

QUESTIONS FOR REVIEW OF KEY TOPICS

Chapter 4 The Income Statement, Comprehensive Income, and the Statement of Cash Flows

Question 4–1

The income statement is a change statement that reports transactions—revenues, expenses, gains, and losses—that cause owners' equity to change during a specified reporting period.

Question 4–2

Income from continuing operations includes the revenue, expense, gain, and loss transactions that are more likely to continue in future periods. It is important to segregate the income effects of these items because they are the most important transactions in terms of predicting future cash flows.

Question 4–3

Operating income includes revenues and expenses and gains and losses that are directly related to the principal revenue generating activities of the company. Nonoperating income includes items that are not directly related to these activities.

Question 4–4

The *single-step* format first lists all revenues and gains included in income from continuing operations to arrive at total revenues and gains. All expenses and losses are then grouped and subtotaled, subtracted from revenues and gains to arrive at income from continuing operations. The *multiple-step* format reports a series (multiple) of intermediate totals such as gross profit, operating income, and income before taxes. Very often income statements adopt variations of these formats, falling somewhere in between the two extremes.

Answers to Questions (continued)

Question 4–5

The term **earnings quality** refers to the ability of reported earnings (income) to predict a company's future earnings. After all, an income statement simply reports on events that already have occurred. The relevance of any historical-based financial statement hinges on its predictive value.

Question 4–6

Restructuring costs include costs associated with shutdown or relocation of facilities or downsizing of operations. They are reported as an operating expense in the income statement.

Question 4–7

The process of intraperiod tax allocation separately reports tax expense or tax benefit with income from continuing operations and with income from discontinued operations. Just as income from discontinued operations, by definition, won't continue to future periods, neither will the tax consequences associated with those operations continue. By allocating the portion of taxes between continuing and discontinued operations, investors and others can better predict a company's future after-tax performance.

Question 4–8

The net-of-tax income effects of a discontinued operation must be disclosed separately in the income statement, below income from continuing operations. The income effects include income (loss) from operations and gain (loss) on disposal. The gain or loss on disposal must be disclosed either on the face of the statement or in a disclosure note. If the component is held for sale but not sold by the end of the reporting period, the income effects will include income (loss) from operations and an impairment loss if the fair value less costs to sell is less than the book value of the component's assets. The income (loss) from operations of the component is reported separately in discontinued operations on prior income statements presented for comparative purposes.

Answers to Questions (continued)

Question 4–9

A change in accounting principle refers to a change from one acceptable accounting method to another.

The various approaches chosen by the FASB to require implementation by companies include:

1. **Retrospective approach.** The new standard is applied to all periods presented in the financial statements. That is, we restate prior period financial statements as if the new accounting method had been used in those prior periods. We revise the balance of each account affected to make those statements appear as if the newly adopted accounting method had been applied all along.
2. **Modified retrospective approach.** The new standard is applied to the adoption period only. Prior period financial statements are not restated. The cumulative effect of the change on prior periods' net income is shown as an adjustment to the beginning balance of retained earnings in the adoption period.
3. **Prospective approach.** This approach requires neither a modification of prior period financial statements nor an adjustment to account balances. Instead, the change is simply implemented in the current period and all future periods.

Question 4–10

A change in accounting estimate is accounted for in the year of the change and in subsequent periods; prior years' financial statements are not restated. A disclosure note should justify that the change is preferable and should describe the effect of a change on any financial statement line items and per share amounts affected for all periods reported.

Answers to Questions (continued)

Question 4–11

Prior period adjustments are accounted for by restating prior years' financial statements when those statements are presented again for comparison purposes. The beginning of period retained earnings is increased or decreased on the statement of shareholders' equity as of the beginning of the earliest period presented.

Question 4–12

Earnings per share (EPS) is the amount of income achieved during a period for each share of common stock outstanding. If there are different components of income reported below continuing operations, their effects on earnings per share must be disclosed. If a period contains discontinued operations, EPS data must be reported separately for income from continuing operations, discontinued operations, and net income.

Question 4–13

Comprehensive income is the total change in equity for a reporting period other than from transactions with owners. Reporting comprehensive income can be accomplished with a continuous statement of comprehensive income that includes an income statement and other comprehensive income items or in two statements, an income statement and a separate statement of comprehensive income.

Question 4–14

The purpose of the statement of cash flows is to provide information about the cash receipts and cash disbursements of an enterprise during a period. Similar to the income statement, it is a *change* statement, summarizing the transactions that caused cash to change during a particular period of time.

Answers to Questions (continued)

Question 4–15

The three categories of cash flows reported on the statement of cash flows are:

1. *Operating activities*—Inflows and outflows of cash related to the transactions entering into the determination of net income from operations.
2. *Investing activities*—Involve the acquisition and sale of (1) long-term assets used in the business and (2) nonoperating investment assets.
3. *Financing activities*—Involve cash inflows and outflows from transactions with creditors (excluding trade payables) and owners.

Question 4–16

Noncash investing and financing activities are transactions that do not increase or decrease cash but are important investing and financing activities. An example would be the acquisition of property, plant, and equipment (an investing activity) by issuing either long-term debt or equity securities (a financing activity) to the seller. These activities are reported either on the face of the statement of cash flows or in a disclosure note.

Question 4–17

The direct method of reporting cash flows from operating activities presents the cash effect of each operating activity *directly* in the statement of cash flows. The indirect method of reporting cash flows from operating activities is derived *indirectly*, by starting with reported net income and adding and subtracting items to convert that amount to a cash basis.

Answers to Questions (continued)

Question 4–18

U.S. GAAP designates cash outflows for interest payments and cash inflows from interest and dividends received as operating cash flows. Dividends paid to shareholders are classified as financing cash flows. IFRS allows more flexibility. Companies can report interest and dividends paid as either operating or financing cash flows and interest and dividends received as either operating or investing cash flows. Interest and dividend payments usually are reported as financing activities. Interest and dividends received normally are classified as investing activities.

Question 4–19

Receivables turnover ratio	=	$\frac{\text{Net sales}}{\text{Average accounts receivable (net)}}$
Inventory turnover ratio	=	$\frac{\text{Cost of goods sold}}{\text{Average inventory}}$
Asset turnover ratio	=	$\frac{\text{Net sales}}{\text{Average total assets}}$

Activity ratios are designed to provide information about a company's effectiveness in managing assets. Activity or turnover of certain assets measures the frequency with which those assets are replaced. The greater the number of times an asset turns over, the less cash a company must devote to that asset, and the more cash it can commit to other purposes.

Answers to Questions (continued)

Question 4–20

Profit margin on sales	=	$\frac{\text{Net income}}{\text{Net sales}}$
Return on assets	=	$\frac{\text{Net income}}{\text{Average total assets}}$
Return on equity	=	$\frac{\text{Net income}}{\text{Average shareholders' equity}}$

A fundamental element of an analyst's task is to develop an understanding of a firm's profitability. Profitability ratios provide information about a company's ability to earn an adequate return relative to sales or resources devoted to operations. Resources devoted to operations can be defined as total assets or only those assets provided by owners, depending on the evaluation objective.

Question 4–21

$$\begin{aligned} \text{Return on equity} &= \text{Profit margin} \times \text{Asset turnover} \times \text{Equity multiplier} \\ \frac{\text{Net income}}{\text{Avg. total equity}} &= \frac{\text{Net income}}{\text{Total sales}} \times \frac{\text{Total sales}}{\text{Avg. total assets}} \times \frac{\text{Avg. total assets}}{\text{Avg. total equity}} \end{aligned}$$

The DuPont framework shows return on equity as being driven by profit margin (reflecting a company's ability to earn income from sales), asset turnover (reflecting a company's effectiveness in using assets to generate sales), and the equity multiplier (reflecting the extent to which a company has used debt to finance its assets).

Answers to Questions (concluded)

Question 4–22

Current interim reporting requirements and existing practice generally view interim reports as integral parts of annual statements. However, the discrete approach is applied to some items. Most revenues and expenses are recognized in interim periods as they are provided or incurred. However, if an expenditure clearly benefits more than just the period in which it is incurred, the expense should be spread among the periods benefited. Examples include annual repair expenses, property tax expense, and advertising expenses incurred in one quarter that clearly benefit later quarters. These are assigned to each quarter through the use of accruals and deferrals. On the other hand, major events such as discontinued operations and unusual items should be reported separately in the interim period in which they occur.

Question 4–23

U.S. GAAP views interim reports as an integral part of the annual report, so amounts that affect multiple interim periods are accrued or deferred and then charged to each of the periods they affect. IFRS takes much more of a discrete-period approach than does U.S. GAAP, such that costs for repairs, property taxes, advertising, etc., that do not meet the definition of an asset at the end of an interim period are expensed entirely in the period in which they occur.

BRIEF EXERCISES

Brief Exercise 4–1

PACIFIC SCIENTIFIC CORPORATION		
Income Statement		
For the Year Ended December 31, 2024		
(\$ in millions)		
<i>Revenues and gains:</i>		
Sales revenue		\$2,106
Gain on sale of investments		<u>45</u>
Total revenues and gains		2,151
<i>Expenses and losses:</i>		
Cost of goods sold	\$1,240	
Selling expense	126	
General and administrative expense	105	
Interest expense.....	<u>40</u>	
Total expenses and losses		<u>1,511</u>
Income before income taxes		640
Income tax expense*.....		<u>160</u>
Net income		<u>\$ 480</u>

* $\$640 \times 25\% = \160

Brief Exercise 4–2

(a)	Sales revenue	\$2,106
	Less: Cost of goods sold	<u>(1,240)</u>
	Gross profit	866
	Less: Selling expense	(126)
	General and administrative expense	<u>(105)</u>
	Operating income	\$ 635
(b)	Gain on sale of investments	\$45
	Interest expense	<u>(40)</u>
	Nonoperating income	\$5

Brief Exercise 4–3

PACIFIC SCIENTIFIC CORPORATION		
Income Statement		
For the Year Ended December 31, 2024		
(\$ in millions)		
Sales revenue		\$2,106
Cost of goods sold		<u>1,240</u>
Gross profit		866
<i>Operating expenses:</i>		
Selling expense	\$126	
General and administrative expense	<u>105</u>	
Total operating expenses		<u>231</u>
Operating income		635
<i>Other income (expense):</i>		
Gain on sale of investments	45	
Interest expense	<u>(40)</u>	
Total other income, net		<u>5</u>
Income before income taxes		640
Income tax expense*		<u>160</u>
Net income		<u>\$ 480</u>

*\$640 × 25%

Brief Exercise 4–4

(a)	Sales revenue	\$300,000
	Less: Cost of goods sold	(160,000)
	General and administrative expense	(40,000)
	Restructuring costs	(50,000)
	Selling expense	<u>(25,000)</u>
	Operating income	\$ 25,000
(b)	Operating income	\$25,000
	Add: Interest revenue	4,000
	Deduct: Loss on sale of investments	<u>(22,000)</u>
	Income before income taxes	\$ 7,000
(c)		
	Income before income taxes	\$ 7,000
	Income tax expense (25%)	<u>(1,750)</u>
	Net income	\$ 5,250

Brief Exercise 4–5

WHITE AND SONS, INC.	
Partial Income Statement	
For the Year Ended December 31, 2024	
Income from continuing operations before income taxes ...	\$ 800,000
Income tax expense*	<u>200,000</u>
Income from continuing operations	600,000
Loss on discontinued operations (net of \$100,000 tax benefit).....	<u>(300,000)</u>
Net income	<u>\$ 300,000</u>
Earnings per share:	
Income from continuing operations	\$ 6.00
Loss on discontinued operations	<u>(3.00)</u>
Net income	<u>\$ 3.00</u>

*\$800,000 × 25%

Note: Restructuring costs, interest revenue, and loss on sale of investments are included in income from continuing operations before income taxes.

Brief Exercise 4–6

REVOLUTIONARY INDUSTRIES	
Partial Income Statement	
For the Year Ended December 31, 2024	
Income from continuing operations before income taxes ...	\$ 12,000,000
Income tax expense*	<u>3,000,000</u>
Income from continuing operations	<u>\$ 9,000,000</u>
Discontinued operations:	
Income from operations of discontinued component	
(including gain on disposal of \$2,000,000)**	6,000,000
Income tax expense***	<u>1,500,000</u>
Income from discontinued operations	<u>4,500,000</u>
Net income	<u>\$ 13,500,000</u>

* $\$12,000,000 \times 25\%$

** Income from operations of discontinued component, before tax:

Income from operations	\$ 4,000,000
Gain on sale of assets	<u>2,000,000</u> (\$9 million less \$7 million)
Income from operations of discontinued component, before tax	\$ 6,000,000

*** $\$6,000,000 \times 25\%$

Brief Exercise 4–7

CALIFORNIA MICROTECH CORPORATION	
Partial Income Statement	
For the Year Ended December 31, 2024	
Income from continuing operations before income taxes...	\$ 5,800,000
Income tax expense*	<u>1,450,000</u>
Income from continuing operations	<u>\$ 4,350,000</u>
Discontinued operations:	
Loss from operations of discontinued component	
(including gain on disposal of \$2,000,000)**	(1,600,000)
Income tax benefit***	<u>400,000</u>
Loss on discontinued operations	<u>(1,200,000)</u>
Net income	<u>\$ 3,150,000</u>

* $\$5,800,000 \times 25\%$

** Loss from operations of discontinued component, before tax:

Loss from operations	\$(3,600,000)
Gain on sale of assets	<u>2,000,000</u> (\$10 million less \$8 million)
Loss from operations of discontinued component, before tax	\$(1,600,000)

*** $\$1,600,000 \times 25\%$

Brief Exercise 4–8

CALIFORNIA MICROTECH CORPORATION

Partial Income Statement

For the Year Ended December 31, 2024

Income from continuing operations before income taxes ...	\$ 5,800,000
Income tax expense*	<u>1,450,000</u>
Income from continuing operations	<u>\$ 4,350,000</u>
Discontinued operations:	
Loss from operations of discontinued component**	(3,600,000)
Income tax benefit***	<u>900,000</u>
Loss on discontinued operations	<u>(2,700,000)</u>
Net income	<u>\$ 1,650,000</u>

* $\$5,800,000 \times 25\%$

** Includes only the loss from operations. There is no impairment loss because the fair value of segment assets (\$10 million) is greater than their book value (\$8 million).

*** $\$3,600,000 \times 25\%$

Brief Exercise 4–9

CALIFORNIA MICROTECH CORPORATION	
Partial Income Statement	
For the Year Ended December 31, 2024	
Income from continuing operations before income taxes...	\$ 5,800,000
Income tax expense*	<u>1,450,000</u>
Income from continuing operations	<u>\$ 4,350,000</u>
Discontinued operations:	
Loss from operations of discontinued component	
(including impairment loss of \$1,000,000)**	(4,600,000)
Income tax benefit***	<u>1,150,000</u>
Loss on discontinued operations	<u>(3,450,000)</u>
Net income	<u>\$ 900,000</u>

* $\$5,800,000 \times 25\%$

** Loss from operations of discontinued component:

Loss from operations	\$(3,600,000)
Impairment loss (\$8 million book value less \$7 million net fair value)	<u>\$(1,000,000)</u>
Loss from operations of discontinued component, before tax	\$(4,600,000)

*** $\$4,600,000 \times 25\%$

Brief Exercise 4–10

ATLANTIC BEVERAGE COMPANY

Statement of Comprehensive Income For the Year Ended December 31, 2024

Net income		\$650,000
Other comprehensive income, net of tax:		
Loss on derivatives	\$(45,000)*	
Gain on debt securities	<u>30,000 **</u>	
Total other comprehensive income (loss) ...		<u>(15,000)</u>
Comprehensive income		<u>\$635,000</u>

* $\$60,000 - (\$60,000 \times 25\%)$

** $\$40,000 - (\$40,000 \times 25\%)$

Brief Exercise 4–11

Cash flows from operating activities:

Cash received from customers	\$ 660,000	
Cash received for interest	12,000	
Cash paid for interest	(18,000)	
Cash paid for operating expenses	<u>(440,000)</u>	
Net cash flows from operating activities		<u>\$214,000</u>

Only these four cash flow transactions relate to operating activities. The others are investing and financing activities.

Brief Exercise 4–12

Cash flows from investing activities:

Collection of notes receivable	\$100,000	
Sale of land	40,000	
Purchase of equipment	<u>(120,000)</u>	
Net cash flows from investing activities		\$20,000

Cash flows from financing activities:

Issuance of common stock	\$200,000	
Dividends paid to shareholders	<u>(30,000)</u>	
Net cash flows from financing activities		\$170,000

Brief Exercise 4–13

Cash flows from operating activities:

Net income	\$45,000	
<i>Adjustments for noncash effects:</i>		
Depreciation expense	80,000	
<i>Changes in operating assets and liabilities:</i>		
Increase in prepaid rent	(60,000)	
Increase in salaries payable	15,000	
Increase in income taxes payable	<u>12,000</u>	
Net cash inflows from operating activities		\$92,000

Brief Exercise 4–14

Under IFRS, interest received and interest paid usually are classified as investing and financing cash flows, respectively, not operating cash flows as with U.S. GAAP. The revised cash flow categories usually would appear as follows:

Cash flows from operating activities:

Cash received from customers	\$ 660,000	
Cash paid for operating expenses	<u>(440,000)</u>	
Net cash flows from operating activities		\$220,000

Cash flows from investing activities:

Collection of notes receivable	\$100,000	
Sale of land	40,000	
<i>Interest on notes receivable</i>	12,000	
Purchase of equipment	<u>(120,000)</u>	
Net cash flows from investing activities		\$32,000

Cash flows from financing activities:

Issuance of common stock	\$200,000	
Dividends paid to shareholders	(30,000)	
<i>Interest on notes payable</i>	<u>(18,000)</u>	
Net cash flows from financing activities		\$152,000

$$\text{Inventory turnover ratio} = \frac{\text{Cost of goods sold}}{\text{Average inventory (net)}}$$

$$\begin{aligned} \text{Inventory turnover ratio} &= \frac{\$400,000^*}{[\$80,000 + \$200,000] \div 2} \\ &= \mathbf{5.71 \text{ times}} \end{aligned}$$

Brief Exercise 4–15

*\$600,000 – \$200,000

Brief Exercise 4–16

$$\begin{aligned}\text{Profit margin} &= \frac{\text{Net income}}{\text{Net sales}} \\ &= \frac{\$65,000}{\$420,000} \\ &= \mathbf{15.48\%}\end{aligned}$$

$$\begin{aligned}\text{Return on assets} &= \frac{\text{Net income}}{\text{Average total assets}} \\ &= \frac{\$65,000}{\$800,000} \\ &= \mathbf{8.125\%}\end{aligned}$$

$$\begin{aligned}\text{Return on equity} &= \frac{\text{Net income}}{\text{Average shareholders' equity}} \\ &= \frac{\$65,000}{\$522,500^*} \\ &= \mathbf{12.44\%}\end{aligned}$$

Shareholders' equity, beginning of period	\$500,000
Add: Net income	65,000
Deduct: Dividends	<u>(20,000)</u>
Shareholders' equity, end of period	\$545,000

*Average shareholders' equity = $(\$500,000 + \$545,000) \div 2 = \$522,500$

Brief Exercise 4–17

$$\text{Return on equity} = \text{Profit margin} \times \text{Asset turnover} \times \text{Equity multiplier}$$

$$\frac{\text{Net income}}{\text{Avg. total equity}} = \frac{\text{Net income}}{\text{Net sales}} \times \frac{\text{Net sales}}{\text{Avg. total assets}} \times \frac{\text{Avg. total assets}}{\text{Avg. total equity}}$$

$$\begin{aligned} \text{Return on equity} &= \frac{\text{Net income}}{\text{Average shareholders' equity}} \\ &= \frac{\$65,000}{\$522,500} \\ &= \mathbf{12.44\%} \end{aligned}$$

$$\begin{aligned} \text{Profit margin} &= \frac{\text{Net income}}{\text{Net sales}} \\ &= \frac{\$65,000}{\$420,000} \\ &= \mathbf{15.48\%} \end{aligned}$$

$$\begin{aligned} \text{Asset turnover} &= \frac{\text{Net sales}}{\text{Average total assets}} \\ &= \frac{\$420,000}{\$800,000} \\ &= \mathbf{0.525 \text{ times}} \end{aligned}$$

$$\begin{aligned}
 \text{Equity multiplier} &= \frac{\text{Average total assets}}{\text{Average shareholders' equity}} \\
 &= \frac{\$800,000}{\$522,500} \\
 &= \mathbf{1.53}
 \end{aligned}$$

Check: ROE = 15.48% profit margin \times 0.525 asset turnover \times 1.53 equity multiplier = 12.43% (difference due to rounding)

Brief Exercise 4–18

$$\begin{array}{rcl}
 \text{Inventory turnover ratio} & = & \text{Cost of goods sold} \div \text{Average inventory} \\
 6.0 & = & \quad \times \quad \div \quad \$75,000
 \end{array}$$

$$\text{Cost of goods sold} = \$75,000 \times 6.0 = \$450,000$$

$$\begin{array}{rcl}
 \text{Net sales} & - & \text{Cost of goods sold} = \text{Gross profit} \\
 \$600,000 & - & \$450,000 = \mathbf{\$150,000}
 \end{array}$$

EXERCISES

Exercise 4–1

Operating revenues:		
Sales revenue	<u>\$12,500,000</u>	
Total operating revenues		\$12,500,000
Less operating expenses:		
Cost of goods sold	\$6,200,000	
Selling expense	620,000	
General and administrative expense	1,520,000	
Research and development expense	<u>1,200,000</u>	
Total operating expenses		<u>9,540,000</u>
Operating income		\$2,960,000

Note: Interest revenue, loss on sale of investments, and interest expense are all nonoperating items and would be reported in the income statement as “Other income (expense)” below operating income. Income tax expense is a line item in the income statement shown after nonoperating income (expense).

Exercise 4–2

Requirement 1

GREEN STAR CORPORATION		
Income Statement		
For the Year Ended December 31, 2024		
<i>Revenues and gains:</i>		
Sales revenue		\$1,300,000
Interest revenue		30,000
Gain on sale of investments		<u>50,000</u>
Total revenues and gains		1,380,000
<i>Expenses and losses:</i>		
Cost of goods sold	\$720,000	
Selling expense.....	160,000	
General and administrative expense.....	75,000	
Interest expense	<u>40,000</u>	
Total expenses and losses		<u>995,000</u>
Income before income taxes		385,000
Income tax expense		<u>130,000</u>
Net income		<u>\$ 255,000</u>

Exercise 4–2 (concluded)

Requirement 2

GREEN STAR CORPORATION		
Income Statement		
For the Year Ended December 31, 2024		
Sales revenue		\$1,300,000
Cost of goods sold		<u>720,000</u>
Gross profit		580,000
<i>Operating expenses:</i>		
Selling expense	\$160,000	
General and administrative expense	<u>75,000</u>	
Total operating expenses		<u>235,000</u>
Operating income		345,000
<i>Other income (expense):</i>		
Interest revenue	30,000	
Gain on sale of investments	50,000	
Interest expense	<u>(40,000)</u>	
Total other income, net		<u>40,000</u>
Income before income taxes		385,000
Income tax expense		<u>130,000</u>
Net income		<u>\$ 255,000</u>

Exercise 4–3

Requirement 1

GENERAL LIGHTING CORPORATION

Income Statement

For the Year Ended December 31, 2024

Revenues and gains:

Sales revenue	\$2,350,000
Interest revenue	<u>80,000</u>
Total revenues and gains	2,430,000

Expenses and losses:

Cost of goods sold	\$1,200,300
Selling expense.....	300,000
General and administrative expense.....	150,000
Interest expense	90,000
Loss on sale of investments	22,500
Loss on inventory write-down	<u>200,000</u>
Total expenses and losses	<u>1,962,800</u>
Income before income taxes	467,200
Income tax expense *	<u>116,800</u>
Net income	<u>\$ 350,400</u>

* $\$467,200 \times 25\%$

Exercise 4–3 (concluded)

Requirement 2

GENERAL LIGHTING CORPORATION	
Income Statement	
For the Year Ended December 31, 2024	
Sales revenue	\$2,350,000
Cost of goods sold	<u>1,200,300</u>
Gross profit	1,149,700
<i>Operating expenses:</i>	
Selling expense	\$300,000
General and administrative expense	150,000
Loss on inventory write-down	<u>200,000</u>
Total operating expenses	<u>650,000</u>
Operating income	499,700
<i>Other income (expense):</i>	
Interest revenue	80,000
Loss on sale of investments	(22,500)
Interest expense	<u>(90,000)</u>
Total other income, net	<u>(32,500)</u>
Income before income taxes	467,200
Income tax expense *	<u>116,800</u>
Net income	<u>\$350,400</u>

* $\$467,200 \times 25\%$

Exercise 4–4

LINDOR CORPORATION	
Statement of Comprehensive Income	
For the Year Ended December 31, 2024	
Sales revenue	\$2,300,000
Cost of goods sold	<u>1,400,000</u>
Gross profit	900,000
<i>Operating expenses:</i>	
Selling and administrative expense	<u>420,000</u>
Operating income	480,000
<i>Other income (expense):</i>	
Interest expense	<u>(40,000)</u>
Income before income taxes	440,000
Income tax expense*	<u>110,000</u>
Net income	330,000
Other comprehensive income, net of tax:	
Gain on debt securities**	<u>60,000</u>
Comprehensive income	<u>\$ 390,000</u>

* $\$440,000 \times 25\%$

** $\$80,000 - (\$80,000 \times 25\%)$

Exercise 4–5

AXEL CORPORATION		
Income Statement		
For the Year Ended December 31, 2024		
Sales revenue		\$ 592,000
Cost of goods sold		<u>325,000</u>
Gross profit		267,000
<i>Operating expenses:</i>		
Selling expense	\$67,000	
Administrative expense	87,000	
Restructuring costs	<u>55,000</u>	
Total operating expenses		<u>209,000</u>
Operating income		58,000
<i>Other income (expense):</i>		
Interest revenue	32,000	
Interest expense	(16,000)	
Gain on sale of investments	<u>86,000</u>	
Total other income, net		<u>102,000</u>
Income before income taxes.....		160,000
Income tax expense*		<u>40,000</u>
Net income		<u><u>\$120,000</u></u>

* \$160,000 × 25%

Exercise 4–6

CHANCE COMPANY	
Partial Income Statement	
For the Year Ended December 31, 2024	
Income from continuing operations	<u>\$ 550,000</u>
Discontinued operations:	
Loss from operations of discontinued component	
(including loss on disposal of \$400,000)*	(520,000)
Income tax benefit**	<u>130,000</u>
Loss on discontinued operations	<u>(390,000)</u>
Net income	<u>\$ 160,000</u>
Earnings per share:	
Income from continuing operations	\$ 5.50
Loss on discontinued operations	<u>(3.90)</u>
Net income	<u>\$ 1.60</u>

* Loss from operations of discontinued component, before tax:

Loss from operations	\$(120,000)	
Loss on sale of assets	<u>(400,000)</u>	(\$600,000 less \$1 million)
Loss from operations of discontinued component, before tax	<u>\$(520,000)</u>	

** \$520,000 × 25%

Exercise 4–7

ESQUIRE COMIC BOOK COMPANY	
Partial Income Statement	
For the Year Ended December 31, 2024	
Income from continuing operations*	<u>\$690,000</u>
Discontinued operations:	
Income from operations of discontinued component (including loss on disposal of \$340,000)**	160,000
Income tax expense***	<u>40,000</u>
Income on discontinued operations	<u>120,000</u>
Net income	<u>\$810,000</u>

* Income from continuing operations:

Income before considering additional items	\$1,000,000
Decrease in income due to restructuring costs	<u>(80,000)</u>
Income from continuing operations before income taxes	920,000
Income tax expense (25%)	<u>(230,000)</u>
Income from continuing operations	<u>\$ 690,000</u>

** Income from operations of discontinued component, before tax:

Income from operations	\$ 500,000
Loss on sale of assets	<u>(340,000)</u>
Income from operations of discontinued component, before tax	\$ 160,000

*** $\$160,000 \times 25\%$

Exercise 4–8

Requirement 1

KANDON ENTERPRISES, INC.	
Partial Income Statement	
For the Year Ended December 31, 2024	
Income from continuing operations	<u>\$ 400,000</u>
Discontinued operations:	
Loss from operations of discontinued component	
(including impairment loss of \$40,000)*	(180,000)
Income tax benefit**	<u>45,000</u>
Loss on discontinued operations	<u>(135,000)</u>
Net income	<u><u>\$ 265,000</u></u>

* Loss from operations of discontinued component, before tax:

Loss from operations	\$(140,000)
Impairment loss (\$240,000 – \$200,000)	<u>(40,000)</u>
Loss from operations of discontinued component, before tax	\$(180,000)

** $\$180,000 \times 25\%$

Exercise 4–8 (concluded)

Requirement 2

KANDON ENTERPRISES, INC.	
Partial Income Statement	
For the Year Ended December 31, 2024	
Income from continuing operations	<u>\$ 400,000</u>
Discontinued operations:	
Loss from operations of discontinued component*.....	(140,000)
Income tax benefit**	<u>35,000</u>
Loss on discontinued operations	<u>(105,000)</u>
Net income	<u><u>\$ 295,000</u></u>

*Includes only the operating loss during the year. There is no impairment loss.

** \$140,000 × 25%

Exercise 4–9

Pretax income from continuing operations	\$14,000,000
Income tax expense	<u>(3,500,000)</u>
Income from continuing operations	10,500,000
Less: Net income	<u>7,200,000</u>
Loss from discontinued operations	\$ 3,300,000

$\$3,300,000 \div 75\% * = \$4,400,000 =$ Pretax loss from discontinued operations.

*1 – tax rate of 25% = 75%

Pretax income of division	\$4,000,000
Add: Pretax loss from discontinued operations	<u>4,400,000</u>
Impairment loss	\$8,400,000

Fair value of division's assets	\$11,000,000
Add: Impairment loss	<u>8,400,000</u>
Book value of division's assets	\$19,400,000

Exercise 4–10

Earnings per share:

Income from continuing operations	\$5.00
Loss on discontinued operations	<u>(1.60)</u>
Net income	<u>\$3.40</u>

Exercise 4–11

THE MASSOUD CONSULTING GROUP		
Statement of Comprehensive Income		
For the Year Ended December 31, 2024		
Net income		\$1,354,000
Other comprehensive income, net of tax:		
Foreign currency translation adjustment*	\$180,000	
Loss on debt securities**	<u>(60,000)</u>	
Total other comprehensive income		<u>120,000</u>
Comprehensive income		<u>\$1,474,000</u>

* $\$240,000 - (\$240,000 \times 25\%)$

** $\$80,000 - (\$80,000 \times 25\%)$

Exercise 4–12

1. b Purchase of equipment for cash.
2. a Payment of employee salaries.
3. a Collection of cash from customers.
4. c Cash proceeds from notes payable.
5. b Purchase of common stock of another corporation for cash.
6. c Issuance of common stock for cash.
7. b Sale of equipment for cash.
8. a Payment of interest on notes payable.
9. d Issuance of bonds payable in exchange for land and building.
10. c Payment of cash dividends to shareholders.
11. c Payment of principal on notes payable.

Exercise 4–13

Bluebonnet Bakers

Statement of Cash Flows

For the Year Ended December 31, 2024

Cash flows from operating activities:

Cash received from customers	\$ 380,000	
Cash received for interest	6,000	
Cash paid for merchandise	(160,000)	
Cash paid for interest	(5,000)	
Cash paid for salaries	<u>(90,000)</u>	
Net cash flows from operating activities		\$131,000

Cash flows from investing activities:

Collection of notes receivable	50,000	
Sale of investments	30,000	
Purchase of equipment	<u>(85,000)</u>	
Net cash flows from investing activities		(5,000)

Cash flows from financing activities:

Issuance of notes payable	100,000	
Payment of notes payable	(25,000)	
Dividends paid to shareholders	<u>(20,000)</u>	
Net cash flows from financing activities		<u>55,000</u>

Net increase in cash		181,000
Cash and cash equivalents, January 1		<u>17,000</u>
Cash and cash equivalents, December 31		<u>\$ 198,000</u>

Exercise 4–14

Cash collected for interest, considered an operating cash flow by U.S. GAAP, could be classified as either an operating cash flow *or* an investing cash flow according to International Financial Reporting Standards.

Cash paid for interest, considered an operating cash flow by U.S. GAAP, could be classified as either an operating cash flow *or* a financing cash flow according to International Financing Reporting Standards.

Cash collected for dividends, considered an operating cash flow by U.S. GAAP, could be classified as either an operating cash flow *or* an investing cash flow according to International Financial Reporting Standards.

Accordingly, the statement of cash flows prepared according to IFRS could be the same as under U.S. GAAP (E4–13) or could be presented as follows:

BLUEBONNET BAKERS

Statement of Cash Flows

For the Year Ended December 31, 2024

Cash flows from operating activities:

Cash received from customers	\$ 380,000	
Cash paid for merchandise	(160,000)	
Cash paid for salaries	<u>(90,000)</u>	
Net cash flows from operating activities		\$130,000

Cash flows from investing activities:

Collection of notes receivable	50,000	
Interest on notes receivable	6,000	
Sale of investments	30,000	
Purchase of equipment	<u>(85,000)</u>	
Net cash flows from investing activities		1,000

Cash flows from financing activities:

Issuance of notes payable	100,000	
Payment of notes payable	(25,000)	
Interest on notes payable	(5,000)	
Dividends paid to shareholders	<u>(20,000)</u>	
Net cash flows from financing activities		<u>50,000</u>

Net increase in cash		181,000
Cash and cash equivalents, January 1		<u>17,000</u>
Cash and cash equivalents, December 31		<u>\$ 198,000</u>

Exercise 4–15

Cash flows from operating activities:

Net income	\$17,300
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Adjustments for noncash effects:

Depreciation expense	7,800
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Changes in operating assets and liabilities:

Increase in accounts receivable	(4,000)
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Decrease in inventory	5,500
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Decrease in prepaid insurance	1,200
-------------------------------	-------

Decrease in salaries payable	(2,700)
------------------------------	---------

Increase in interest payable	<u>800</u>
------------------------------	------------

Net cash flows from operating activities	\$25,900
--	-----------------

Exercise 4–16

Requirement 1

	Operating	Investing	Financing	
1.			\$300,000	
2.		\$(10,000)	✓	
3.	✓			
4.	✓			
5.	\$ (5,000)			
6.	(6,000)			
7.	(70,000)			
8.	55,000			
9.	✓			
	<u>\$(26,000)</u>	<u>\$(10,000)</u>	<u>\$300,000</u>	= \$264,000

Exercise 4–16 (concluded)

Requirement 2

WAINWRIGHT CORPORATION		
Statement of Cash Flows		
For the Month Ended March 31, 2024		
<i>Cash flows from operating activities:</i>		
Cash received from customers	\$ 55,000	
Cash paid for rent	(5,000)	
Cash paid for insurance	(6,000)	
Cash paid for merchandise	<u>(70,000)</u>	
Net cash flows from operating activities		\$ (26,000)
<i>Cash flows from investing activities:</i>		
Purchase of equipment	<u>(10,000)</u>	
Net cash flows from investing activities		(10,000)
<i>Cash flows from financing activities:</i>		
Issuance of common stock	<u>300,000</u>	
Net cash flows from financing activities		<u>300,000</u>
Net increase in cash		264,000
Cash and cash equivalents, March 1		<u>40,000</u>
Cash and cash equivalents, March 31		<u>\$ 304,000</u>
<i>Noncash investing and financing activities:</i>		
Acquired \$40,000 of equipment by paying cash and issuing a note as follows:		
Cost of equipment		\$40,000
Cash paid		<u>10,000</u>
Note issued		\$30,000

Exercise 4–17

Cash flows from operating activities:

Net income	\$624,000
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Adjustments for noncash effects:

Depreciation and amortization expense	87,000
---------------------------------------	--------

Changes in operating assets and liabilities:

Decrease in accounts receivable	22,000
---------------------------------	--------

Increase in inventory	(9,200)
-----------------------	---------

Increase in prepaid expenses	(8,500)
------------------------------	---------

Increase in salaries payable	10,000
------------------------------	--------

Decrease in income taxes payable	(14,000)
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Net cash flows from operating activities	\$711,300
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Exercise 4–18

Cash flows from operating activities:

Net income	\$1,250,000
<i>Adjustments for noncash effects:</i>	
Depreciation expense	140,000
<i>Changes in operating assets and liabilities:</i>	
Increase in accounts receivable	(152,000)
Decrease in inventory	108,000
Decrease in prepaid expenses	62,000
Decrease in salaries payable	(30,000)
Increase in income taxes payable	<u>44,000</u>
Net cash flows from operating activities	\$1,422,000

Exercise 4–19

Consistent with U.S. GAAP, international standards also require a statement of cash flows. Consistent with U.S. GAAP, cash flows are classified as operating, investing, or financing. However, the U.S. standard designates cash outflows for interest payments and cash inflows from interest and dividends received as operating cash flows. Dividends paid to shareholders are classified as financing cash flows.

IAS No. 7, on the other hand, allows more flexibility. Companies can report interest and dividends paid as either operating or financing cash flows and interest and dividends received as either operating or investing cash flows. Interest and dividend payments usually are reported as financing activities. Interest and dividends received normally are classified as investing activities.

Exercise 4–19 (concluded)

Accordingly, the statement of cash flows prepared according to IFRS mostly likely would be presented as follows (differences from U.S. GAAP in italics):

BRONCO METALS
Statement of Cash Flows
For the Year Ended December 31, 2024

Cash flows from operating activities:

Collections from customers	\$ 353,000
Purchase of inventory	(186,000)
Payment of operating expenses	<u>(67,000)</u>
Net cash flows from operating activities	\$100,000

Cash flows from investing activities:

<i>Interest on notes receivable</i>	4,000
<i>Dividends received from investments</i>	2,400
Collection of notes receivable	100,000
Purchase of equipment	<u>(154,000)</u>
Net cash flows from investing activities	(47,600)

Cash flows from financing activities:

<i>Payment of interest on notes payable</i>	(8,000)
Issuance of common stock	200,000
Dividends paid to shareholders	<u>(40,000)</u>
Net cash flows from financing activities	<u>152,000</u>
Net increase in cash	204,400

Cash and cash equivalents, January 1 28,600

Cash and cash equivalents, December 31 \$233,000

Exercise 4–20

TIGER ENTERPRISES

Statement of Cash Flows

For the Year Ended December 31, 2024

(\$ in thousands)

Cash flows from operating activities:

Net income \$ 900

Adjustments for noncash effects:

Depreciation expense 240

Changes in operating assets and liabilities:

Decrease in accounts receivable 80

Increase in inventory (40)

Increase in prepaid insurance (30)

Decrease in accounts payable (60)

Decrease in accrued liabilities (100)

Increase in income taxes payable 50

Net cash flows from operating activities \$1,040

Cash flows from investing activities:

Purchase of equipment (300)

Net cash flows from investing activities (300)

Cash flows from financing activities:

Issuance of common stock 100

Issuance of notes payable 200

Dividends paid to shareholders (1) (940)

Net cash flows from financing activities (640)

Net increase in cash 100

Cash, January 1 200

Cash, December 31 \$ 300

(1)

Retained earnings, beginning \$540

+ Net income 900

– Dividends ?

Retained earnings, ending \$500

? = \$940

Exercise 4–21

The T-account analysis of the transactions related to operating cash flows is shown below. To derive the cash flows, the beginning and ending balances in the related assets and liabilities are inserted, together with the revenue and expense amounts from the income statements. In each balance sheet account, the remaining (plug) figure is the other half of the cash increases or decreases.

		Cash Flows (Operating)			
		(a.) 7,080		(b.) 130	
				(c.) 3,460	
				(d.) 1,900	
				(e.) 550	
<hr/>					
Sales Revenue			Accounts Receivable		
	7,000	<----->	1/1	830	(a.) 7,080
				7,000	
			12/31	750	
<hr/>					
Prepaid Insurance			Insurance Expense		
1/1	20				
(b.) 130	100	<----->		100	
12/31	50				
<hr/>					
Accounts Payable			Inventory		Cost of Goods Sold
(c.) 3,460	1/1 360		1/1	600	3,360 <----->
	3,400	<----->		3,400	3,360
	12/31 300		12/31	640	
<hr/>					
Accrued liabilities			General and admin. expense		
(d.) 1,900	1/1 400				
	1,800	<----->		1,800	
	12/31 300				
<hr/>					
Income Taxes Payable			Income Tax Expense		
(e.) 550	1/1 150				
	600	<----->		600	
	12/31 200				

Based on the information in the T-accounts above, the operating activities section of the SCF for Tiger Enterprises would be as shown next.

Exercise 4–21 (concluded)

TIGER ENTERPRISES

Statement of Cash Flows

For the Year Ended December 31, 2024

(\$ in thousands)

Cash flows from operating activities:

Cash received from customers (a)	\$ 7,080	
Cash paid for insurance (b)	(130)	
Cash paid for merchandise (c)	(3,460)	
Cash paid for general and administrative exp. (d)	(1,900)	
Cash paid for income taxes (e)	<u>(550)</u>	
Net cash flows from operating activities		\$ 1,040

Exercise 4–22

1. FASB ASC 260: “Earnings Per Share.”

2. The specific citation that describes the additional information for earnings per share that must be included in the notes to the financial statements is FASB ASC 260–10–50–1: “Earnings Per Share–Overall–Disclosure.”

For each period for which an income statement is presented, an entity discloses all of the following:

- a. A reconciliation of the numerators and the denominators of the basic and diluted per-share computations for income from continuing operations. The reconciliation includes the individual income and share amount effects of all securities that affect earnings per share (EPS). Example 2 (see paragraph 260–10–55–51) illustrates that disclosure. (See paragraph 260–10–45–3.) An entity is encouraged to refer to pertinent information about securities included in the EPS computations that is provided elsewhere in the financial statements as prescribed by Subtopic 505-10.
- b. The effect that has been given to preferred dividends in arriving at income available to common stockholders in computing basic EPS.
- c. Securities (including those issuable pursuant to contingent stock agreements) that could potentially dilute basic EPS in the future that were not included in the computation of diluted EPS because to do so would have been antidilutive for the period(s) presented. Full disclosure of the terms and conditions of these securities is required even if a security is not included in diluted EPS in the current period.

Exercise 4–22 (concluded)

3. The specific eight-digit Codification citation (XXX-XX-XX-X) that requires disclosure of transactions affecting the number of common shares outstanding that occur after the most recent reporting period but before the financial statements are issued is FASB ASC 260–10–50–2: “Earnings Per Share–Overall–Disclosure.”

For the latest period for which an income statement is presented, an entity must provide a description of any transaction that occurs after the end of the most recent period but before issuance of the financial statements that would have changed materially the number of common shares or potential common shares outstanding at the end of the period if the transaction had occurred before the end of the period. Examples of those transactions include the issuance or acquisition of common shares; the issuance of warrants, options, or convertible securities; the resolution of a contingency pursuant to a contingent stock agreement; and the conversion or exercise of potential common shares outstanding at the end of the period into common shares.

Exercise 4–23

The *FASB Accounting Standards Codification*® represents the single source of authoritative U.S. generally accepted accounting principles. The specific citation for each of the following items is:

1. **The calculation of the weighted average number of shares for basic earnings per share purposes:**

FASB ASC 260–10–55–2: “Earnings per Share–Overall–Implementation Guidance and Illustration–Computing a Weighted Average.”

The weighted-average number of shares is an arithmetical mean average of shares outstanding and assumed to be outstanding for EPS computations. The most precise average would be the sum of the shares determined on a daily basis divided by the number of days in the period. Less-precise averaging methods may be used, however, as long as they produce reasonable results. Methods that introduce artificial weighting, such as the Rule of 78 method, are not acceptable for computing a weighted-average number of shares for EPS computations.

Exercise 4–23 (continued)

2. The alternative formats permissible for reporting comprehensive income:

FASB ASC 220–10–45–1: “Comprehensive Income–Overall–Other Presentation Items–Reporting Comprehensive Income.”

1A. An entity reporting comprehensive income in a single continuous financial statement shall present its components in two sections, net income and other comprehensive income. If applicable, an entity shall present the following in that financial statement:

- a. A total amount for net income together with the components that make up net income.
- b. A total amount for other comprehensive income together with the components that make up other comprehensive income. As indicated in paragraph 220–10–15–3, an entity that has no items of other comprehensive income in any period presented is not required to report comprehensive income.
- c. Total comprehensive income.

1B. An entity reporting comprehensive income in two separate but consecutive statements shall present the following:

- a. Components of and the total for net income in the statement of net income
- b. Components of and the total for other comprehensive income as well as a total for comprehensive income in the statement of other comprehensive income, which shall be presented immediately after the statement of net income. A reporting entity may begin the second statement with net income.

1C. An entity shall present, either in a single continuous statement of comprehensive income or in a statement of net income and statement of other comprehensive income, all items that meet the definition of comprehensive income for the period in which those items are recognized. Components included in other comprehensive income shall be classified based on their nature.

Exercise 4–23 (concluded)

3. **The classifications of cash flows required in the statement of cash flows:**

FASB ASC 230–10–45–10: “Statement of Cash Flows–Overall–Other Presentation Matters–Form and Content.”

A statement of cash flows shall classify cash receipts and cash payments as resulting from investing, financing, or operating activities.

Exercise 4–24

List A

- f 1. Intraproduct tax allocation
- g 2. Comprehensive income
- a 3. Unrealized gain on debt securities
- l 4. Operating income
- k 5. A discontinued operation
- j 6. Earnings per share
- d 7. Prior period adjustment
- e 8. Financing activities
- h 9. Operating activities (SCF)
- i 10. Investing activities
- c 11. Direct method
- b 12. Indirect method

List B

- a. An other comprehensive income item.
- b. Starts with net income and works backwards to convert to cash.
- c. Reports the cash effects of each operating activity directly on the statement.
- d. Correction of a material error of a prior period.
- e. Related to the external financing of the company.
- f. Associates tax with income statement item.
- g. Total nonowner change in equity.
- h. Related to the transactions entering into the determination of net income.
- i. Related to the acquisition and disposition of long-term assets.
- j. Required disclosure for publicly traded corporation.
- k. A component of an entity.
- l. Directly related to principal revenue-generating activities.

$$\begin{aligned}
\text{Inventory turnover ratio} &= \frac{\text{Cost of goods sold}}{\text{Average inventory}} \\
&= \frac{\$1,840,000}{[\$690,000 + 630,000] \div 2} \\
&= \underline{2.79 \text{ times}}
\end{aligned}$$

Exercise 4–25

Requirement 1

Requirement 2

By itself, this one ratio provides very little information. In general, the higher the inventory turnover, the lower the investment must be for a given level of sales. It indicates how well inventory levels are managed and the quality of inventory, including the existence of obsolete or overpriced inventory.

However, to evaluate the adequacy of this ratio it should be compared with some norm such as the industry average. That indicates whether inventory management practices are in line with the competition.

It's just one piece in the puzzle, though. Other points of reference should be considered. For instance, a high turnover can be achieved by maintaining too low inventory levels and restocking only when absolutely necessary. This can be costly in terms of stockout costs.

The ratio also can be useful when assessing the current ratio. The more liquid inventory is, the lower the norm should be against which the current ratio should be compared.

$$\begin{aligned}
 \text{Average Accounts Receivable} &= \frac{\$8,805,000}{2} \\
 &= \frac{\$8,805,000}{[\$4,900,000 + \$3,900,000] \div 2} \\
 &= 1.8 \text{ times}
 \end{aligned}$$

Exercise 4–26

Requirement 1

Turnover ratios for Anderson Medical Supply Company for 2024:

Requirement 2

The company turns its inventory over 6 times per year compared to the industry average of 5 times per year. The asset turnover ratio also is slightly better than the industry average (2 times per year versus 1.8 times). These ratios indicate that Anderson is able to generate more sales per dollar invested in inventory and in total assets than the industry averages. However, Anderson takes slightly longer to collect its accounts receivable (27.4 days compared to the industry average of 25 days).

Exercise 4–27

Requirement 1

- | | |
|---------------------------|--|
| a. Profit margin on sales | $\$180 \div \$5,200 = 3.5\%$ |
| b. Return on assets | $\$180 \div [(\$1,900 + 1,700) \div 2] = 10\%$ |
| c. Return on equity | $\$180 \div [(\$550 + 500) \div 2] = 34.3\%$ |

Requirement 2

Retained earnings beginning of period	\$100,000
Add: Net income	<u>180,000</u>
	280,000
Less: Retained earnings end of period	<u>150,000</u>
Dividends paid	<u>\$130,000</u>

Exercise 4–28

Requirement 1

- | | |
|---------------------------|---|
| a. Profit margin on sales | $\$180 \div \$5,200 = 3.46\%$ |
| b. Asset turnover | $\$5,200 \div [(\$1,900 + 1,700) \div 2] = 2.89$ |
| c. Equity multiplier | $[(\$1,900 + 1,700) \div 2] \div [(\$550 + 500) \div 2] = 3.43$ |
| d. Return on equity | $\$180 \div [(\$550 + 500) \div 2] = 34.3\%$ |

Requirement 2

$$\begin{array}{rcccccc} \text{Profit margin} & \times & \text{Asset turnover} & \times & \text{Equity multiplier} & = & \text{ROE} \\ 3.46\% & & 2.89 & & 3.43 & & = 34.3\% \end{array}$$

Exercise 4–29

	<u>Quarter</u>		
	First	Second	Third
Cumulative income before taxes	\$50,000	\$90,000	\$190,000
Estimated annual effective tax rate	<u>22%</u>	<u>25%</u>	<u>24%</u>
	11,000	22,500	45,600
Less: Income tax reported earlier	<u>- 0 -</u>	<u>11,000</u>	<u>22,500</u>
Tax expense to be reported	<u>\$11,000</u>	<u>\$11,500</u>	<u>\$ 23,100</u>

Exercise 4–30

Incentive compensation	$\$300 \text{ million} \div 4 =$	\$75 million
Depreciation expense	$\$60 \text{ million} \div 4 =$	\$15 million
Gain on sale		\$23 million

Exercise 4–31

	<u>Quarters Ending</u>			
	March 31	June 30	Sept. 30	Dec. 31
Advertising	\$200,000	\$200,000	\$200,000	\$200,000
Property tax	87,500	87,500	87,500	87,500
Equipment repairs	65,000	65,000	65,000	65,000
Research and development	- 0 -	96,000	0	0

Note: this solution assumes that advertising, property tax, and equipment repairs are viewed as benefitting all periods following the one in which the expenditure is made, but that the R&D consulting fee only benefits the periods in which it occurred.

Exercise 4–32

		<u>Quarters Ending</u>		
	March 31	June 30	Sept. 30	Dec. 31
Advertising	\$800,000	\$ - 0 -	\$ - 0 -	\$ - 0 -
Property tax	350,000	- 0 -	- 0 -	- 0 -
Equipment repairs	260,000	- 0 -	- 0 -	- 0 -
Research and development	- 0 -	96,000	- 0 -	- 0 -

PROBLEMS

Problem 4–1

REED COMPANY			
Comparative Income Statements			
For the Years Ended December 31			
	2024		2023
Sales revenue	\$4,000,000	[6]	\$3,000,000
Cost of goods sold	<u>2,570,000</u>	[7]	<u>1,680,000</u>
Gross profit	<u>1,430,000</u>		<u>1,320,000</u>
<i>Operating expenses:</i>			
Administrative expense	750,000	[8]	635,000
Selling expense	340,000	[9]	282,000
Loss on building (fire damage)	50,000		--
Loss on inventory write-down	<u>35,000</u>		<u>--</u>
Total operating expenses	<u>1,175,000</u>		<u>917,000</u>
Operating income	<u>255,000</u>		<u>403,000</u>
<i>Other income (expense):</i>			
Interest revenue	150,000		140,000
Interest expense	<u>(200,000)</u>		<u>(200,000)</u>
Total other income, net	<u>(50,000)</u>		<u>(60,000)</u>
Income from continuing operations before income taxes.....	205,000		343,000
Income tax expense	<u>51,250</u>		<u>85,750</u>
Income from continuing operations	<u>153,750</u>		<u>257,250</u>
Discontinued operations:			
Income (loss) from operations of discontinued component (including loss on disposal of \$48,000 in 2024)	(8,000)		120,000
Income tax benefit (expense).....	<u>2,000</u>		<u>(30,000)</u>
Income (loss) on discontinued operations	<u>(6,000)</u>		<u>90,000</u>
Net income	<u>\$ 147,750</u>		<u>\$ 347,250</u>
Earnings per share:			
Income from continuing operations	\$ 0.51		\$ 0.86
Discontinued operations	<u>(0.02)</u>		<u>0.30</u>
Net income	<u>\$ 0.49</u>		<u>\$ 1.16</u>

Problem 4–1 (concluded)

- [1] \$4,400,000 – 400,000 (sales from discontinued operation)
- [2] \$2,860,000 – 290,000 (cost of goods sold from discontinued operations)
- [3] \$800,000 – 50,000 (administrative expenses from discontinued operations)
- [4] \$360,000 – 20,000 (selling expenses from discontinued operations)
- [5] Loss in 2024:
- | | |
|---|--------------------------|
| Income from operations | \$ 40,000 |
| Loss on sale of assets | <u>(48,000)</u> |
| Loss before tax benefit | (8,000) |
| Tax benefit (25% × \$8,000) | <u>2,000</u> |
| Loss on discontinued operations, net of tax benefit | <u><u>\$ (6,000)</u></u> |
- [6] \$3,500,000 – 500,000 (sales from discontinued operation)
- [7] \$2,000,000 – 320,000 (cost of goods sold from discontinued operations)
- [8] \$675,000 – 40,000 (administrative expenses from discontinued operations)
- [9] \$302,000 – 20,000 (selling expenses from discontinued operations)

Problem 4–2

Requirement 1

JACKSON HOLDING COMPANY		
Comparative Income Statements (in part)		
For the Years Ended December 31		
	2024	2023
Income from continuing operations before		
income taxes [1]	\$2,200,000	\$700,000
Income tax expense	<u>550,000</u>	<u>175,000</u>
Income from continuing operations	<u>1,650,000</u>	<u>525,000</u>
Discontinued operations:		
Income from operations of discontinued		
component (including gain on disposal of		
\$600,000 in 2024) [2]	1,000,000	300,000
Income tax expense	<u>(250,000)</u>	<u>(75,000)</u>
Income from discontinued operations	<u>750,000</u>	<u>225,000</u>
Net Income	<u>\$2,400,000</u>	<u>\$750,000</u>

[1] Income from continuing operations before income taxes:

	2024	2023
Unadjusted	\$2,600,000	\$1,000,000
Less: Income from discontinued operations	<u>400,000</u>	<u>300,000</u>
Adjusted	<u>\$2,200,000</u>	<u>\$ 700,000</u>

[2] Income from discontinued operations:

	2024	2023
Income from operations	\$ 400,000	\$300,000
Gain on disposal	<u>600,000</u>	<u>-</u>
Total	<u>\$1,000,000</u>	<u>\$300,000</u>

Problem 4–2 (concluded)

Requirement 2

The 2024 income from discontinued operations would include only the income from operations of \$400,000. Net of \$100,000 income tax expense, the income from discontinued operations would be presented as \$300,000.

Since no impairment loss is indicated ($\$5,000,000 - 4,400,000 = \$600,000$ anticipated gain), none is included. The anticipated gain on disposal is not recognized until it is realized, presumably in the following year.

Requirement 3

The 2024 income from discontinued operations would include the income from operations of \$400,000 as well as an impairment loss of \$500,000 ($\$4,400,000$ book value of assets less $\$3,900,000$ fair value). The net amount to report would be a loss on discontinued operations of \$100,000 ($\$400,000$ income from operations less $\$500,000$ impairment loss). Net of \$25,000 income tax benefit, the loss from discontinued operations would be presented as $\$(75,000)$.

Problem 4–3

OLIVO CORPORATION		
Partial Income Statement		
For the Year Ended December 31, 2024		
Income from continuing operations before income taxes		[1] \$1,300,000
Income tax expense		<u>325,000</u>
Income from continuing operations.....		975,000
Discontinued operations:		
Loss from operations of discontinued component (including loss on disposal of \$300,000)	\$(140,000)	
Income tax benefit	<u>35,000</u>	
Loss on discontinued operations		[2] <u>(105,000)</u>
Net income		<u>\$ 870,000</u>

[1] Income from continuing operations before taxes:

Unadjusted	\$1,200,000
Add: Gain from sale of factory	<u>100,000</u>
Adjusted	<u>\$1,300,000</u>

[2] Loss on discontinued operations:

Income from operations	\$ 160,000
Deduct: Loss on sale of assets	<u>(300,000)</u>
Loss before tax	(140,000)
Tax benefit (25% × \$140,000)	<u>35,000</u>
Loss on discontinued operations	<u>\$(105,000)</u>

Problem 4–4

1. Restructuring is an example of an event that is material and unusual. Restructuring costs should be included in income from continuing operations but reported on a separate line. The item is reported gross, not net of tax as with discontinued operations.
2. The income from the discontinued operation should be presented, net of tax, in the income statement below income from continuing operations. Also, earnings per share for income from continuing operations, for the income from the discontinued operation, and for net income should be disclosed.
3. The correction of the error should be treated as a prior period adjustment to beginning retained earnings, not as an adjustment to current year's cost of goods sold. In addition, the 2023 financial statements should be restated to reflect the correction, and a disclosure note is required that communicates the impact of the error on 2023 income.

Problem 4–5

ALEXIAN SYSTEMS, INC.		
Income Statement		
For the Year Ended December 31, 2024		
(\$ in millions except per share data)		
Sales revenue		\$425
Cost of goods sold	[1]	<u>235</u>
Gross profit		190
<i>Operating expenses:</i>		
Selling and administrative expense	[2]	\$128
Restructuring costs		<u>26</u>
Total operating expenses		<u>154</u>
Operating income		36
<i>Other income:</i>		
Interest revenue		4
Gain on sale of investments		<u>6</u>
Total other income		<u>10</u>
Income from continuing operations before income taxes		46
Income tax expense	[3]	<u>11.5</u>
Income from continuing operations		34.5
Discontinued operations:		
Income from operations of discontinued component (including gain on disposal of \$30)	120	
Income tax expense	<u>(30)</u>	
Income on discontinued operations		<u>90</u>
Net income		<u>\$124.5</u>
Earnings per share:		
Income from continuing operations		\$ 1.73
Discontinued operations		<u>4.50</u>
Net income		<u>\$ 6.23</u>

[1] \$245 – \$10 (prior period adjustment)

[2] \$154 – \$26 (restructuring costs)

[3] 25% × \$46

Note: The difference in net income of \$7.5 million (\$124.5 million compared to \$117 million on the original income statement) is the effect of the inventory error of \$10 million, less the 25% tax effect.

Problem 4–6

REMBRANDT PAINT COMPANY		
Income Statement		
For the Year Ended December 31, 2024		
(\$ in thousands, except per share amounts)		
Sales revenue		\$18,000
Cost of goods sold		<u>10,500</u>
Gross profit		7,500
Operating expenses:		
Selling and administrative expense	\$2,500	
Restructuring costs	<u>800</u>	<u>3,300</u>
Operating income		4,200
Other income (expense):		
Interest revenue	100	
Interest expense	<u>(300)</u>	
Other income, net		<u>(200)</u>
Income from continuing operations before income taxes		4,000
Income tax expense		<u>1,000</u>
Income from continuing operations		3,000
Discontinued operations:		
Income from operations of discontinued component (including gain on disposal of \$2,000)	400	
Income tax expense	<u>(100)</u>	
Income on discontinued operations		<u>300</u>
Net income		<u>\$ 3,300</u>
Earnings per share:		
Income from continuing operations		\$6.00
Income on discontinued operations		<u>0.60</u>
Net income		<u>\$6.60</u>

Problem 4–7

Requirement 1

SCHEMBRI MANUFACTURING CORPORATION Statement of Comprehensive Income For the Year Ended December 31, 2024 (\$ in thousands)		
Sales revenue		\$15,300
Cost of goods sold		<u>6,200</u>
Gross profit		9,100
Operating expenses:		
Selling expense	\$1,300	
General and administrative expense	800	
Restructuring costs	<u>1,200</u>	
Total operating expenses		<u>3,300</u>
Operating income		5,800
Other income (expense):		
Loss on sales of investments	(220)	
Interest expense	(180)	
Interest revenue	<u>40</u>	
Other income, net		<u>(360)</u>
Income from continuing operations before income taxes		5,440
Income tax expense		<u>1,360</u>
Income from continuing operations		4,080
Discontinued operations:		
Income from operations of discontinued component (including gain on disposal of \$1,400)	840	
Income tax expense	<u>(210)</u>	
Income on discontinued operations		<u>630</u>
Net income		4,710
Other comprehensive income, net of tax:		
Gain on debt securities	240	
Foreign currency translation adjustment	<u>(180)</u>	
Total other comprehensive income		<u>60</u>
Comprehensive income		<u>\$ 4,770</u>

Problem 4–7 (concluded)

Earnings per share:*	
Income from continuing operations	\$3.40
Discontinued operations	<u>0.53</u>
Net income	<u>\$3.93</u>

*Weighted-average shares = 1,000,000 + (400,000÷2) = 1,200,000

Note:

The depreciation expense error is a prior period adjustment (to retained earnings) and is not reported in the income statement.

Requirement 2

SCHEMBRI MANUFACTURING CORPORATION		
Statement of Comprehensive Income		
For the Year Ended December 31, 2024		
(\$ in 000s)		
Net income		\$4,710
Other comprehensive income, net of tax:		
Gain on debt securities	\$240	
Foreign currency translation adjustment	<u>(180)</u>	
Total other comprehensive income		<u>60</u>
Comprehensive income		<u>\$4,770</u>

Problem 4–8

DUKE COMPANY		
Statement of Comprehensive Income		
For the Year Ended December 31, 2024		
Sales revenue		\$15,000,000
Cost of goods sold		<u>9,000,000</u>
Gross profit		6,000,000
Operating expenses:		
General and administrative expense	\$1,000,000	
Selling expense	500,000	
Restructuring costs	300,000	
Loss on inventory write-down	<u>400,000</u>	
Total operating expenses		<u>2,200,000</u>
Operating income		3,800,000
Other income (expense):		
Interest expense		<u>(700,000)</u>
Income before income taxes		3,100,000
Income tax expense		<u>775,000</u>
Net income		2,325,000
Other comprehensive income, net of tax:		
Foreign currency translation adjustment.....	(150,000)	
Gain on debt securities	<u>135,000</u>	
Total other comprehensive income (loss)		<u>(15,000)</u>
Comprehensive income		<u>\$ 2,310,000</u>

Note:

The depreciation expense error is a prior period adjustment and is not reported in the income statement.

Problem 4–9

Requirement 1

DIVERSIFIED PORTFOLIO CORPORATION

Statement of Cash Flows

For the Year Ended December 31, 2024

Cash flows from operating activities:

Cash received from customers (1)	\$880,000	
Cash paid for operating expenses (2)	(660,000)	
Cash paid for income taxes (3)	<u>(55,000)</u>	
Net cash flows from operating activities		\$165,000

Cash flows from investing activities:

Sale of investments	<u>50,000</u>	
Net cash flows from investing activities		50,000

Cash flows from financing activities:

Issuance of common stock	100,000	
Dividends paid to shareholders	<u>(80,000)</u>	
Net cash flows from financing activities		<u>20,000</u>
Increase in cash		235,000
Cash and cash equivalents, January 1		<u>70,000</u>
Cash and cash equivalents, December 31		<u><u>\$305,000</u></u>

(1) \$900,000 in service revenue less \$20,000 increase in accounts receivable.

(2) \$700,000 in operating expenses less \$30,000 in depreciation less \$10,000 increase in accounts payable.

(3) \$50,000 in income tax expense plus \$5,000 decrease in income taxes payable.

Problem 4–9 (concluded)

Requirement 2

DIVERSIFIED PORTFOLIO CORPORATION

Statement of Cash Flows

For the Year Ended December 31, 2024

Cash flows from operating activities:

Net income	\$150,000
<i>Adjustments for noncash effects:</i>	
Depreciation expense	30,000
<i>Changes in operating assets and liabilities:</i>	
Increase in accounts receivable	(20,000)
Increase in accrued liabilities	10,000
Decrease in income taxes payable	<u>(5,000)</u>
Net cash flows from operating activities	\$165,000

Problem 4–10

Requirement 1

2023 Cash:

2023 Cash + Net increase in cash = 2024 Cash

2023 Cash + \$86 = \$145

2023 Cash = **\$59**

2024 A/R:

2023 A/R + Cr. Sales – Cash collections = 2024 A/R

\$84 + \$80 – \$71 = **\$93**

2023 Inventory:

2023 A/P + Purchases – Cash paid = 2024 A/P

\$30 + Purchases – \$30 = \$40

Therefore, Purchases = \$40

2023 Inventory + Purchases – 2024 Inventory = Cost of goods sold

2023 Inventory + \$40 – \$60 = \$32

2023 Inventory = **\$52**

2023 Accumulated depreciation:

2024 accumulated depreciation less 2024 depreciation = 2023 accumulated depreciation

\$65 – \$10 = **\$55**

Problem 4–10 (continued)

2023 Total assets:

$$\$59 + \$84 + \$52 + \$50 + \$150 - \$55 = \mathbf{\$340}$$

2024 Total assets:

$$\$145 + \$93 + \$60 + \$150 - \$65 = \mathbf{\$383}$$

2023 Income taxes payable:

2023 Inc. taxes payable + Inc. tax expense – Income taxes paid =

2024 Inc. taxes payable

2023 Inc. taxes payable = 2024 Inc. taxes payable + Taxes paid – Inc. tax expense

$$2023 \text{ Inc. taxes payable} = \$22 + \$9 - \$7 = \mathbf{\$24}$$

2024 Retained earnings:

2023 R/E + Net income – Dividends = 2024 R/E

$$\$47 + \$28 - \$3 = \mathbf{\$72}$$

2023 Total liabilities and shareholders' equity:

$$\$30 + \$9 + \$24 + \$230 + \$47 = \mathbf{\$340}$$

2024 Total liabilities and shareholders' equity:

$$\$40 + \$9 + \$22 + \$240 + \$72 = \mathbf{\$383}$$

Problem 4–10 (concluded)

Requirement 2

GRANDVIEW CORPORATION		
Statement of Cash Flows		
For the Year Ended December 31, 2024		
(\$ in millions)		
<i>Cash flows from operating activities:</i>		
Net income	\$ 28	
<i>Adjustments for noncash effects:</i>		
Depreciation expense	10	
Gain on sale of investments	(15)	
<i>Changes in operating assets and liabilities:</i>		
Increase in accounts receivable ¹	(9)	
Increase in inventory ²	(8)	
Increase in accounts payable ³	10	
Decrease in income taxes payable ⁴	<u>(2)</u>	
Net cash flows from operating activities		\$14

¹ \$93 – 84

² \$60 – 52

³ \$40 – 30

⁴ \$22 – 24

Problem 4–11

SANTANA INDUSTRIES

Statement of Cash Flows

For the Year Ended December 31, 2024

(\$ in thousands)

Cash flows from operating activities:

Net income	\$ 4,800
<i>Adjustments for noncash effects:</i>	
Depreciation expense	1,600
<i>Changes in operating assets and liabilities:</i>	
Increase in accounts receivable	(300)
Increase in inventory	(1,000)
Decrease in prepaid rent	150
Increase in accounts payable	300
Increase in interest payable	100
Increase in deferred revenue	200
Decrease in income taxes payable	<u>(250)</u>
Net cash flows from operating activities	\$5,600

Cash flows from investing activities:

Purchase of equipment	(4,000)
Sale of equipment	<u>500</u>
Net cash flows from investing activities	(3,500)

Cash flows from financing activities:

Issuance of notes payable	5,000
Dividends paid to shareholders	<u>(1,000)</u>
Net cash flows from financing activities	<u>4,000</u>

Net increase in cash	6,100
Cash, January 1	<u>2,200</u>
Cash, December 31	<u><u>\$8,300</u></u>

Problem 4–12

1. Inventory turnover ratio $\$6,300 \div [(\$800 + 600) \div 2] = 9.0$
2. Average days in inventory $365 \div 9.0 = 40.56$ days
3. Receivables turnover ratio $\$9,000 \div [(\$600 + 400) \div 2] = 18.0$
4. Average collection period $365 \div 18.0 = 20.28$ days
5. Asset turnover ratio $\$9,000 \div [(\$4,000 + 3,600) \div 2] = 2.37$
6. Profit margin on sales $\$300 \div \$9,000 = 3.33\%$
7. Return on assets $\$300 \div [(\$4,000 + 3,600) \div 2] = 7.89\%$
or: $3.33\% \times 2.37 \text{ times} = 7.89\%$
8. Return on equity $\$300 \div [(\$1,500 + 1,350) \div 2] = 21.1\%$
9. Equity multiplier $[(\$4,000 + 3,600) \div 2] \div [(\$1,500 + 1,350) \div 2] = 2.67$
10. Return on equity $3.33\% \times 2.37 \times 2.67 = 21.1\%$
(using the Dupont framework)

$$\text{Receivables turnover} = \frac{\text{Net sales}}{\text{Accounts receivable}}$$

$$\text{J\&J} = \frac{\$82,059}{\$14,481} = 5.67 \text{ times}$$

$$\text{Pfizer} = \frac{\$51,750}{\$8,724} = 5.93 \text{ times}$$

$$\text{Average collection period} = \frac{365}{\text{Receivables turnover}}$$

$$\text{J\&J} = \frac{365}{5.67} = 64 \text{ days}$$

$$\text{Pfizer} = \frac{365}{5.93} = 62 \text{ days}$$

Problem 4–13

Requirement 1

On average, Pfizer collects its receivables in 2 days less than J&J.

Problem 4–13 (continued)

$$\text{Inventory turnover} = \frac{\text{Cost of goods sold}}{\text{Inventory}}$$

$$\text{J\&J} = \frac{\$27,556}{\$9,020} = 3.05 \text{ times}$$

$$\text{Pfizer} = \frac{\$10,219}{\$8,283} = 1.23 \text{ times}$$

$$\text{Average days in inventory} = \frac{365}{\text{Inventory turnover}}$$

$$\text{J\&J} = \frac{365}{3.05} = 120 \text{ days}$$

$$\text{Pfizer} = \frac{365}{1.23} = 297 \text{ days}$$

On average, J&J sells its inventory more than twice as fast as Pfizer.

$$\text{Rate of return on assets} = \frac{\text{Net income}}{\text{Total assets}}$$

$$\text{J\&J} = \frac{\$15,119}{\$157,728} = 9.6\%$$

$$\text{Pfizer} = \frac{\$16,298}{\$167,489} = 9.7\%$$

Requirement 2

The *return on assets* indicates a company's overall profitability, ignoring specific sources of financing. In this regard, J&J's profitability is slightly less than that of Pfizer.

Problem 4–13 (continued)

Requirement 3

Profitability can be achieved by a high profit margin, high turnover, or a combination of the two.

$$\begin{aligned} \text{Rate of return on assets} &= \text{Profit margin on sales} \times \text{Asset turnover} \\ &= \frac{\text{Net income}}{\text{Net sales}} \times \frac{\text{Net sales}}{\text{Total assets}} \\ \mathbf{J\&J} &= \frac{\$15,119}{\$82,059} \times \frac{\$82,059}{\$157,728} \\ &= 18.42\% \times 0.520 \text{ times} \\ &= \mathbf{9.6\%} \\ \mathbf{Pfizer} &= \frac{\$16,298}{\$51,750} \times \frac{\$51,750}{\$167,489} \\ &= 31.49\% \times 0.309 \text{ times} \\ &= \mathbf{9.7\%} \end{aligned}$$

No, the combinations of profit margin and asset turnover are not similar. Pfizer's profit margin is higher than that of J&J, while J&J's turnover is higher than that of Pfizeras. These differences combine to produce similar return on assets.

$$\text{Equity multiplier} = \frac{\text{Total Assets}}{\text{Shareholders' equity}}$$

$$\text{J\&J} = \frac{\$157,128}{\$59,471} = 2.64$$

$$\text{Pfizer} = \frac{\$167,289}{\$63,447} = 2.64$$

Problem 4–13 (concluded)

Requirement 4

Pfizer provides a slightly higher return to shareholders.

Requirement 5

The two companies have virtually identical equity multipliers, indicating that they are using leverage to the same extent to earn a return on equity that is higher than their return on assets.

CADUX CANDY COMPANY
Balance Sheet
At December 31, 2024

Assets

Current assets:	
Cash	\$ 10
Accounts receivable (net)	20
Inventory	<u>30</u>
Total current assets	60
Property, plant, and equipment (net)	<u>140</u>
Total assets	<u>\$200</u>

Liabilities and Shareholders' Equity

Current liabilities	\$ 30
Long-term liabilities	70
Shareholders' equity	<u>100</u>
Total liabilities and shareholders' equity	<u>\$200</u>

Problem 4–14

a. $\text{Times interest earned ratio} = (\text{Net income} + \text{Interest} + \text{Taxes}) \div \text{Interest} = 17$

$(\text{Net income} + \$2 + 12) \div \$2 = 17$

$\text{Net income} + \$14 = 17 \times \2

$\text{Net income} = \$20$

b. $\text{Return on assets} = \text{Net income} \div \text{Total assets} = 10\%$

$\text{Total assets} = \$20 \div 10\% = \200

c. $\text{Profit margin on sales} = \text{Net income} \div \text{Net sales} = 5\%$

$\text{Net sales} = \$20 \div 5\% = \400

d. $\text{Gross profit margin} = \text{Gross profit} \div \text{Net sales} = 40\%$

$\text{Gross profit} = \$400 \times 40\% = \160

$\text{Cost of goods sold} = \text{Net sales} - \text{Gross profit} = \$400 - 160 = \$240$

- e. Inventory turnover ratio = Cost of goods sold \div Inventory = 8
 Inventory = \$240 \div 8 = \$30
- f. Receivables turnover ratio = Net sales \div Accounts receivable = 20
 Accounts receivable = \$400 \div 20 = \$20
- g. Current ratio = Current assets \div Current liabilities = 2.0
 Acid-test ratio = Quick assets \div Current liabilities = 1.0
 Current assets \div 2 = Current liabilities
 Quick assets \div 1 = Current liabilities
 Current assets \div 2 = Quick assets \div 1
 Current assets = 2 \times Quick assets
 Cash + Accts. rec. + Inventory = 2 \times (Cash + Accounts receivable)
 Cash + \$20 + 30 = (2 \times Cash) + (2 \times \$20)
 Cash + \$50 = Cash + Cash + \$40
 Cash = \$10
- h. Acid-test ratio = (Cash + Accounts receivable) \div Current liabilities = 1.0
 Current liabilities = (\$10 + 20) \div 1.0 = \$30
- i. Noncurrent assets = Total assets – Current assets
 = \$200 – (\$10 + 20 + 30) = \$140
- j. Return on equity = Net income \div Shareholders' equity = 20%
 Shareholders' equity = \$20 \div 20% = \$100
- k. Debt to equity ratio = Total liabilities \div Shareholders' equity = 1.0
 Total liabilities = \$100 \times 1.0 = \$100
 Long-term liabilities = Total liabilities – Current liabilities = \$100 – 30 = \$70

$$\text{Rate of return on assets} = \frac{\text{Net income}}{\text{Total assets}}$$

$$\text{Metropolitan} = \frac{\$ 593.8}{\$4,021.5} = 14.8\%$$

$$\text{Republic} = \frac{\$ 424.6}{\$4,008.0} = 10.6\%$$

Problem 4–15

Requirement 1

The *return on assets* indicates a company's overall profitability, ignoring specific sources of financing. In this regard, Metropolitan's profitability exceeds that of Republic.

Requirement 2

Profitability can be achieved by a high profit margin, high turnover, or a combination of the two.

$$\begin{aligned} \text{Rate of return on assets} &= \text{Profit margin} \times \text{Asset} \\ &\quad \text{on sales} \quad \quad \quad \text{turnover} \\ &= \frac{\text{Net income}}{\text{Net sales}} \times \frac{\text{Net sales}}{\text{Total assets}} \end{aligned}$$

$$\begin{aligned} \text{Metropolitan} &= \frac{\$ 593.8}{\$5,698.0} \times \frac{\$5,698.0}{\$4,021.5} \\ &= 10.421\% \times 1.417 \text{ times} = 14.8\% \end{aligned}$$

$$\begin{aligned} \text{Republic} &= \frac{\$ 424.6}{\$7,768.2} \times \frac{\$7,768.2}{\$4,008.0} \\ &= 5.466\% \times 1.938 \text{ times} = 10.6\% \end{aligned}$$

Republic's profit margin is much less than that of Metropolitan, but partially makes up for it with a higher turnover.

$$\text{Rate of return on equity} = \frac{\text{Net income}}{\text{Shareholders' equity}}$$

$$\text{Metropolitan} = \frac{\$593.8}{\$144.9 + 2,476.9 - 904.7} = 34.6\%$$

$$\text{Republic} = \frac{\$424.6}{\$335.0 + 1,601.9 - 964.1} = 43.6\%$$

Problem 4–15(continued)

Requirement 3

Republic provides a greater return to common shareholders.

$$\text{Equity multiplier} = \frac{\text{Total assets}}{\text{Shareholders' equity}}$$

$$\text{Metropolitan} = \frac{\$4,021.5}{\$144.9 + 2,476.9 - 904.7} = 2.34$$

$$\text{Republic} = \frac{\$4,008.0}{\$335.0 + 1,601.9 - 964.1} = 4.12$$

Requirement 4

When the return on equity is greater than the return on assets, management is using debt funds to enhance the earnings for stockholders. Both firms do this. Republic's higher leverage has been used to provide a higher return to shareholders than Metropolitan, even though its return on assets is less. Republic increased its return to shareholders 4.12 times ($43.6\% \div 10.6\%$) the return on assets. Metropolitan increased its return to shareholders 2.34 times ($34.6\% \div 14.8\%$) the return on assets.

Current ratio	=	$\frac{\text{Current assets}}{\text{Current liabilities}}$	
Metropolitan	=	$\frac{\$1,203.0}{\$1,280.2}$	= 0.94
Republic	=	$\frac{\$1,478.7}{\$1,787.1}$	= 0.83
Acid-test ratio	=	$\frac{\text{Quick assets}}{\text{Current liabilities}}$	
Metropolitan	=	$\frac{\$1,203.0 - 466.4 - 134.6}{\$1,280.2}$	= 0.47
Republic	=	$\frac{\$1,478.7 - 635.2 - 476.7}{\$1,787.1}$	= 0.21

Problem 4–15 (continued)

Requirement 5

The current ratios of the two firms are comparable and within the range of the rule-of-thumb standard of 1 to 1. The more robust acid-test ratio reveals that Metropolitan is more liquid than Republic.

$$\text{Receivables turnover ratio} = \frac{\text{Net sales}}{\text{Accounts receivable}}$$

$$\text{Metropolitan} = \frac{\$5,698.0}{\$422.7} = 13.5 \text{ times}$$

$$\text{Republic} = \frac{\$7,768.2}{\$325.0} = 23.9 \text{ times}$$

$$\text{Inventory turnover ratio} = \frac{\text{Cost of goods sold}}{\text{Inventory}}$$

$$\text{Metropolitan} = \frac{\$2,909.0}{\$466.4} = 6.2 \text{ times}$$

$$\text{Republic} = \frac{\$4,481.7}{\$635.2} = 7.1 \text{ times}$$

Problem 4–15 (concluded)

Requirement 6

Republic's receivables turnover is more rapid than Metropolitan's, perhaps suggesting that its relative liquidity is not as bad as its acid-test ratio indicated.

$$\text{Times interest earned ratio} = \frac{\text{Net income plus interest plus taxes}}{\text{Interest}}$$

$$\text{Metropolitan} = \frac{\$593.8 + 56.8 + 394.7}{\$56.8} = 18.4 \text{ times}$$

$$\text{Republic} = \frac{\$424.6 + 46.6 + 276.1}{\$46.6} = 16.0 \text{ times}$$

Requirement 7

Both firms provide an adequate margin of safety.

Problem 4–16

Branson Electronics Company Income Statement

Sales revenue	\$180,000
Cost of goods sold	<u>35,000</u>
Gross profit	145,000
Advertising expense ¹	(12,500)
Other operating expenses ²	<u>(57,000)</u>
Income before income taxes	75,500
Income tax expense ³	<u>(18,875)</u>
Net income	<u>\$ 56,625</u>

¹\$50,000 ÷ 4 = \$12,500

²\$48,000 + [59,000 – 50,000]

³\$75,500 × 25%