized on a plant asset held for disposal.
12-17. How are the composite and group depreciation systems similar?
12-18. Explain the difficulties that may arise when group or composite depreciation is used.
12-19. What are some of the advantages of using group or composite depreciation systems?
12-20. What are the differences between natural resources and depreciable assets?
12-21. Describe the types of costs incurred by companies in connection with natural resources. Generally, how is each treated for accounting purposes when incurred?
12-22. How do companies determine the amount of depletion to be charged as an expense each accounting period?
12-23. Describe the successful-efforts method and the full-cost method of accounting for exploration costs. Which method is required for financial reporting?

Brief Exercises

Brief Exercise 12-24
Computing Straight-Line Depreciation **LO1**

On January 1, 2020, equipment is purchased for $240,000. The company incurred installation costs of $600 and freight charges on delivery of $1,000. The equipment has a $20,000 residual value and an expected useful life of five years.

a. Determine depreciation expense for 2020 using the straight-line depreciation method.
b. How does the answer to part *a* change if the appraised value of equipment were $185,000 on December 31, 2020?

Brief Exercise 12-25
Computing Units-of-Production Depreciation **LO1**

On January 1, 2020, equipment is purchased for $150,000 that has an estimated residual value of $1,000 and an estimated useful life of 10 years. The equipment is expected to produce 50,000 units of output over its useful life. The equipment produced 5,500 units in its first year. Determine depreciation expense for 2020, using units-of-production depreciation method.

Brief Exercise 12-26
Computing Depreciation Using Multiple Depreciation Methods **LO1**

On January 1, 2020, Walker Inc. acquired equipment for $40,000. The expected useful life is 10 years and the residual value is $800. Total service hours for the equipment are estimated to be 10,000 while actual hours for 2020 were 900. Compute depreciation expense in 2020, under the following methods.

a. Straight-line
b. Sum-of-the-years'-digits
c. Double-declining-balance
d. Units-of-production

Brief Exercise 12-27
Computing Partial Period Depreciation Using Multiple Depreciation Methods **LO2**
Hint: See Demo 12-2A

On August 31, 2020, DHS Company acquired equipment for $40,000. The expected useful life is 5 years and the residual value is $800. Compute depreciation expense in 2020 under the following methods.

a. Straight-line
b. Sum-of-the-years'-digits
c. Double-declining-balance

Brief Exercise 12-28
Computing Partial Period, Straight-Line Depreciation **LO2**

Garcia Company purchased a building for $625,000 on March 1, 2020, with an estimated residual value of $50,000. Assuming a useful life of 40 years and that the company uses the straight-line depreciation method, compute depreciation expense for 2020.

Brief Exercise 12-29 Computing Partial Period, Double-Declining-Balance Depreciation **LO2**

Silhouette Company purchased a machine that was installed and placed in service on July 1, 2020, at a cost of $60,000, including installation cost. Salvage value was estimated at $10,000. The machine is being depreciated over 10 years by the double-declining-balance method. For the year ended December 31, 2021, what amount should Silhouette report as depreciation expense?

Brief Exercise 12-30 Computing Partial Period, Sum-of-the-Years'-Digits Depreciation **LO2**

A machine with a five-year estimated useful life and an estimated 10% salvage value was acquired on April 30, 2019, for $56,000. On December 31, 2020, what is the balance of accumulated depreciation on this asset, assuming the sum-of-the-years'-digits depreciation method?

Brief Exercise 12-31 Computing Composite Depreciation **LO3**

Taser Company owns the following assets acquired on January 1, 2020.

Asset	Cost	Residual Value	Estimated Useful Life
A	$60,000	$1,000	10 years
B	15,000	0	5 years
C	70,000	2,000	8 years

a. Compute the composite annual depreciation rate. Round to two decimals.
b. Compute the composite group useful life.
c. Compute composite depreciation expense for 2020.

Brief Exercise 12-32 Computing Depreciation with an Estimate Change **LO4**
Hint: See Demo 12-4

Whitney Company purchases equipment on July 1, 2020, for $34,000. This equipment has a useful life of five years and a residual value of $4,000. The company uses the straight-line depreciation method. On January 1, 2022, the company extended the estimate of the total useful life to six years and adjusted the salvage value to $2,000. Compute depreciation expense for 2022.

Brief Exercise 12-33 Computing Depreciation with a Change in Depreciation Method **LO5**

Whitney Company purchased equipment on January 1, 2020, for $90,000. This equipment has a useful life of 6 years and a residual value of $5,000. The company uses the double-declining depreciation method. On January 1, 2023, the company changes its depreciation method to the straight-line method. Compute depreciation expense for 2023.

Brief Exercise 12-34 Computing Depreciation Expense for Change in Useful Life **LO4**

Phelps Company purchases equipment on January 1, 2019, for $36,000 which will be depreciated using the sum-of-years'-digits method. The equipment has a residual value of $6,000 and a useful life of three years. In 2020, Phelps decides that the machine has an original total useful life of four years and $3,000 salvage value. What is depreciation expense for 2020?

Brief Exercise 12-35 Computing Depreciation Expense for Change in Depreciation Method **LO5**
Hint: See Demo 12-5

Phelps Company purchases equipment on January 1, 2019, for $36,000 which will be depreciated using the sum-of-years'-digits method. The equipment has a residual value of $6,000 and a useful life of three years. In 2020, Phelps changes its depreciation method for equipment to the straight-line method. What is depreciation expense for 2020?

Brief Exercise 12-36 Recording Depreciation Error Correction **LO6**

Whitney Company purchased equipment on January 1, 2020, for $90,000. This equipment has a useful life of ten years and a residual value of $5,000. The company uses the straight-line depreciation method. In 2021, the company discovered that it had incorrectly recorded depreciation for 2020 as $5,800. Ignoring income taxes, record the correcting entry on January 1, 2021.

Brief Exercise 12-37 Recording Depreciation Error Correction **LO6**

Ordinary repairs of $10,000 in January of 2018 were inadvertently debited to an equipment account. The equipment was originally purchased in January of 2018 and had a useful life of 6 years. Record the entry to correct the error assuming that the error was discovered in 2020. Ignore income taxes for simplification.

Brief Exercise 12-38 Recording Depreciation Error Correction **LO6**

Assume the same information in Brief Exercise 12-37 *except* that the error was discovered in January of 2019, before the accounts were closed for 2018. Record the entry to correct the error.

Brief Exercise 12-39 Identifying and Recording Impairment Loss on Fixed Asset **LO7**
Hint: See Demo 12-7

Supreme Inc. has equipment with an original cost of $800,000, and accumulated depreciation of $300,000. Supreme is aware of a general market decline in the value of this equipment due to upgrades that are now available. Supreme estimates the total remaining future net cash inflows from operating the equipment to be $400,000. The fair value of the equipment is estimated to be $300,000 based on conditions in the local market. Prepare the entry, if any, that Supreme should make to record the decline in value.

Brief Exercise 12-40 Identifying and Recording Impairment Loss on Fixed Asset **LO7**

Assume the same information in Brief Exercise 12-39, except that the original cost of the equipment is $650,000. Prepare the entry, if any, that Supreme should make to record the decline in value.

Brief Exercise 12-41 Recording Impairment Loss on Asset Held for Sale **LO8**
Hint: See Demo 12-8

WellCon Corporation, a calendar-year corporation, plans to dispose of a plant asset with a carrying value of $50,000 (cost is $75,000 and accumulated depreciation is $25,000) on December 31, 2020, after recording depreciation on the asset. The fair value of the asset is $40,000 at the time, and estimated costs to sell are $5,000. The asset remains in WellCon's possession one year later. The fair value and estimated costs to sell are revised to $32,000 and $4,000, respectively, on that date. Provide the entries on December 31, 2020, and 2021, to record the impairment loss and revaluation.

Brief Exercise 12-42 Recording Impairment Loss on Asset Held for Sale **LO8**
Hint: See Demo 12-8

Assume the same information in Brief Exercise 12-41, *except* that the fair value and estimated costs to sell are revised to $42,000 and $2,000 on December 31, 2021. Provide the entries on December 31, 2020, and 2021, to record the impairment loss and revaluation.

Brief Exercise 12-43 Computing Asset Ratios **LO9**
Hint: See Demo 12-9

The following information relates to **Macy's Inc.**

$ millions	Total Assets	Revenue	Net Income
Fiscal Year 2015.	$20,576	$27,079	$1,070
Fiscal Year 2014.	21,330		

Macy's fiscal years for 2015 and 2014 end on January 30, 2016, and January 31, 2015, respectively.

a. Compute the asset turnover ratio for fiscal year 2015.
b. Compute the return on assets ratio for fiscal year 2015.

Brief Exercise 12-44 Computing Depletion **LO10**
Hint: See Demo 12-10A

Mining Corporation bought land for $150,000 (residual value $10,000) that is estimated to yield 300,000 pounds of a removable natural resource. The amounts of natural resources extracted in 2020 and 2021 were 35,000 and 45,000 pounds, respectively. Determine depletion for 2020 and for 2021. Round the depletion rate to two decimals.

Brief Exercise 12-45 Recording Depletion Entries **LO10**

Western Mining Inc. acquires a zinc mine in January of 2020, at a cost of $1,200,000 with an estimated 360,000 tons of zinc. Western Mining Inc. also incurs costs of $118,000 to develop the area around the site necessary to access the mine. The land is estimated to have a value of $75,000 after the zinc is mined. At the end of 2020, 60,000 tons of zinc were mined and 50,000 tons were sold by December 31, 2020.

a. Record the entry for acquisition of the zinc mine.
b. Record the entries for depletion and for the cost of the sale of zinc in 2020.

Exercises

Exercise 12-46 Preparing Depreciation Schedules Using Various Depreciation Methods **LO1**

Frito Inc. acquired equipment on January 1, 2020, at a cost of $20,000 that is estimated to have a useful life of five years and a residual value of $5,000.

Required

Prepare a depreciation schedule showing annual depreciation expense, and year-end accumulated depreciation and book value over the life of the asset using the following methods.

a. Straight-line method.
b. Sum-of-the-years'-digits method.
c. Double-declining-balance method.

Exercise 12-47 Computing Depreciation Using Various Depreciation Methods **LO1**

To demonstrate the computations involved in several methods of depreciating a fixed asset, the following data are used for equipment purchased on January 1, 2020.

Cost and residual value		Estimated service life	
Acquisition cost.	$12,500	Years.	5
Residual value	500	Service hours	10,000
		Productive output (units).	24,000

Required

Compute annual depreciation using each of the following methods.

a. Straight-line depreciation: Compute the depreciation rate and amount for *each year*.
b. Units-of-production method using service hours as a measure of input: Compute the depreciation rate and amount of depreciation expense for the *first year* assuming 2,200 service hours of actual operation.
c. Units-of-production method using units produced as a measure of output: Compute the depreciation rate and amount of depreciation expense for the *first year* assuming 4,000 units of output.
d. Sum-of-the-years'-digits method: Compute the depreciation amount for *each year*.
e. Double-declining-balance method: Compute the depreciation amount for *each year*.

Exercise 12-48 Preparing Depreciation Schedules Using Various Depreciation Methods **LO1**

ISPN Company acquired equipment that cost $36,000 on January 1, 2020, which will be depreciated on the assumption that it will last six years and have a $2,400 residual value. Several possible methods of depreciation are under consideration.

Required

Prepare a schedule that shows annual depreciation expense, and year-end accumulated depreciation and book value over the asset's useful life assuming the following.

a. Sum-of-the-years'-digits depreciation method.
b. Units-of-production depreciation method. Estimated output is a total of 105,000 units, of which 12,000 will be produced in the first year, 18,000 in the second and third years, 15,000 in the fourth year, and 21,000 in the fifth and sixth years.

Exercise 12-49 Identifying Depreciation Methods and Preparing Schedules **LO1**

Veto Company bought equipment on January 1, 2020, for $45,000. The expected life is 10 years, and the residual value is $5,000. Based on three acceptable depreciation methods, the annual depreciation expense and balance of accumulated depreciation at the end of 2020 and 2021 are shown below.

	Case A		Case B		Case C	
Year	Annual Expense	Accumulated Amount	Annual Expense	Accumulated Amount	Annual Expense	Accumulated Amount
2020 . . .	$9,000	$ 9,000	$4,000	$4,000	$7,273	$ 7,273
2021 . . .	7,200	16,200	4,000	8,000	6,545	13,818

Required

a. Identify the depreciation method used in each case A, B, and C.
b. Based on the answer to part *a*, prepare a depreciation schedule that shows annual depreciation expense, and year-end accumulated depreciation and book value over the life of the asset for each case A, B, and C.
c. Which method results in the highest net income in year 1?
d. Which method results in the highest net income in year 10?

Exercise 12-50 Identifying Depreciation Methods **LO1**

On January 1, 2020, Urban Company acquired a machine for $15,000. The estimated residual value of the machine is $1,000, and the estimated useful life is five years. Urban's year-end is December 31.

Required

Identify the method of depreciation used by Urban if 2021 depreciation expense is (a) $3,600, (b) $2,800, or (c) $3,733.

Exercise 12-51 Recording and Preparing Schedule Using Sum-of-the-Years'-Digits Method Depreciation, Partial Year **LO2**

An asset was purchased October 1, 2020, costing $20,000, with a residual value of $4,000 and an estimated three-year useful life.

Required

a. Prepare a schedule of depreciation that shows annual depreciation expense, and year-end accumulated depreciation and book value over the useful life of the asset assuming that the company depreciated the asset using the sum-of-the-years'-digits method.
b. Record the entry to recognize depreciation in 2020.
c. Record the entry to recognize depreciation in 2021.

Exercise 12-52
Computing Partial Period Depreciation under Multiple Depreciation Methods **LO2**

To demonstrate the computations involved in several methods of depreciating a fixed asset, the following information is provided.

Cost and residual value		Estimated service life	
Acquisition cost	$12,500	Years	5
Residual value	500	Service hours	10,000
		Productive output (units)	24,000

Required

Compute the annual depreciation using each of the following methods assuming that the asset was purchased on August 1, 2020.

a. Straight-line depreciation: Compute the annual depreciation rate and amount for each year.
b. Units-of-production method using service hours as a measure of input: Compute the depreciation rate and amount for the *first partial year* assuming 900 service hours of actual operation.
c. Units-of-production method using units produced as a measure of output: Compute the depreciation rate and amount for the *first partial year* assuming 1,800 units of output.
d. Sum-of-the-years'-digits method: Compute the depreciation amount for *each year*.
e. Double-declining-balance method: Compute the depreciation amount for *each year*.

Exercise 12-53
Computing Partial Period Depreciation under Multiple Depreciation Methods **LO2**

Cruz Company purchased a computer on June 30, 2020, for $42,000. The computer had a salvage value of $12,000 and useful life of six years.

Required

a. Using the declining-balance depreciation method (200%), determine depreciation expense for 2021.
b. Using the declining-balance depreciation method (150%), determine depreciation expense for 2021.
c. Using the straight-line depreciation method, determine depreciation expense for 2021.

Exercise 12-54
Computing and Recording Depreciation Entries under Multiple Depreciation Methods **LO2**

Jackson Company's records show the following property acquisitions and disposals during the first two years of operations.

Year	Acquisition Cost of Property	Estimated Useful Life (Years)	Disposal Amount
2020	$50,000	10	—
2021	20,000	10	$7,000*

*Disposal relates to property acquired in 2020.

Property is depreciated for one-half year in the year of acquisition. Property disposed of is depreciated for one-half year in its year of disposal. Assume no residual values. There are no sale proceeds upon retirement.

Required

a. Compute depreciation expense for 2020 and for 2021, and the balances of the property and related accumulated depreciation accounts, at the end of each year under the straight-line method.
b. Prepare entries for the acquisition, periodic depreciation, and retirement of the property assuming the straight-line method.

Exercise 12-55
Computing Partial Period Depreciation under Multiple Depreciation Methods **LO2**
Hint: See Demo 12-2A

Asset	Acquisition Date	Depreciation Method	Acquisition Cost	Useful Life	Salvage Value
#1	Jan. 1, 2020	Straight-line	$10,000	4 years	$ 500
#2	Aug. 30, 2020	Double-declining-balance	14,500	8 years	1,000
#3	Feb. 1, 2021	Sum-of-the-years'-digits	18,000	4 years	800
#4	Jul. 31, 2021	Straight-line	33,800	8 years	0

Required

Compute depreciation expense for 2021 for each asset #1, #2, #3, and #4.

Exercise 12-56
Computing Depreciation and Recording Disposal Using Multiple Depreciation Conventions **LO2**
Hint: See Demo 12-2B

Whitney Company purchased equipment on July 12, 2020, for $34,000. This equipment has an estimated useful life of five years and an estimated residual value of $4,000. The company depreciates this asset using the straight-line depreciation method.

Required

a. Compute depreciation using the following variations to the straight-line depreciation method.
1. Compute depreciation for 2020 using the exact date outstanding, commencing depreciation on July 13, 2020, and using 360 days as the allocation base.
2. Compute full year, annual depreciation for 2020 based on the balance in the equipment account at the beginning of the period.
3. Compute full year, annual depreciation for 2020 based on the balance in the equipment account at the end of the period.
4. Compute depreciation for 2020 assuming one-half of a year's depreciation in both the year of purchase and the year of retirement, regardless of the date of purchase or retirement.
5. Compute depreciation for 2020 assuming a full month of depreciation during the month of purchase and no depreciation in the month of disposal.

b. Assume that the asset was retired on January 1, 2023. Prepare the entry for disposal of the asset assuming that the company uses the exact date outstanding to calculate depreciation. How does the answer differ if the company used the full year (beginning of the period) depreciation method?

Exercise 12-57
Recording Depreciation of Post Acquisition Costs **LO2**

Foster Company purchased a new computer system on January 2, 2020, for $1,200,000. The system has a useful life of six years, considering obsolescence. Its residual value is $20,000. Foster uses the straight-line depreciation method. The following events took place in 2021.

- **March 1**: Peripheral equipment costing $30,000 was added to the system. This equipment has a useful life of seven years and a residual value of $2,000. This equipment can be used with several different computers. Foster can replace the computers before the disposal of this equipment.
- **September 1**: An additional memory device was added to the computers, costing $250,000. This device has no utility apart from the computer system but will increase the total residual value of the computers to $40,000.

Required

Provide the general journal entry to record depreciation expense for 2021 on the computers and related equipment.

Exercise 12-58
Recording Composite Depreciation **LO3**

Wilson Company owns the following machines, all acquired on January 1, 2020.

Machine	Original Cost	Estimated Residual Value	Estimated Life (Years)
A	$14,000	$ 0	4
B	20,000	2,400	8
C	36,000	4,000	10
D	38,000	2,000	12

Required

a. Prepare a schedule based on straight-line depreciation that shows for each machine the following: original cost, residual value, depreciable cost, life in years, and annual depreciation.

b. Compute the composite depreciation rate rounded to four decimals (based on cost) and the composite life.

c. Prepare the entry to record 2020 composite depreciation.

Exercise 12-59
Recording Entries Using Composite Depreciation Method **LO3**

California Utilities owns a power plant that consists of the following assets, all acquired on January 1, 2020.

	Cost	Estimated Residual Value	Estimated Life (Years)
Building	$300,000	$10,000	30
Machinery	95,000	0	10
Other equipment	50,000	5,000	6

Required

a. Compute the total straight-line depreciation for 2020 on all items combined.

b. Compute the composite depreciation rate rounded to two decimals (based on cost) and the composite life of the plant.

Exercise 12-70
Recording Depreciation Error Correction **LO6**

Hondae Inc. purchased equipment on January 1, 2018, at a cost of $200,000. The company estimated a $5,000 salvage value and that the equipment will have a useful life of 10 years. The company elected to use the straight-line depreciation method. In entering the information for the asset into the depreciation system, the salvage value was inadvertently entered as $50,000 instead of $5,000. Ignoring income taxes, record the journal entry to correct the error discovered in 2021.

Exercise 12-71
Recording Error Corrections Related to Equipment **LO6**

On April 1, 2021, the following 2020 errors were discovered after the 2020 financial statements were issued.

a. Equipment purchased on January 1, 2020, with a cost of $20,000, salvage value of $1,200, and useful life of 8 years was incorrectly expensed as maintenance cost. The company uses the straight-line method to depreciate all equipment.

b. In 2020, fully depreciated equipment with an original cost of $25,000 and no salvage value was sold for $2,000. The company's entry for the sale was a debit to cash for $2,000 and a credit to equipment for $2,000.

c. Equipment purchased on June 30, 2020, with a cost of $65,000, salvage value of $4,500 and a useful life of 8 years was incorrectly entered into the depreciation system as having a useful life of 18 years.

Required

Prepare entries to correct each of the errors *a*, *b*, and *c*, discovered in 2021. Ignore income taxes.

Exercise 12-72
Recording and Reporting an Error, Comparative Statements **LO6**

Beckham Corporation had never been audited before December 31, 2020, the current year. Before the arrival of the auditor, the controller prepared comparative financial statements showing the results of 2019 and 2020. The accounts for 2020 have not been closed. The auditors discovered that an invoice dated January 2017 for $9,000 (paid in cash at the time) was debited to 2017 operating expenses, although it was for the purchase of equipment. The equipment has an estimated useful life of 10 years and no estimated residual value.

Reported income reflected on the financial statements prepared by the company (before discovery of the error) were 2017, $11,000; 2018, $22,000; 2019, $30,000; and 2020, $33,000. Disregard income tax considerations and assume that Beckham uses straight-line depreciation.

Required

a. Determine the correct net income for the years 2017, 2018, 2019, and 2020.

b. Provide the entries to record the (1) correction of the 2020 error and (2) depreciation expense for 2020.

c. Show how the correction is reported on the 2020 comparative balance sheet, statement of retained earnings, and income statement. Include a proper note disclosure.

Exercise 12-73
Recording Errors and Changes in Estimates **LO4, 6**

On January 1, 2018, Zale Company purchased a building for $400,000. The building was estimated to have a useful life of 30 years and no residual value and was depreciated using the straight-line method. In 2020, the company revised the estimated total useful life to 25 years and adjusted the residual to $5,000. In addition, in 2020, the company discovered that building improvements of $6,000 made in early 2019 were incorrectly expensed as repair expense. Disregard income tax considerations.

Required

a. Provide the journal entry to record the adjustment for the error discovered in 2020. Assume that the error is material to the company.

b. Provide the journal entry in 2020 to record depreciation expense.

Exercise 12-74
Identifying and Recording Impairment Loss on Plant Asset **LO7**

Three cases are provided below concerning a plant asset currently used in operations.

Case	Carrying Value	Recoverable Cost	Fair Value
A	$40,000	$60,000	$45,000
B	45,000	65,000	40,000
C	60,000	40,000	30,000

Required

a. Which case(s), if any, require an impairment loss to be recognized, and for what amount? Assume that indicators of impairment are present in all cases.

b. Record the entry for the impairment loss on the case(s) identified in part a (if any).

company is expected to restore the land for alternative uses after mining is complete. The present value of the restoration cost is estimated to be $100,000. The company extracted 180,000 tons of ore in 2020 and sold 150,000 tons.

Required

a. Record the entry for purchase of the mine and equipment. Assume all purchases were for cash.

b. Record the entry for (i) depletion of the ore and (ii) sale of ore in 2020. Round the depletion rate to two decimals.

c. Record the entry in 2020 for depreciation of the equipment assuming that the equipment is depreciated in proportion to the depletion of the mine.

Exercise 12-81
Calculating Depletion of Natural Resources and Related Cost of Goods Sold **LO10**

Arizona Mining Company acquired property with copper ore reserves estimated at 2 million pounds for $1,800,000. The property will have an estimated value of $100,000 after the ore has been extracted. Before any ore could be removed, it was necessary to incur $500,000 of developmental costs. In the first year, 200,000 pounds were removed and 160,000 pounds of ore were sold; in the second year, 400,000 pounds were removed and 410,000 pounds were sold. In the course of the second year's production, discoveries were made that indicated that if an added $1,460,000 is spent on developmental costs during the third year, future removable ore will total 2.5 million pounds. After these added costs were incurred, production for the third year amounted to 510,000 pounds with sales of 450,000 pounds.

Required

Calculate depletion *and* cost of goods sold that the company reports ~~on its income statement~~ for *each* of the three years. Assume FIFO (first-in, first-out) inventory flow.

Exercise 12-82
Calculating Depletion, Depreciation, and Ending Inventory **LO10**

Atlas Company purchased the rights to a copper mine for $3,000,000 on January 1, 2020. The mine is expected to provide 700,000 tons of copper. Atlas also purchased equipment on June 30, 2020, for $60,000 (residual value $5,000) that will be used for other projects. The estimated useful life is 6 years. In 2020, the company extracted 50,000 tons of copper and sold 30,000 tons.

Required

a. Calculate depletion for Atlas Company for 2020. Round depletion rates to two decimals.

b. Calculate depreciation expense for Atlas Company for 2020 assuming the company uses straight-line depreciation.

c. Determine ending inventory of copper on December 31, 2020.

Exercise 12-83
Calculating Depletion, Depreciation, and Ending Inventory **LO10**

Aerial Company acquired land containing natural resources that it planned to extract for $5 million on January 1, 2020. The amount allocated to the land is $200,000. Surveys estimate that the recoverable reserves will total 4 million tons. The company paid an additional $400,000 for development to prepare for the extraction of the resources. The company also incurred $200,000 to build roads with a useful life of 8 years. The roads will not be used for other projects. The company is obligated to restore the site after the extraction of resources. The present value of this obligation is $50,000. 480,000 tons of natural resources were extracted in 2020 and 450,000 tons were sold in 2020.

Required

a. Determine depletion for the natural resource in 2020.

b. Assuming that the company depreciates the cost of roads using units-of-production, determine depreciation expense for 2020.

c. Compute cost of goods sold for 2020, and ending inventory on December 31, 2020.

Exercise 12-84
Recording Entries Using the Full-Cost and Successful-Efforts Methods **LO10**
Hint: See Demo 12-10B

In 2020, Star Oil Co. incurred exploration costs related to exploring and drilling for oil. Costs were allocated to 5 drilling areas: Area 1: $50,000, Area 2: $25,000, Area 3: $15,000, Area 4: $70,000, Area 5: $45,000.

Of the 5 areas explored, Areas 2, 4, and 5 have successfully resulted in discovery of recoverable oil reserves while Areas 1 and 3 have been abandoned. The estimated value of the oil discovered in the successful drilling areas is $1,500,000.

Required

a. Record the entry for exploration costs using the successful-efforts method.

b. Record the entry for exploration costs using the full-cost method.

Exercise 12-85
Defining Chapter Terms **LO1, 2, 3, 4, 5, 6, 7, 8, 9**

Terms relating to concepts discussed in this chapter along with descriptions of the terms are included in the following two lists:

Chapter 12 Terms	Description of Terms
____ 1. Depreciation expense	*a.* Cost of fixed asset plus subsequent acquisition costs less accumulated depreciation
____ 2. Depreciable cost	*b.* Ratio that divides net sales by average total assets
____ 3. Book value	*c.* Expense fluctuates with changes in input or output units
____ 4. Straight-line depreciation	*d.* Ratio that divides net income by average total assets
____ 5. Units-of-production depreciation method	*e.* Allocation of expense over the life of a fixed asset
____ 6. Composite depreciation	*f.* Does not require a recoverability test before an impairment loss is recorded
____ 7. Depreciation policy conventions	*g.* Depreciation is determined by grouping dissimilar assets
____ 8. Change in depreciation method	*h.* Treated prospectively with no change to prior financial statements
____ 9. Error in depreciation calculation	*i.* Requires restatement which requires updates to previously reported information
____ 10. Recoverability test	*j.* Acquisition costs of fixed assets less residual value divided by estimated useful life
____ 11. Impairment loss measurement	*k.* Requires the comparison of fixed asset book value to expected cash flows
____ 12. Return on assets	*l.* Cost of fixed asset plus subsequent acquisition costs less salvage value
____ 13. Asset turnover	*m.* Consistent use of a variation of the application of a depreciation method
____ 14. Assets held for sale	*n.* Requires the comparison of fixed asset book value to fair value

Required

Match each term, *1* through *14*, with the most appropriate description *a* through *n*.

Problems

Problem 12-86
Computing Depreciation Using Various Depreciation Methods **LO1**

Quick Producers acquired factory equipment on January 1, 2020, costing $39,000. In view of pending technological developments, it is estimated that the machine will have a resale value upon disposal in four years of $8,000 and that disposal costs will be $500. Data relating to the equipment follow.

Estimated Service Life	
Years	4
Service hours	20,000

Calendar Year	Actual Service Hours
2020	5,700
2021	5,000
2022	4,800
2023	4,400

Required

a. Prepare a depreciation schedule (for 2020 through 2023) that shows annual depreciation expense, accumulated depreciation, and book value, using the units-of-production method with service hours as a measure of input assuming accounts are closed each December 31.

b. Compute depreciation expense for the *first and second years* assuming (1) straight-line, (2) sum-of-the-years'-digits, and (3) double-declining-balance depreciation.

Problem 12-87
Identifying Depreciation Methods **LO1**

Equipment was acquired for $80,000 on January 1, 2020, that has a six-year estimated life and a residual value of $8,000. Third-year depreciation expense under the four methods listed below (but not in the same order) amounted to (1) $12,000, (2) $11,852, (3) $13,714, and (4) $19,800. The depreciation methods used were (a) double-declining-balance, (b) units-of-production, (c) straight-line, and (d) sum-of-the-years'-digits.

The units-of-production method assumed that 800,000 units could be produced; the actual output in the first three years was 200,000 units, 180,000 units, and 220,000 units.

BOEING

Real World — GOODWILL

The Boeing Company reported the following information in a recent Form 10-K. While total goodwill is $5.1 billion on December 31, 2015, its balance is made up of purchases that comprise four reportable segments.

BOEING [BA]

Note 2 – Goodwill and Acquired Intangibles Changes in the carrying amount of goodwill by reportable segment for the years ended December 31, 2015 and 2014 were as follows:

	Commercial Airplanes	Boeing Military Aircraft	Network & Space Systems	Global Services & Support	Total
Balance at January 1, 2014	$2,108	$964	$1,513	$458	$5,043
Acquisitions	45		57		102
Goodwill adjustments	(22)		(4)		(26)
Balance at December 31, 2014	$2,131	$964	$1,566	$458	$5,119
Acquisitions	**6**	**15**			**21**
Goodwill adjustments	**(14)**				**(14)**
Balance at December 31, 2015	**$2,123**	**$979**	**$1,566**	**$458**	**$5,126**

Recording of Goodwill LO13-3 REVIEW 13-3

On January 1, 2020, the balance sheet of Naperville Company (a sole proprietorship) follows.

Review MBC

Assets		Liabilities and Equity	
Cash	$ 15,000	Accounts payable	$ 25,000
Accounts receivable, net of allowance	40,000	Noncurrent note payable	65,000
Inventory	60,000	Total liabilities	90,000
Plant and equipment, net of depreciation	200,000	Owners' equity	255,000
Land	30,000		
Total assets	$345,000	Total liabilities and equity	$345,000

On January 1, 2020, Chicago Inc. purchased all of the assets and assumed all of the liabilities listed on the above balance sheet for $365,000 cash. The assets, on date of purchase, were valued by Chicago Inc. as follows: cash, $15,000; accounts receivable, net, $35,000; inventory, $70,000; plant and equipment, net, $230,000; land, $60,000; and license, $10,000. The liabilities were valued at their carrying amounts.

Required

a. Compute the amount of goodwill included in the purchase price paid by Chicago Inc.

b. Prepare the entry that Chicago Inc. makes to record the purchase of Naperville Company.

c. Determine the minimum amount of goodwill that Chicago Inc. can amortize at the end of 2020.

More Practice: 13-31, 13-49
Solution on p. 13-43.

Revenue method

$$\text{Amortization expense} = \frac{\text{Current product revenue}}{\text{Total anticipated product revenue}} \times \text{Capitalized software costs}$$

Straight-line method

$$\text{Amortization expense} = \frac{\text{Capitalized software costs}}{\text{Useful life}}$$

While the preceding example relates to the development of computer software to be sold or leased, costs incurred to develop software internally are accounted for in a similar way. At the application development stage, costs are capitalized while the coding, training, and installation take place.

EXPANDING YOUR KNOWLEDGE **What about Start-up Costs?**

Newly formed organizations may incur a number of start-up costs during the first few years of inception. Such costs include legal, accounting, regulatory fees, travel, training, recruiting, etc. Also, a company will likely incur losses during its first few years of operations. Are there any exceptions in GAAP that would allow a company to defer these costs? The short answer is no. Start-up costs and initial losses are required to be expensed as incurred. With start-up companies, it is too difficult to predict the timing of future cash flows related to the upfront costs so deferral is not supported under GAAP.

720-15-25-1 Costs of start-up activities, including organization costs, shall be expensed as incurred.

Demo 13-6B **LO13-6** **Accounting for Software Research and Development Costs**

During 2018 and 2019, Software Inc. incurred $3 million developing a working model of a new software program. During calendar year 2020, an additional $1 million of costs is incurred on the final coding and testing of the product masters. The product is available for sale as of the beginning of 2021 and is expected to have a four-year economic life.

Sales revenues and anticipated future revenues in 2021 are as follows.

$ millions	2021
Current-year revenue	$1.2
Anticipated revenue in future years	4.8
Total	$6.0

Record the entries for (1) initial research and development costs in 2018 and 2019, (2) additional research and development costs in 2020, and (3) amortization expense in 2021. Assume all amounts were paid for in cash.

Solution

The costs of development incurred in 2018 and 2019 are expensed as R&D because they take place prior to the establishment of the technological feasibility of the product.

Assets = Liabilities + Equity
−3,000,000 −3,000,000
Cash: 3,000,000
R&D Exp: 3,000,000

2018 and 2019—To record research and development expense

Research and Development Expense	3,000,000	
Cash		3,000,000

Costs incurred in 2020 are subsequent to the production of a working model (after technological feasibility) and are therefore capitalized as the cost of the intangible software asset.

continued

Identification of Research and Development Costs

For disclosure purposes, management must identify research and development costs. This requires judgment in determining what costs meet the definition of research and development costs provided in the Codification. For example, management must differentiate between costs that are routine to an existing product and costs that bring about significant improvements to an existing product. Also, management must determine a reasonable allocation of indirect costs.

Software Development

Intangible costs related to software development may be capitalized after the point of technological feasibility until the release date (p. 13-24). However, management must determine these dates by examining the facts and circumstances of the particular project.

Questions

13-1. What distinguishes intangible assets from tangible assets? How are intangible assets reported on the balance sheet?

13-2. What outlays are properly considered part of the cost of an intangible asset?

13-3. What factors should determine whether an intangible asset is amortized and, if so, over what period of time?

13-4. Describe two classifications of intangible assets.

13-5. What is a franchise right? A trademark?

13-6. Define goodwill and the basis on which goodwill is amortized.

13-7. What is a bargain purchase? How does it arise? How is it treated for accounting purposes?

13-8. What is the maximum number of years over which a patent can be amortized? What determines this maximum? Under what circumstances, if any, should a shorter amortization period be used?

13-9. How are organization costs (start-up costs) treated for accounting purposes?

13-10. What are the guidelines for accounting for research and development (R&D) costs?

13-11. Distinguish between trademarks and copyrights.

13-12. Provide examples of situations in which the accounting carrying value of an intangible asset can increase. Does the accounting value of an intangible necessarily bear close relation to its economic value?

13-13. What are the primary characteristics of goodwill?

13-14. What are examples of items that may contribute to goodwill?

13-15. Under what circumstances is goodwill recognized?

13-16. Under what circumstances might goodwill be amortized?

13-17. Explain impairment of the value of a finite life intangible asset. Assume that a patent originally costing $50,000 (accumulated patent amortization, $35,000) is being evaluated for a possible impairment. The estimated cash flows from the patent are $5,000. Its estimated current fair value is $1,000. Provide any indicated entry; if none, explain why.

13-18. Explain impairment evaluation of an indefinite life intangible asset, other than goodwill.

13-19. Explain impairment evaluation of goodwill.

13-20. Carter Company owns a trademark that it purchased originally for $40,000; accumulated amortization to the current date is $26,000. The trademark has just been sold for $10,000 cash. Provide any required entry.

Brief Exercises

Brief Exercise 13-21
Classifying Intangible Costs **LO1**

In 2020, Downey Co. purchased a patent from a research institution for $25,000 (20-year estimated useful life), paid $3,000 to a company for a trademark (indefinite life), and paid $50,000 in salaries to employees working on a product modification. Determine how the three items would initially be classified by Downey Co. in 2020:

(1) intangible asset—finite life, (2) intangible asset—indefinite life, (3) research and development expense, or (4) non-research and development expense.

Brief Exercise 13-22
Classifying Intangible Costs **LO1**
Hint: See Demo 13-1

The following costs were incurred by Athletica Co. For each item, indicate the proper accounting treatment: (1) expense as incurred, (2) capitalize and assess for impairment, or (3) capitalize, amortize, and assess for impairment.

____ *a*. Start-up costs including legal fees and registration fees.
____ *b*. Research and development cost.
____ *c*. Goodwill recorded based upon a purchase of another company.
____ *d*. Purchase of a patent.
____ *e*. Costs to internally develop a patent.
____ *f*. Purchased trademark with indefinite life.

Brief Exercise 13-23
Recording the Purchase of a Patent **LO2**

On July 1, 2020, Beckham Inc. purchased a patent from a research firm by issuing 4,000 shares of its $1 par value common stock. On the date of purchase, the stock was trading on a public exchange for $10 per share. Record the purchase of the patent by Beckham Inc.

Brief Exercise 13-24
Computing Subsequent Carrying Amount of Patents **LO2**
Hint: See Demo 13-2

In January 2020, Ford Co. purchased a patent from a research institution for $250,000. The patent was estimated to have a useful life of 15 years. In December 2021, Ford Co. defended the patent in legal proceedings and successfully retained rights of ownership of the patent. The estimated life of the patent did not change from its original estimate. Legal expenses were $20,000. Determine the carrying value of the patent on December 31, 2021.

Brief Exercise 13-25
Computing Subsequent Carrying Amount of Patents **LO2**

Assume the same information in Brief Exercise 13-24 except that the legal defense was unsuccessful in defending the patent. The fair value of the patent on December 31, 2021, is now estimated to be $50,000 with a 2-year useful life.

a. Record the entry for the legal fees of $20,000, paid in cash.
b. Determine the carrying value of the patent on December 31, 2021, after any necessary adjusting entries have been recorded.

Brief Exercise 13-26
Recording the Purchase and Amortization of Patents **LO2**
Hint: See Demo 13-2

Harrison Co. purchased a patent on August 31, 2020, for $80,000 from a researcher. The patent has a legal life of 20 years, but the estimated useful life of the patent is 10 years with no expected residual value.

a. Record the entry for the purchase of the patent on August 31, 2020.
b. Record the entry to record the amortization of the patent on December 31, 2020.

Brief Exercise 13-27
Reporting Intangible Costs **LO2**

Hanks Co. recorded the following amounts for 2020.

- Research and development costs, $50,000.
- Patent, acquired on January 1, 2020, with 10-year useful life, $35,000.
- Goodwill from purchase of a company, $100,000.
- Acquired customer list with an indefinite useful life, $20,000.
- Legal fees paid on December 31, 2020, to register a patent (internally developed, 15-year useful life), $5,000.

a. Determine the amounts to be included on the balance sheet on December 31, 2020. Assume no asset is impaired.
b. Determine amounts to be included on the income statement for the year 2020. Assume no impairment losses were recorded.

Brief Exercise 13-28
Computing the Carrying Value of Intangibles **LO2**

On January 3, 2020, Munn and Cody entered into a noncompetition agreement in connection with Munn's purchase of a trademark from Cody. Munn paid Cody $800,000, of which 75% related to the trademark and 25% reflected Cody's agreement not to compete for a period of five years in the line of business covered by the trademark. Munn considers the life of the trademark to be indefinite. Determine Munn's carrying value of the trademark and noncompete agreement on December 31, 2020. Assume no impairment loss was recognized on the intangibles in prior periods.

Brief Exercise 13-29
Recording Franchise Entries **LO2**

Cleaners Inc. signed a contract with Super-Cleaners, Incorporated. The agreement provided for the payment of a franchise fee by Cleaners Inc. and subsequent periodic franchise royalties based on sales. In return for these royalties, Super-Cleaners will provide specified services in the future (such as promotional suggestions) for 10 years. The franchise fee was $100,000, payable on January 1, 2020. Provide the entries that Cleaners Inc. should make on January 1, 2020, and on December 31, 2020. Disregard any franchise royalties based on sales.

Brief Exercise 13-30
Computing Goodwill **LO3**
Hint: See Demo 13-3

On January 3, 2020, Munn acquired all noncash assets and assumed all liabilities of Saturn Company at a cash purchase price of $1,200,000. Munn determined that the fair value of the assets acquired in the transaction is $1,400,000 and the fair value of liabilities is $600,000. The book value of the net assets at the purchase date was $750,000. Determine the amount of goodwill recorded by Munn upon purchase of Saturn Company.

Brief Exercise 13-31
Computing Goodwill **LO3**

GoldStar Inc. acquired all assets and assumed all liabilities of Silver Company at a cash purchase price of $980,000. The carrying value of the assets acquired was $1,300,000 and the carrying value of the liabilities acquired was $500,000. GoldStar Inc. estimated that assets were undervalued by $100,000 due to unrecorded intangibles of $75,000 (fair value) and undervalued land and equipment of $25,000 (as compared to fair value). Determine the amount of goodwill recorded by GoldStar Inc. upon purchase of Silver Company.

Brief Exercise 13-32
Computing Goodwill Impairment **LO4**
Hint: See Demo 13-4C

Freeman Co. acquired another business and paid (among other amounts) $36,000 for its goodwill in 2018. On December 31, 2020, the net book value of the business is $440,000 and the fair value of the business is $425,000. Determine the amount of goodwill impairment (if any) on December 31, 2020. Assume no impairment losses were recognized on goodwill in prior periods.

Brief Exercise 13-33
Computing Goodwill Impairment **LO4**
Hint: See Demo 13-4C

Assume the same information in Brief Exercise 13-32 except that the fair value of the business is estimated at $445,000. Determine the amount of goodwill impairment (if any) on December 31, 2020.

Brief Exercise 13-34
Recording Entry for Impairment of Intangible Assets **LO4**
Hint: See Demo 13-4A, 13-4B

Eastwood Co. is evaluating the following two intangible assets for impairment at year-end. Record any journal entries required to recognize impairment of the intangible assets.

Intangible Asset	Carrying Value	Future Estimated Net Cash Flows	Fair Value
Patent	$65,000	$50,000	$35,000
Trademark	10,000	No foreseeable limit	12,000

Brief Exercise 13-35
Computing Intangible Asset Carrying Value with a Change in Accounting Estimate **LO5**
Hint: See Demo 13-5

Munn Inc. reported a patent as a noncurrent asset on December 31, 2020, as follows.

Patent	$192,000
Less accumulated amortization	(24,000)
Net patent	$168,000

Transactions related to the patent included the following: The patent was purchased from Grey Company on January 2, 2019, when the remaining legal life was 16 years. On January 2, 2021, Munn determined that the remaining useful life of the patent was only eight years from the date of its acquisition. Determine the carrying value of the patent on December 31, 2022.

Brief Exercise 13-36
Accounting for a Change in Accounting Estimate—Patent **LO5**
Hint: See Demo 13-5

Mills Inc. purchased a patent in January of 2015 for $40,000 and chose to amortize the patent over its useful life of 20 years. However, in 2020, the company decided that the total useful life of the patent would only be 10 years based upon new technology advancing in the company's internal research and development department.

a. What entry would the company record for amortization of the patent in 2020?
b. What impact would this change have on prior periods?

Brief Exercise 13-37
Identifying Research and Development Costs **LO6**
Hint: See Demo 13-6A

Determine whether the following items would be classified in the financial statements of Jackson Co. as research and development expense or operating expense.

Salaries of employees working on the modification of a product design	$45,000
Cost of materials used during work on the modification of a product design	5,000
Salaries of employees working on the improvement of an existing product	60,000

Brief Exercise 13-38
Determining Classification of Software Costs **LO6**

During 2019, Accounting Software Inc. incurred $200,000 developing a working model of a new software program. During calendar 2020, an additional $50,000 of costs is incurred on the final coding and testing of the product masters. The product is available for sale as of the beginning of 2021 and is expected to have a four-year economic life. Costs incurred in 2021 pertaining to the production of the software and training materials totaled $210,000. Determine how the costs would initially be recorded: (1) research and development expense, (2) non-research and development expense, or (3) intangible asset.

2. **Coca-Cola Company**: Sells products under certain trademarks. For example, Glacéau Vitaminwater is a brand owned by Coca-Cola. Trademarks totaled $6.0 billion in 2015.
3. **Boeing**: Expenditures involve experimentation, design, development and related test activities for defense systems included in the total of $3.3 billion.
4. **Under Armour**: Through the acquisition of MyFitnessPal in 2015, Under Armour acquired the following intangible items: a nutrition database valued at $4.5 million (10-year estimated useful life), a user-base valued at $38.3 million (10-year estimated useful life), technology valued at $3.2 million (5-year estimated useful life), a trade name valued at $2.3 million (5-year estimated useful life), and goodwill valued at $402.7 million. Goodwill reflects unidentified intangible assets acquired, including operational synergies across the Company, assembled workforces, the value of integrating acquired technologies, and engaging and growing the connected fitness community.
5. **Walgreens Boots Alliance Inc.**: Upon acquisition of the remaining interest in Alliance Boots, the company's acquisition included a number of intangible assets including loyalty card holders valued at $742 million (12-year estimated useful life), and pharmacy licenses valued at $2.5 billion (indefinite useful life).

Required

For each of the intangible costs described in items 1 through 5, indicate the following:

a. Classification: (1) finite life intangible asset, (2) indefinite life intangible asset other than goodwill, (3) goodwill, or (4) research and development expense.
b. Presentation in the financial statements: (1) asset on the balance sheet, (2) expense on the income statement.

Exercise 13-42
Recording Purchase of Patent through Debt and Equity Issuances
LO2
Hint: See Demo 13-2

On January 1, 2020, Century Inc. purchased from an inventor a patent with a list price of $110,000. Century paid for the patent as follows: cash, $40,000; issuance of 1,000 shares of its own common stock, par $10 (fair value, $20 per share); and a note payable due at the end of three years, face amount, $50,000, noninterest-bearing. The current interest rate for this type of financing is 12%.

Required

Record Century Inc.'s entry for the purchase of the patent.

Exercise 13-43
Accounting for Organization Costs
LO2

Perry Inc. was organized during 2019 and started operations in 2020. Cash expenditures during 2019 ~~and early 2020~~ were the following.

Professional fees (attorney fees) for articles of incorporation	$20,000
Professional fees (accounting fees) to research tax status of organization	15,000
Meetings and promotional activities incidental to organization	15,000
Filing and related fees	5,000
Purchase of office equipment	50,000

Required

Prepare a summary journal entry to record the cash expenditures related to the startup of the new company.

Exercise 13-44
Recording Correcting Entries for Intangible Asset Account **LO2**

In examination of the following intangible asset account that we have been asked to review, we receive the following information supporting the ending account balance on December 31, 2020.

Intangible Asset

Jan.	1	Goodwill	15,000	
Jan.	15	Research and development	12,000	
April	1	Prepaid advertising	6,000	
June	30	Patent	8,000	
July	10	Research and development	14,000	
Oct.	5	Bond discount	4,800	
Dec.	31	Legal expense to successfully defend patent	1,500	
End. bal.			61,300	

Required

Prepare the correcting entries to adjust the intangible asset account on December 31, 2020. Assume that the patent has a useful life of 8 years and that there are no indicators of impairment on intangible assets. Also, instead of using a general intangible asset account, use more specific intangible asset accounts.

Exercise 13-56
Identifying Research and Development Costs
LO6
Hint: See Demo 13-6A

Diaz Company incurred the following costs during the year 2020.

1. Salaries expense related to design for a trademark with an indefinite estimated life	$ 6,000
2. Materials used for research and development projects for the current year	10,000
3. Fees paid to external consultants related to research and development projects	30,000
4. Trouble-shooting in connection with breakdowns during production	18,000
5. Design of tooling involving new technology	9,000
6. Cost of equipment (purchased January 2019) that will have alternative uses over 6 years	80,000
7. Salaries expense related to updates to an existing product	40,000
8. Allocation of rent expense for a facility partially used for research and development activities	15,000
9. Routine testing of product during commercial production	28,000

Required
Determine the amount of research and development costs that would be disclosed in the financial statements of Diaz company for the year 2020.

Exercise 13-57
Amortizing Software Development Costs
LO6

During 2020, the E-Software Company capitalized computer software costs in the amount of $4,000,000. During 2020, the first year the product is released to sell, sales total $2,000,000. Estimated future sales for the remaining three-year life (through 2023) of the product are $14,000,000.

Required
Record the amount of amortization of capitalized computer development software costs for 2020.

Exercise 13-58
Accounting for Software Development Costs
LO6
Hint: See Demo 13-6B

During 2020, PC Software Inc. developed a new personal computer database management software package. Total expenditures on the project were $3,000,000, of which 40% occurred after the technological feasibility of the product had been established. The product was completed and offered for sale on January 1, 2021. During 2021, revenues from sales of the product totaled $4,800,000. The package is expected to be successfully marketable for five years, and the total revenues over the life of the product are estimated to be $20,000,000.

Required
a. Prepare the journal entry to account for the development of this product in 2020.
b. Prepare the journal entry to record the amortization of capitalized computer software development costs in 2021.
c. What disclosures are required in the December 31, 2021, financial statements regarding computer software costs?
d. Suppose this product were developed for internal use. How would your answers to (*a*), (*b*), and (*c*) change?

Problems

Problem 13-59
Recording Entries for Intangibles **LO1, 2, 3, 6**

Our new client, Laser Company, is being audited for the first time on December 31, 2021, the end of the accounting period. In the course of our examination, we encounter in the ledger an asset account titled "Intangibles" (balance, $85,224) presented below.

Intangibles

June 30, 2019	Goodwill	9,000	2,890	Amortization, 5%	Dec. 31, 2020
Dec. 31, 2019	R&D	10,700	4,486	Amortization, 5%	Dec. 31, 2021
Apr. 1, 2020	Goodwill	14,600			
June 30, 2020	Patent	9,600			
Dec. 31, 2020	R&D	13,900			
June 1, 2021	Goodwill	12,900			
July 1, 2021	Bond discount	4,800			
Dec. 31, 2021	R&D	17,100			
End. bal.		85,224			

By tracing entries to the journal and other supporting documents, we ascertain the following facts.

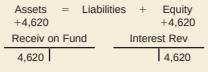
1. The June 30, 2019, entry was made when the first six months' operations were profitable, although a small loss had been anticipated. At the direction of the company president, and with the approval of the board of directors, an entry was made debiting Intangibles and crediting Retained Earnings for $9,000.

continued from previous page

b. Interest Revenue on Special-Purpose Fund

December 31, 2020—To record accrual of interest revenue

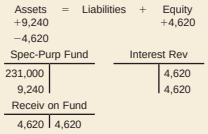
Receivable on Building Fund	4,620	
Interest Revenue ($231,000 × 0.04 × 0.5)		4,620



c. Interest Receipt on Special-Purpose Fund

June 30, 2021—To record receipt of interest

Special-Purpose Fund—Building	9,240	
Receivable on Building Fund		4,620
Interest Revenue ($231,000 × 0.04 × 0.5)		4,620



Example Two—Cash Surrender Value

Assume that Zim Corporation purchased a $100,000 whole-life policy on its top executive several years ago. In 2020, which is the fourth year the policy has been in effect, the company pays an insurance premium in the amount of $20,200. The premium of $20,200 paid in 2020 results in an increase in cash surrender value of $1,000 to a total cash surrender value of $1,500 at the end of 2020. Assume that the executive dies at the end of 2020.

a. Record the entry for the life insurance payment in 2020.

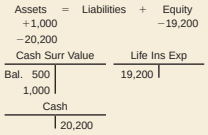
b. Record the entry for the settlement of the whole-life policy due to the death of the executive.

Solution

a. Whole-Life Insurance Payment

2020—To record whole-life insurance payment

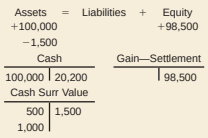
Life Insurance Expense	19,200	
Cash Surrender Value of Life Insurance	1,000	
Cash		20,200



b. Whole-Life Insurance Settlement

2020—To record whole-life insurance settlement

Cash	100,000	
Cash Surrender Value of Life Insurance		1,500
Gain on Settlement of Life Insurance Indemnity		98,500



REVIEW 14-8 LO14-8 Accounting for Other Investments

On December 31, 2020, M4 Inc. decided to create a special-purpose fund to be identified as a special contingency fund. The resources in the fund will be used to settle an environmental obligation on December 31, 2024. The company desires to accumulate a $500,000 fund balance by the end of 2024 by making four equal annual deposits starting on January 1, 2021. The independent trustee handling the fund will increase the fund by 5% compound interest each December 31.

a. Compute the amount of the annual deposit.

b. Provide the entries relating to the fund that M4 Inc. should make on January 1, 2021, and December 31, 2021.

Example Two—Cash Surrender Value

M4 Inc. purchased a $200,000 whole-life policy on its top executive in 2014. In 2020, the company pays an insurance premium in the amount of $12,000. The premium of $12,000 paid in 2020 results in an increase in cash surrender value of $1,800 for a total cash surrender value of $3,300 at the end of 2020. Record the entry for the life insurance payment in 2020.

More Practice:
14-113, 14-114, 14-121
Solution on p. 14-87.

Key Term	Definition
Call option	ASC Glossary A contract that allows the holder to buy a specified quantity of stock from the writer of the contract at a fixed price for a given period.
Strike price or exercise price	ASC Glossary The amount that must be paid for a share of common stock upon exercise of an option or warrant.
Notional amount	ASC Glossary A number of currency units, shares, bushels, pounds, or other units specified in a derivative instrument. Sometimes other names are used. For example, the notional amount is called a face amount in some contracts.

Demo 14-9A illustrates the accounting treatment of a call option held as a speculative derivative instrument. A call option provides the holder the right, but not the obligation, to purchase a specified quantity of securities (such as common stock) at a specified price (exercise price), within a specified period. The **call date** is the date that the holder of a call option chooses to exercise the call option. A call option is recognized at the price paid for the instrument and the carrying value is adjusted to fair value at each reporting date. The adjustments are recognized in net income in the period of the adjustment.

815-10-35-2 The gain or loss on a derivative instrument not designated as a hedging instrument shall be recognized currently in earnings.

Demo 14-9A LO14-9 Call Option as a Speculative Investment—Underlying is Fair Value of Stock

Demo MBC

Montana purchases a call option contract for $250 on November 1, 2020, from Goldman Investors Inc. The contract allows Montana (the holder) to call (purchase) at any time in the next 12 months, 100 shares of Risky Inc. stock at a strike price of $50 per share. If the contract is exercised, it can be settled by payment (from Goldman Investors Inc. to Montana) for an amount equal to the difference between the market price of 100 shares of Risky Inc. stock on the call date and the strike price of $5,000 ($50 × 100 shares). The underlying instrument of this call option is the stock of Risky Inc. because the value of the call option depends on the value of the stock of Risky Inc. If the value of Risky Inc. remains below $50 a share, over the next 12 months the call option expires worthless. The notional amount is the 100 shares that can be called at $50 per share.

Required

a. Prepare the entry to record the purchase of the call option by Montana.
b. Record the adjusting entries on December 31, 2020, assuming the fair value of the option is now $1,350.
c. Montana chooses to settle the option on December 31, 2020. (In practice, the option contract does not typically require the actual transfer of shares upon the exercise of the contract. The issuer of the contract can settle with payment of cash in an amount equal to the net gain of the holder.) Record the entry for the settlement of the call option on December 31, 2020, assuming Risky Inc.'s stock value is $60 per share.
d. Present the impact on the 2020 income statement of the derivative transactions for Montana.

Solution

a. **Purchase of Call Option**

Montana records an asset, Call Option, for the amount paid under contract, or the option premium.

Assets = Liabilities + Equity
+250
−250
Call Option: 250 | Cash: 250

November 1, 2020—To record option premium

Call Option	250	
Cash		250

b. **Adjustment of Call Option to Fair Value**

At December 31, 2020, Montana would record a gain equal to the change in the fair value of the call option of $1,100.

Assets = Liabilities + Equity
+1,100 +1,100
Call Option: 250, 1,100 | Unreal Gain or Loss—Inc: 1,100

December 31, 2020—To record value of call option

Call Option	1,100	
Unrealized Gain or Loss—Income ($1,350 − $250)		1,100

continued

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Example Three—Accounting for Interest Rate Swap

On January 2, 2020, Hyett Inc. enters into a 3-year interest rate swap contract in order to effectively hedge against the fixed annual interest payments of a 3-year, 4%, $50,000 note. The swap calls for Hyett Inc. to receive payments annually on December 31 from the counterparty based upon a 4% interest rate for a notional amount of $50,000 and to make payments to the counterparty based upon LIBOR. LIBOR is 4.2% as of January 2, 2020, and the rate will be adjusted every 12 months to the current LIBOR rate. The swap has zero value on January 2, 2020, and on December 31, 2020. The hedge is considered to be highly effective.

a. Prepare the journal entry on January 2, 2020, to record the issuance of the note and the initiation of the interest rate swap agreement.

b. Prepare the entries related to the note payable and the interest rate swap on December 31, 2020, assuming LIBOR remains unchanged.

Example Four—Accounting for Futures Contract

Hyett Inc. is holding a futures contract classified as a cash flow hedge with an original cost of zero. The futures contract hedges the risk of future purchases of materials totaling 10,000 pounds. The futures contract provides that Hyett purchases the required materials at the future date needed at market price, but the counterparty must pay Hyett any differences above $5.00 per pound while Hyett pays to the counterparty any differences below $5.00 per pound. The hedge is considered to be highly effective. If the materials are selling for $5.10 per pound on December 31, 2020, the first reporting date, what adjusting entry is required?

More Practice:
14-122, 14-123, 14-124, 14-125

Solution on p. 14-88.

Questions

14-1. Define a security. Distinguish between debt and equity securities.

14-2. Briefly describe the methods to account for debt investments. How does an investor determine the appropriate accounting method to follow?

14-3. On July 1, 2020, Baker Company purchased $50,000 of LoCal Company 6% bonds at par value. The bonds pay interest semiannually on July 1 and January 1. At December 31, 2020, the bonds have a fair value of $51,000. Provide the journal entries (a) to record the purchase of the investment, assuming that the bonds are classified as trading securities, and (b) to record investment income and any other needed adjustments at December 31, 2020.

14-4. If an investor holds an equity security investment where the investor does not exert significant influence, explain the appropriate accounting for the investment.

14-5. What accounts are affected by a sale of a debt security classified as HTM?

14-6. What is the most significant difference in the accounting treatment of an available-for-sale debt security compared to a trading debt security?

14-7. Explain the basic features of the equity method of accounting for long-term investments. When is the equity method applicable?

14-8. Why is the equity method sometimes called the one-line consolidation method?

14-9. How would an investor typically report a dividend declared by a company in which it holds a 40% voting interest? A 10% voting interest?

14-10. Indicate reasons why a 30% ownership interest in another company may not be considered significant.

14-11. When are unrealized holding gains and losses on debt securities included in the determination of net income? When are unrealized holding gains and losses on equity securities included in the determination of net income?

14-12. Describe the balance sheet categorization and valuation within the asset section when an investment in securities is classified as

a. Trading debt securities.
b. Available-for-sale debt securities.
c. Held-to-maturity debt securities.
d. Equity securities measured at FV-NI.
e. Equity method securities.

14-13. What is the financial statement impact when an investment is reclassified from a trading debt security to an available-for-sale debt security? When an available-for-sale debt security is reclassified as a trading debt security?

14-14. Explain when the fair value option of accounting for equity investments is applicable. What is the financial statement impact of accounting for investments under the fair value option?

14-15. What approach(es) are used to analyze impairment on available-for-sale and held-to-maturity debt securities?

Brief Exercises

Brief Exercise 14-16
Recording Entries for Debt HTM Investments **LO1**
Hint: See Demo 14-1C

On January 1, 2020, Sharp Company purchased $50,000 of Sox Company 6% bonds, at a time when the market rate was 5%. The bonds mature on December 31, 2024, and pay interest annually on December 31. Sharp plans to and has the ability to hold the bonds until maturity. Assume that Sharp uses the effective interest method to amortize any premium or discount on investments in bonds. At December 31, 2020, the bonds are quoted at 98.

a. Prepare the entry for the purchase of the debt investment on January 1, 2020.
b. Prepare the entry for the receipt of interest on December 31, 2020.
c. Record the entry to adjust the investment to fair value on December 31, 2020, if applicable.

Brief Exercise 14-17
Recording Entries for Debt HTM Investments **LO1**
Hint: See Demo 14-1B

On January 1, 2020, Sharp Company purchased $50,000 of Sox Company 5% bonds, at a time when the market rate was 6%. The bonds mature on December 31, 2024, and pay interest semiannually on June 30 and December 31. Sharp plans to and has the ability to hold the bonds until maturity. Assume that Sharp uses the effective interest method to amortize any premium or discount on investments in bonds. At June 30, 2020, the bonds are quoted at 98.

a. Prepare the entry for the purchase of the debt investment on January 1, 2020.
b. Prepare the entry for the receipt of interest on June 30, 2020.
c. Record the entry to adjust the investment to fair value on June 30, 2020, if applicable.

Brief Exercise 14-18
Recording Entries for TS **LO2**
Hint: See Demo 14-2A

Henry Inc. purchased $5,000 of Container Corporation's 5% bonds at par. The purchase is made on January 1, 2020, and the investment is classified as a trading security. On June 30, 2020, Henry Inc. received semiannual interest of $125. On that date, the bond was adjusted to its fair value of $4,800. Prepare Henry's journal entries for (*a*) the purchase of the investment, (*b*) the interest received, and (*c*) the fair value adjustment.

Brief Exercise 14-19
Recording Entry for Sale of TS Debt Trading Securities **LO2**

① **Adjust FVA at Year-End** Referring to information in Brief Exercise 14-18, assume that Henry Inc. sold its holdings of Container Corporation bonds on July 2, 2020, for $4,800.

a. Record the sale of the debt investment.
b. Adjust the Fair Value Adjustment account on December 31, 2020, the company's year-end.

Brief Exercise 14-20
Recording Entry for Sale of TS Debt Trading Securities **LO2**
Hint: See Demo 14-2A

② **Adjust FVA at Sale and Year-End** Referring to information in Brief Exercise 14-18, assume that Henry Inc. sold its holdings of Container Corporation bonds on July 2, 2020, for $4,800. Record the sale of the debt investment, eliminating the Fair Value Adjustment account upon sale.

Brief Exercise 14-21
Recording Entries for AFS Securities **LO3**
Hint: See Demo 14-3A

Assume the same facts as in Brief Exercise 14-16, except that Sharp Company does not intend to trade the bonds or to hold them until maturity.

a. Prepare the entry for the purchase of the debt investment on January 1, 2020.
b. Prepare the entry for the receipt of interest on December 31, 2020.
c. Record the entry to adjust the investment to fair value on December 31, 2020, if applicable.

Brief Exercise 14-22
Adjusting AFS Securities to Fair Value **LO3**
Hint: See Demo 14-3A

Tracking Co. holds an AFS bond investment in Fields Corp. The carrying value of the investment is $4,500 at December 31, 2020. Tracking Co. determines the fair value of the investment at the end of the year 2020 to be

$5,400. Prepare the journal entry, if any, to record the difference between the fair value and the carrying value. The Fair Value Adjustment account had a zero balance on January 1, 2020.

Brief Exercise 14-23
Adjusting AFS Securities to Fair Value
LO3

The following information relates to an AFS security investment held by Gomez Inc.

	Dec. 31, 2019	Dec. 31, 2020
Fair value	$30,000	$33,000
Carrying value	28,000	30,000

Provide the journal entry to adjust the investment to fair value on December 31, 2020.

Brief Exercise 14-24
Determining Impact on Financial Reporting of Unrealized Losses
LO3

Turbo Corporation had net income of $30,000 and other comprehensive income of $0 prior to the following two adjustments: Turbo Corporation discovered it has an unrealized holding loss of $1,000 related to available-for-sale debt securities and an unrealized holding loss of $500 related to trading debt securities. Ignoring income taxes, what are the adjusted totals for (*a*) net income, (*b*) other comprehensive income, and (*c*) comprehensive income?

Brief Exercise 14-25
Reporting Comprehensive Income with Reclassification Adjustments **LO3**

Phelps Company reported the following amounts this past year.

- Revenues, $50,000.
- Expenses, $30,000.
- Realized loss on sale of AFS debt investments, $5,000.
- Reclassification adjustment for AFS debt investments sold during the period, $5,000.
- Unrealized holding gain on currently held AFS debt investments, $1,000.

Ignoring income taxes, calculate (*a*) net income and (*b*) comprehensive income.

Brief Exercise 14-26
Recording Entries of Equity Securities: FV-NI
LO4
Hint: See Demo 14-4

① **Adjust FVA at Year-End** An investor purchased 100 shares of Mallard common stock at $20 per share on March 15, 2020. On December 31, 2020, the stock was quoted at $19 per share and Mallard declared and paid a dividend of $1.50 per share. On June 5, 2021, the investor sold the stock for $22 per share. On December 31, 2021, the Fair Value Adjustment account is adjusted. Assuming the investment is measured at FV-NI, provide the journal entries to be made at each of the following dates.

a. March 15, 2020.
b. December 31, 2020.
c. June 5, 2021.
d. December 31, 2021.

Brief Exercise 14-27
Recording Entries of Equity Securities: FV-NI
LO4

② **Adjust FVA at Sale and Year-End** An investor purchased 100 shares of Mallard common stock at $20 per share on March 15, 2020. On December 31, 2020, the stock was quoted at $19 per share and Mallard declared and paid a dividend of $1.50 per share. On June 5, 2021, the investor sold the stock for $22 per share. Assuming the investment is measured at FV-NI, provide the journal entries to be made at each of the following dates. On the date of sale, first update the Fair Value Adjustment account prior to eliminating its balance in the sale entry.

a. March 15, 2020.
b. December 31, 2020.
c. June 5, 2021.

Brief Exercise 14-28
Recording Entries for Equity Securities: FV-NI
LO4

Lance Co. purchased 100 shares of Mallard common stock at $20 per share on March 15, 2020. Mallard declared and paid a dividend of $1.50 per share in 2020. The market price on December 31, 2020, is unavailable because the fair value of the stock is not readily determinable. Assume that the amount of $2,000 is a measure of cost less impairment, adjusted for observable price changes for an identical investment to this equity investment. Assuming the investment is measured at FV-NI, provide the journal entries to be made at each of the following dates.

a. March 15, 2020.
b. December 31, 2020.

Brief Exercise 14-29
Analyzing Fair Value Adjustment Account
LO4

On December 31, 2020, Raven Company's portfolio of equity securities was valued at $1,800. The original cost of the investments in the portfolio was $1,600. Raven does not have significant influence on the investees in the portfolio. Prepare the journal entry to adjust the securities to fair value assuming that the Fair Value Adjustment account (unadjusted) has a

a. Credit balance of $90.
b. Debit balance of $90.

Brief Exercise 14-30
Recording Entries under the Equity Method **LO5**
Hint: See Demo 14-5

On January 1, 2020, Evergreen Inc. purchased 3,750 of the 15,000 outstanding shares of common stock of Nature Net Inc. obtaining significant influence of the company. The shares were purchased for $5,000 cash and Evergreen Inc. intends for it to be a long-term investment. During the year, Nature Net Inc. reported net income of $26,000 and declared and paid dividends of $12,000.

a. Prepare Evergreen Inc.'s entry on January 1, 2020, for the purchase of the equity investment.
b. Prepare Evergreen Inc.'s entries on December 31, 2020, to record its investment income and the receipt of dividends.
c. What is the ending balance of the Investment account on December 31, 2020?

Brief Exercise 14-31
Recording Entries under the Equity Method **LO5**
Hint: See Demo 14-5

On January 1, 2020, Hockey Unlimited Inc. purchased 2,500 of the 10,000 outstanding common shares of Goal Corporation for $14,000 cash obtaining significant influence of the company. Hockey Unlimited intends to hold the securities indefinitely. On January 1, 2020, the balance sheet of Goal Corporation reflected depreciable assets with a net book value of $30,000, and a 10-year remaining useful life. The fair value of the depreciable assets is $33,000 on January 1, 2020. Record the adjusting entry for depreciation expense on December 31, 2020, using the straight-line depreciation method.

Brief Exercise 14-32
Assessing Impact of Dividends under FV-NI vs. Equity Methods **LO4, 5**

Clark Inc. purchased 10% of the 10,000 shares of common stock in Nashville Inc. for $40,000 in January 2020. Shay Inc. purchased 35% of the 10,000 shares of common stock in Nashville Inc. for $140,000 in January 2020. In December 2020, Nashville Inc. declared and paid a dividend of $1 per share on its outstanding shares of common stock. For each investor, determine the dividend amount received, and its related impact on the Investment and Dividend Revenue accounts. Assume that Shay Inc. (but not Clark Inc.) has significant influence over Nashville Inc.

Investor	Dividend Amount Declared and Received	Change in Investment Account	Increase in Dividend Revenue
Clark Inc.	$ _____	$ _____	$ _____
Shay Inc.	_____	_____	_____

Brief Exercise 14-33
Recording Entries for Impairment—HTM **LO6**
Hint: See Demo 14-6

Tracking Co. holds an HTM bond investment in Fields Corp. The carrying value of the investment is $4,500 at December 31, 2020. Tracking Co. estimates the present value of the amounts expected to be collected on the bond investment to be $2,000. The company does not intend to sell the asset or would likely be required to sell the investment before recovery of any unrealized loss. Prepare the journal entry, if any, to record the impairment loss.

Brief Exercise 14-34
Recording Entries for Impairment—AFS **LO6**
Hint: See Demo 14-6

Determine the amount of impairment loss (if any) to record in income under the following three separate scenarios for an AFS debt investment. In all three cases, the company does not intend to sell and does not believe it is *more likely than not* that it will be required to sell the investment before recovery of any unrealized loss. Assume that the company has already adjusted the AFS investments to fair value through OCI.

Scenario	1	2	3
Fair value	$90,000	$70,000	$60,000
Amortized cost	80,000	80,000	80,000
Expected credit loss	15,000	15,000	15,000

Brief Exercise 14-35
Recording Entries for Impairment—AFS **LO6**

Refer to the information in Brief Exercise 14-34 except now assume that the company intends to sell the AFS securities. Determine the amount of impairment loss (if any) to record in income under the three separate scenarios.

Brief Exercise 14-36
Determining Adjustments to Debt Securities **LO1, 2, 3**

Tracking Co. holds a bond investment in Fields Corp. Tracking Company's carrying value of the bond investment is $4,500 on December 31, 2020. Tracking Co. determines the fair value of the bond investment on December 31, 2020 to be $2,000. Prepare the journal entry (if any) to record the difference between the fair value and the carrying value for each of the following separate scenarios.

a. Tracking Co. has the intent and ability to hold the bond to maturity.
b. Tracking Co. has the intent and ability to hold the bond to maturity but elected to account for the investment using the fair value option on the purchase date.
c. Tracking Co. is uncertain as to how long it intends to hold the bond investment.

d. Tracking Co. is uncertain as to how long it intends to hold the bond investment but elected to account for the investment using the fair value option on the purchase date.

Brief Exercise 14-37 Recording Entries Using the Fair Value Option **LO5**

On January 1, 2020, Evergreen Inc. purchased 3,750 of the 15,000 outstanding shares of common stock of Nature Net Inc. resulting in significant influence over Nature Net Inc. The shares were purchased for $5,000 cash and Evergreen elected to account for the investment under the fair value option. During the year, Nature Net reported net income of $26,000 and declared and paid dividends of $12,000. The 3,750 shares of Nature Net Inc. stock had a fair value of $5,500 on December 31, 2020.

a. Prepare Evergreen's entry to record the purchase of the common stock of Nature Net Inc. on January 1, 2020.
b. Prepare Evergreen's entry to record the receipt of declared dividends on December 31, 2020.
c. Prepare Evergreen's entry to adjust the securities to fair value on December 31, 2020.
d. What is the carrying value of the investment on December 31, 2020?

Brief Exercise 14-38 Recognizing Income under the Fair Value Option **LO 1, 2**

On June 15, 2020, Diaz Inc. purchased $100,000 bonds at par value and elects to account for the bonds using the fair value option. On December 31, 2020, the bonds had a fair value of $104,000. Diaz Inc. sold the bonds on January 21, 2021, for $106,000.

a. What is the impact on the income statement in 2020 and 2021 for the transactions described above?
b. How would your answer to (*a*) change if the bonds were instead classified as HTM securities and not accounted for using the fair value option?

Brief Exercise 14-39 Classifying Financial Statement Amounts **LO1, 2, 3, 4, 5**

For the following six items, indicate which financial statement category would be affected: (1) net income or (2) other comprehensive income.

a. Realized gain on sale of AFS debt investment.
b. Realized loss on sale of HTM debt investment.
c. Unrealized gain on an AFS debt investment.
d. Unrealized loss on a TS debt investment.
e. Unrealized gain on an AFS debt investment accounted for using the fair value option.
f. Unrealized loss on an equity investment measured at FV-NI.

Exercises

Exercise 14-40 Classifying Investments in Securities **LO1, 2, 3, 4, 5**

Match each security listed below with its usual classification: (1) trading securities, (2) available-for-sale securities, (3) equity method securities, (4) held-to-maturity securities, or (5) equity securities measured at FV-NI.

____ *a.* Abbot common stock, no-par; acquired to use temporarily idle cash with intent to sell next month.
____ *b.* 30% interest in Packaging Inc.; acquired to drive costs down through vertical integration.
____ *c.* Mack stock held in trading account.
____ *d.* Hasten Inc.'s 10-year bonds acquired. Hasten intends to hold to maturity, but may need to sell the bonds earlier for cash.
____ *e.* Staufer common stock, par $5; acquired to gain a significant influence, but not control.
____ *f.* Frazer bonds, 9%, mature at the end of 10 years; acquired with the intent and ability to hold for 10 years.
____ *g.* Foreign Corp. common stock; a 30% interest acquired, but difficulties encountered in an attempt to obtain representation on the Foreign Corporation's board of directors. Intent is to hold stock indefinitely.
____ *h.* Astroid common stock, par $1; acquired as an investment (with insignificant influence) that management plans to hold indefinitely.

Exercise 14-41 Recording Entries for HTM Debt Securities—Par **LO1**
Hint: See Demo 14-1A

On January 1, 2020, Lazer Inc. purchased for cash, ten $1,000, 4% bonds of Star Corp. at par. The bond interest is paid annually on January 1 of each year, and the bond maturity date is January 1, 2030. Lazer has the intent and ability to hold the bonds over the full term. The fair value of the bonds on December 31, 2020, is $9,800.

a. Record the entry for the purchase of the bonds on January 1, 2020.
b. Record the entry to accrue interest revenue on December 31, 2020.
c. Record the entry for the receipt of interest on January 1, 2021.

Exercise 14-53
Adjusting AFS Debt Securities to Fair Value
LO3

A portfolio of investments of available-for-sale securities held by Dow Inc. is as follows.

December 31, 2020	Cost	Fair Value
Eastern Corp. bonds	$120,000	$128,000
Western Corp. bonds	200,000	205,000
Total	$320,000	$333,000

December 31, 2021	Cost	Fair Value
Eastern Corp. bonds	$120,000	$140,000
Western Corp. bonds	200,000	190,000
Total	$320,000	$330,000

The Fair Value Adjustment account had a $0 balance on January 1, 2020. No sales or purchases took place in the available-for-sale investment portfolio in 2020 and 2021.

Required

a. Record the adjusting entry on December 31, 2020, to adjust the debt investments to fair value.
b. Record the adjusting entry on December 31, 2021, to adjust the debt investments to fair value.
c. Indicate how the adjustment to fair value in (*b*) would be reflected in Dow's income statement for the year ended December 31, 2021.

Exercise 14-54
Recording and Reporting AFS Securities **LO3**

On December 31, 2020, Banff Company held an investment in Glacier Inc. bonds with an original cost of $23,000. The investment was classified as an available-for-sale security, had a fair value of $21,500 on December 31, 2020, and was the only investment in the available-for-sale security portfolio in 2020. In 2021, Banff sold the investment in Glacier Inc. bonds for $20,000. On December 31, 2021, assume that Banff Company has an $8,000 net unrealized holding gain on other available-for-sale securities purchased during 2021.

Required

a. Prepare the adjusting entry on December 31, 2020, to record the unrealized holding gain or loss on the Glacier Inc. bond investment.
b. Prepare the adjusting entry on December 31, 2021, to record the unrealized holding gain or loss on Banff's available-for-sale portfolio.
c. Indicate the effect on net income and other comprehensive income in 2021 for these transactions.
d. Prepare the reclassification disclosure of accumulated other comprehensive income to include in the notes accompanying the financial statements of Banff Company for 2021.

Exercise 14-55
Recording and Reporting Equity Investment: FV-NI
LO4
Hint: See Demo 14-4

① Adjust FVA at Year-End On November 1, 2020, Drucker Co. acquired the following investments in equity securities measured at FV-NI.

Kelly Corporation—500 shares of common stock (no-par) at $60 per share.
Keefe Corporation—300 shares preferred stock ($10 par) at $20 per share.

On December 31, 2020, the company's year-end, the quoted market prices were as follows: Kelly Corporation common stock, $52, and Keefe Corporation preferred stock, $24. Following are the data for 2021.

Mar. 2, 2021 Dividends per share, declared and paid: Kelly Corp., $1, and Keefe Corp., $0.50.
Oct. 1, 2021 Sold 100 shares of Keefe Corporation preferred stock at $25 per share.
Dec. 31, 2021 Fair values: Kelly common, $46 per share, Keefe preferred, $26 per share.

Required

a. Prepare the entry for Drucker Company to record the purchase of the securities.
b. Prepare any adjusting entry needed at December 31, 2020.
c. Indicate the items and amounts that should be reported on the 2020 income statement of Drucker and its year-end balance sheet. Assume that the investments are classified as current.
d. Prepare the entries required in 2021 to record dividend revenue, the sale of stock, and the fair value adjustment. Assume that the Fair Value Adjustment account is adjusted for the investment portfolio on December 31, 2021.
e. Indicate items and amounts that should be reported on the 2021 income statement and year-end balance sheet.

Required

a. Provide entries for 5M Corporation for the purchases of equity securities in 2020.
b. Provide entries for 5M Corporation to adjust securities to fair value on December 31, 2020.
c. Record the purchase of Starbux Corporation common stock in 2021.
d. Record the receipt of declared dividends on the Kolgate common stock in 2021.
e. Record the sale of Starbux common stock in 2021. Assume FIFO (first-in, first-out) order when shares are sold.
f. Provide the entry for 5M Corporation on December 31, 2021, to adjust the Fair Value Adjustment account.

Exercise 14-62
Recording Entries for Equity Investment: FV-NI and Equity Method **LO4, 5**

On January 1, 2020, Allen Corporation purchased 30% of the 30,000 outstanding common shares of Towne Corporation at $17 per share as a long-term investment. On the date of purchase, the book value and the fair value of the net assets of Towne Corporation were equal. During the year, Towne Corporation reported net income of $24,000 and declared and paid dividends of $8,000. As of December 31, 2020, common shares of Towne Corporation were trading at $20 per share.

Required

a. Assume that Allen Corporation had significant influence over Towne Corporation. Prepare the entries for 2020 to record the purchase of the investment, the receipt of declared dividends, and the proportionate share of net income.
b. Assume that Allen Corporation did not have significant influence over Towne Corporation. Record the entries in 2020 to record the purchase of the investment, the receipt of declared dividends, and the fair value adjustment.
c. Indicate the amount of income that would be reported on the 2020 income statement and the investment balance on the 2020 year-end balance sheet under requirement (*a*) and requirement (*b*).

Exercise 14-63
Analyzing Investment Account: Equity Method **LO5**
Hint: See Demo 14-5

Assume that Fleetwood Inc. purchased 40% of the voting stock of Mac Corporation on January 1, 2020, for $100,000, an amount equal to 40% of Mac's book value. Assume that the fair value and book value of all net assets of Mac were the same at that time. During the year, Fleetwood Inc. debited the Investment account for $12,000 and credited the Investment account for $4,000. The ending balance of Fleetwood's Investment account is $108,000 at December 31, 2020. Assume that Fleetwood Inc. has significant influence over Mac Corporation.

Required

a. What did Mac Corporation report as net income for the year 2020? What is Fleetwood's share of Mac Corporation's net income for the year?
b. What did Mac Corporation report as dividends for the year 2020? What is Fleetwood's share of Mac Corporation's dividends for the year?

Exercise 14-64
Recording Entries for Equity Investment: Equity Method **LO5**
Hint: See Demo 14-5

On January 1, 2020, Allen Corporation purchased 30% of the 30,000 outstanding common shares of Towne Corporation at $15 per share as a long-term investment. On the date of purchase, the book value and the fair value of the net assets of Towne Corporation were equal. During the year, Towne Corporation reported net income of $24,000. Towne Corporation declared and paid cash dividends of $8,000 on December 30, 2020, to shareholders on record. As of December 31, 2020, common shares of Towne Corporation were trading at $20 per share.

Required

a. Record the entries in 2020 assuming that Allen Corporation had significant influence over Towne Corporation.
b. Indicate the effects of this investment on the 2020 income statement and year-end balance sheet.

Exercise 14-65
Recording Entries for Equity Investment: Equity Method **LO5**
Hint: See Demo 14-5

On January 1, 2020, Mercedez Company purchased 400 of the 1,000 outstanding shares of Auto Supplies Inc. for $40,000. At that date, the balance sheet of Auto Supplies Inc. showed the following values.

Assets not subject to depreciation	$40,000*
Assets subject to depreciation	26,000**
Liabilities	6,000*
Common stock (par $1)	50,000
Retained earnings	10,000

* Same as fair value. ** Fair value $30,000; the assets have a 10-year remaining useful life (straight-line depreciation).

Required

a. Provide the entry by Mercedez Company to record the acquisition at a cost of $40,000.

b. Assume that on December 31, 2020 (end of the accounting period), Auto Supplies Inc. reported net income of $12,000. Provide all year-end entries for Mercedez Company.

c. In February 2021, Auto Supplies Inc. declared and paid a $2 per share cash dividend. Provide the necessary entry for Mercedez Company.

Exercise 14-66 Recording Entries for Equity Investment: Equity Method **LO5**

On January 1, 2020, Case Corporation purchased 3,000 of the 10,000 outstanding shares of common stock of Dow Corporation for $28,000 cash. At that date, Dow's balance sheet reflected the following book values.

Assets not subject to depreciation	$25,000*
Assets subject to depreciation	30,000**
Liabilities	5,000*
Common stock (par $4)	40,000
Retained earnings, ~~$10,000~~	10,000

* Same as fair value. ** Fair value $38,000; the assets have a 10-year remaining useful life (straight-line depreciation).

Dow Corporation reported net income of $18,000 in 2020 and declared and paid a $1 per share cash dividend.

Required

Assuming that the equity method is appropriate, determine the value of Case Corporation's Investment account on December 31, 2020, for its holding of common stock of Dow Corporation.

Exercise 14-67 Recording Entries for Equity Investment: Equity Method, Partial Year **LO5**
Hint: See Demo 14-5

On July 1, 2020, Allen Corporation purchased 30% of the 30,000 outstanding common shares of Towne Corporation at $17 per share as a long-term investment. On the date of purchase, the book value and the fair value of the net assets of Towne Corporation were equal. During the year, Towne Corporation reported net income of $24,000. Towne Corporation paid cash dividends of $8,000 on December 30, 2020, to shareholders on record. As of December 31, 2020, common shares of Towne Corporation were trading at $20 per share.

Required

a. Record Allen's entries in 2020 assuming that Allen Corporation had significant influence over Towne Corporation.

b. Indicate the effects of this investment on the 2020 income statement of Allen Corporation and its year-end balance sheet.

Exercise 14-68 Reporting Various Investment Securities **LO1, 2, 3, 4, 5**

Complete the following table for four types of investment securities.

Security Type	Carrying Value	Fair Value	Current Asset	Non-current Asset	Unrealized Gain/Loss-Income	Unrealized Gain/Loss-Equity
Example: AFS Debt Investment[1]	*$ 9,000*	*$ 8,000*	*n.a.*	*$8,000*	*n.a.*	*$(1,000)*
1. AFS Debt Investment[1]	3,000	3,300				
2. TS Debt Investment[2]	8,000	7,500				
3. HTM Debt Investment[3]	18,000	17,000				
4. Equity Investment—measured at FV-NI[2]	21,000	23,000				

[1] Investor intends to hold investment for at least one year but less than full term.

[2] Investor intends to hold for less than one year.

[3] Debt investment is purchased with a remaining term of 10 years.

Exercise 14-69 Recording Entries for Impairment of Investments—HTM **LO6**
Hint: See Demo 14-6

Atlanta Inc. holds an HTM bond investment in Falcons Corporation. The carrying value of the investment is $140,500 on December 31, 2020. Atlanta Inc. determines the present value of the amounts expected to be collected under the debt contract under the CECL model to be $120,000.

Required

a. Record the impairment loss on December 31, 2020.

b. Assume that Atlanta Inc. holds the HTM bond investment in Falcons Corporation on December 31, 2021. Record the adjusting entry if the present value of the amounts expected to be collected under the debt contract under the CECL model is now estimated to be $130,000.

Appendices—Exercises

App—Exercise 14-119
Accounting for Transfer from HTM to AFS **LO7**

Glacier Inc. held the following investments in an HTM security portfolio at December 31, 2020.

Security	Cost	Fair Value at Dec. 31, 2020	Unrealized Gain (Loss)
Rain Gear Company bonds	$ 57,000	$ 65,000	$ 8,000
Camping Unlimited Inc. bonds . . .	76,000	86,000	10,000
Total	$133,000	$151,000	$18,000

Both bonds were purchased at par value. At January 1, 2021, Glacier Inc. changed its intent from holding the bonds to maturity to holding these securities for an indefinite period of time due to a decrease in the credit standings of both investees. As a result, Glacier Inc. will begin to account for the securities as AFS beginning January 1, 2021.

Required

Record the entry on January 1, 2021, the date of transfer.

App—Exercise 14-120
Accounting for Transfer from AFS to HTM **LO7**

Refer to the information in Exercise 14-119 but now assume that the bonds were originally recorded as AFS securities but are transferred to HTM bonds on January 1, 2021, due to a change in Glacier's ability and intent to now hold the securities to maturity. Both bonds have a remaining term of 10 years. Assume the company straight-line amortizes the unrealized gain to income.

Required

a. Record the entry on January 1, 2021, the date of transfer.
b. Record any required adjusting entries on December 31, 2021, related to the HTM bonds.

App—Exercise 14-121
Accounting for Special-Purpose Fund **LO8**

On January 1, 2020, Koke Company decided to create a special-purpose fund to be identified as the special contingency fund. The resources in the fund will be used to reimburse employees injured while on the job. The company desires to accumulate a $150,000 fund balance by the end of 2022 by making three equal annual deposits starting on January 1, 2020. The independent trustee handling the fund will increase the fund by 9% compound interest each December 31.

Required

a. Compute the amount of the annual deposit.
b. Provide entries relating to the fund that Koke Company should make each year through December 31, 2022.
c. Assume that on January 2, 2023, the trustee made the first payment from the fund in the amount of $1,000. Provide the entry, if any, that Koke Company should make.

App—Exercise 14-122
Accounting for Call Options **LO9**
Hint: See Demo 14-9A

On January 2, 2020, Starz Inc. established an agreement with Silver Co. allowing Starz Inc. to call 100 shares of Gold Inc. stock at a strike price of $45 per share through June 30, 2021. On January 2, 2020, the current market price of Gold Inc. is $45 and the option premium is $200. On June 30, 2020, the fair value of the option is $900.

Required

a. Prepare the journal entry on January 2, 2020, to record the purchase of the call option.
b. Prepare the entry to adjust the call option to fair value on June 30, 2020.
c. When will the call option become valuable to Starz Inc.?

App—Exercise 14-123
Accounting for Fair Value Hedge: Put Option **LO9**

PierTwo purchased at par, 100, $100, 5% bonds of Supplier Inc. on January 1, 2020. In order to avoid exposure to fluctuations in the fair value of Supplier Inc. bonds, PierTwo acquires a 12-month put option on January 1, 2020, to sell 100 bonds of Supplier Inc. at a price of $100 per bond. The hedge is considered to be highly effective. On December 31, 2020, the market price per share of Supplier Inc. bonds fell to $90 per bond while the value of the put option is estimated to be $980. For simplicity, ignore interest on the bonds and assume the purchase price of the put option is zero.

Required

a. Prepare the entry to adjust the investment to fair value on December 31, 2020.
b. Prepare the entry to adjust the put option to fair value on December 31, 2020.
c. Calculate the net effect on the income statement of holding the put option and the debt securities in 2020.

Select Accounting Treatment

① Adjust FVA at Year-End

e. Sale of Bond Investment

The company recognizes a gain as the difference between the cash received of $21,000 and the amortized cost of bonds of $18,556 ($18,528 + $28).

January 1, 2021—To record sale of bond investment

Cash ($21,000 + $250)	21,250	
Interest Receivable		250
Investment in TS—Mack Bonds		18,556
Gain on Sale of Investment		2,444

Cash		Interest Receiv		Invest—TS		Gain on Sale of Invest
21,250	18,528	250	250	18,528	18,556	2,444
				28		

f. Year-end Adjustment

December 31, 2021—To eliminate fair value adjustment balance

Unrealized Gain or Loss—Income	2,444	
Fair Value Adjustment—TS		2,444

FVA—TS		Unreal Gain or Loss—Inc	
2,444	2,444	2,444	2,444

② Adjust FVA at Sale and Year-End

e. Sale of Bond Investment

The investment is recognized at fair value at the date of sale, so no adjustment to fair value is required on the sale date.

January 1, 2021—To record sale of bond investment

Cash ($21,000 + $250)	21,250	
Interest Receivable		250
Investment in TS—Mack Bonds		18,556
Fair Value Adjustment—TS		2,444

Cash		Interest Receiv		Invest—TS		FVA—TS	
21,250	18,528	250	250	18,528	18,556	2,444	2,444
				28			

f. Year-end Adjustment

No adjustment is required at year-end to the Fair Value Adjustment account (currently at a zero balance) because the company held no investments in TS at year-end.

g. The journal entries would generally be the same if an HTM security were accounted for under the fair value option. The account titles may be updated to reflect the fair value option election of an HTM security.

Review 14-3

a. **January 1, 2020—To record purchase of investment**

Assets	=	Liabilities	+	Equity
+83,464				
−83,464				

Cash		Invest—AFS	
	83,464	83,464	

Investment in AFS Securities—Mack Bonds (PV(0.05,5,−4800,−80000))	83,464	
Cash		83,464

b. **December 31, 2020—To record interest revenue**

Assets	=	Liabilities	+	Equity
+4,800				+4,173
−627				

Interest Receiv		Invest—AFS		Interest Rev
4,800		83,464	627	4,173

Interest Receivable ($80,000 × 0.06)	4,800	
Investment in AFS Securities—Mack Bonds		627
Interest Revenue ($83,464 × 0.05)		4,173

Partial Amortization Schedule

Date	Stated Interest	Market Interest	Discount Amortization	Bond Amortized Cost
Jan. 1, 2020				$83,464
Dec. 31, 2020	$4,800	$4,173	$627	82,837
Dec. 31, 2021	4,800	4,142	658	82,179

December 31, 2020—To adjust investment to fair value

Assets	=	Liabilities	+	Equity
−6,837				−6,837

FVA—AFS		Unreal Gain or Loss—OCI	
6,837		6,837	

Unrealized Gain or Loss—OCI ($82,837 − ($80,000 × 0.95))	6,837	
Fair Value Adjustment—AFS		6,837