CHAPTER 9

Reporting and Analyzing Long-Lived Assets

Learning Objectives

1. Describe how the historical cost principle applies to plant assets.
2. Explain the concept of depreciation.
3. Compute periodic depreciation using the straight-line method, and contrast its expense pattern with those of other methods.
4. Describe the procedure for revising periodic depreciation.
5. Explain how to account for the disposal of plant assets.
6. Describe methods for evaluating the use of plant assets.
7. Identify the basic issues related to reporting intangible assets.
8. Indicate how long-lived assets are reported in the financial statements.

*9. Compute periodic depreciation using the declining-balance method and the units-of-activity method.

Summary of Questions by Learning Objectives and Bloom's Taxonomy

Item	LO	BT	Item	LO	BT	Item	LO	BT	Item	LO	BT	Item	LO	BT
Questions														
1.	1	C	7.	3	C	13.	8	K	18.	7	C	23.	6	C
2.	1	K	8.	3	C	14.	7	C	19.	7	K	24.	6	C
3.	1	C	9.	4	C	15.	7	C	20.	7	C	25.	6	C
4.	1	C	10.	4	C	16.	7	C	21.	6	AP	26.	6	C
5.	2	C	11.	5	K	17.	7	C	22.	6	C	27.	8	C.
6.	2	K	12.	5, 8	C									
Brief Exercises														
1.	1	AP	4.	3	AN	7.	5	AP	10.	7	AP	13.	9*	AP
2.	1	AP	5.	4	AP	8.	5	AP	11.	8	AP	14.	9*	AP
3.	3	AP	6.	4	AP	9.	6	AP	12.	8	AP			
Do It! Review Exercises														
1.	1	C	2.	3	AP	3.	4	AP	4.	5	AP	5.	7	C
Exercises														
1.	1	C	5.	3	AP	9.	1, 2, 6, 7	C	13.	7	AN	17.	8	AN
2.	1	C	6.	3, 4	AN	10.	6	AP	14.	7	AN	18.	9*	AP
3.	1	AP	7.	5	AP	11.	6	AP	15.	7	C	19.	9*	AP
4.	2	C	8	5	AP	12.	6	AP	16.	2, 7	C			
Problems: Set A														
1.	1	C	3.	5	AP	5.	7	AP	7.	3, 9*	AP	8.	3, 9*	AP
2.	3, 5, 8	AP	4.	7, 8	AP	6.	6	AN						
Problems: Set B														
1.	1	C	3.	5	AP	5.	7	AP	7.	3, 9*	AP	8.	3, 9*	AP
2.	3, 5, 8	AP	4.	7, 8	AP	6.	6	AN						

*Continuing Cookie Solutions for this chapter are available online.

ASSIGNMENT CLASSIFICATION TABLE

Problem Number	Description	Difficulty Level	Time Allotted (min.)
1A	Determine acquisition costs of land and building.	Simple	20–30
2A	Journalize equipment transactions related to purchase, sale, retirement, and depreciation.	Moderate	40–50
3A	Journalize entries for disposal of plant assets.	Simple	20–30
4A	Prepare entries to record transactions related to acquisition and amortization of intangibles; prepare the intangible assets section and note.	Moderate	30–40
5A	Prepare entries to correct errors in recording and amortizing intangible assets.	Moderate	15–20
6A	Calculate and comment on return on assets, profit margin, and asset turnover ratio.	Moderate	15–20
*7A	Compute depreciation under different methods.	Simple	30–40
*8A	Compute depreciation under different methods.	Moderate	15–20
1B	Determine acquisition costs of land and building.	Simple	20–30
2B	Journalize equipment transactions related to purchase, sale, retirement, and depreciation.	Moderate	40–50
3B	Journalize entries for disposal of plant assets.	Simple	20–30
4B	Prepare entries to record transactions related to acquisition and amortization of intangibles; prepare the intangible assets section and note.	Moderate	30–40
5B	Prepare entries to correct errors in recording and amortizing intangible assets.	Moderate	15–20
6B	Calculate and comment on return on assets, profit margin, and asset turnover ratio.	Moderate	15–20
*7B	Compute depreciation under different methods.	Simple	30–40
*8B	Compute depreciation under different methods.	Moderate	30–40

ANSWERS TO QUESTIONS

1. For plant assets, the historical cost principle states that plant assets are recorded at cost, which consists of all expenditures necessary to acquire the asset and make it ready for its intended use.

2. In a cash transaction, cost is equal to the cash paid.

In a noncash transaction, cost is equal to the cash equivalent price paid, which is the fair value of the asset given up or the fair value of the asset received, whichever is more clearly determinable.

3. When only the land is to be used, all demolition and removal costs of the building less any proceeds from salvaged materials are necessary expenditures to make the land ready for its intended use. Any costs for clearing, draining, filling, and grading are also part of the cost of the land. And any back taxes are also included in the cost of the land.

When both the land and building are to be used, necessary costs of the building include remodeling expenditures and the cost of replacing or repairing the roofs, floors, wiring, and plumbing.

4. The potential benefits of leasing are (1) reduced risk of obsolescence (an obvious concern to Ronald), (2) little or no required down payment, (3) shared tax advantages, (4) assets and liabilities may not reported on the balance sheet.

5. You should explain to the president that depreciation is a process of allocating the cost of a plant asset to expense over its service (useful) life in a rational and systematic manner. Recognition of depreciation is not intended to result in the accumulation of cash for replacement of the asset.

6. (a) Salvage value is the expected cash value of the asset at the end of its useful life.

(b) Salvage value is used in determining depreciable cost in the straight-line method by subtracting it from the plant asset's cost.

7. (a) Useful life is expressed in years under the straight-line method and in units of activity under the units-of-activity method.

(b) The pattern of periodic depreciation expense over an asset's useful life is constant under the straight-line method and variable under the units-of-activity method.

8. The effects of the three depreciation methods on annual depreciation expense are: Straight-line—constant amount; units-of-activity—varying amounts; declining-balance—decreasing amounts.

9. A revision of depreciation is made in current and future years but not retroactively. The rationale is that continual restatement of prior periods would adversely affect the reader's confidence in the financial statements.

10. Ordinary repairs are made to maintain the operating efficiency and expected productive life of the asset. Capital expenditures are additions and improvements made to increase efficiency, productive capacity, or expected useful life of the asset. Ordinary repairs are recognized as expenses when incurred; capital expenditures are generally debited to the plant asset affected.

Questions Chapter 9 (Continued)

11. In a sale of plant assets, the book value of the asset is compared to the proceeds received from the sale. If the proceeds of the sale exceed the book value of the plant asset, a gain on disposal occurs. If the proceeds of the sale are less than the book value of the plant asset sold, a loss on disposal occurs.

12. The plant asset and related accumulated depreciation should continue to be reported on the balance sheet without further depreciation or adjustment until the asset is retired. Reporting the asset and related accumulated depreciation on the balance sheet informs the reader of the financial statements that the asset is still being used by the company. However, once an asset is fully depreciated, even if it is still being used, no additional depreciation should be taken on this asset. In no situation can the depreciation on the plant asset exceed the cost of the plant asset.

13. Tootsie Roll depreciates its buildings over 20 to 35 years and its machinery and equipment over 5 to 20 years.

14. Depreciation and amortization are both concerned with writing off the cost of an asset to expense over the periods benefited. Depreciation refers to allocating the cost of a plant asset to expense and amortization to allocating the cost of an intangible asset to expense.

15. It is true that successful marketing campaigns often benefit multiple accounting periods in the future, enhancing the company's value, and potentially creating goodwill. However, from an accounting perspective David's proposal is unacceptable. First of all, accounting standards only allow the recording of "purchased goodwill" that results from the purchase of another business. Internally created goodwill is not allowed to be recorded. Second, marketing expenditures are to be treated as expenses of the period in which they are incurred. They can not be capitalized. It is unethical to capitalize costs simply to boost reported income by spreading the cost over multiple periods.

16. The intern is not correct. If an intangible asset has a limited life, the cost of the asset should be amortized over that asset's useful life (the period of time when operations are benefited by use of the asset) or its legal life, whichever is shorter. The cost of intangible assets with indefinite lives should not be amortized.

17. The favorable attributes which could result in goodwill include exceptional management, desirable location, good customer relations, skilled employees, high quality products, fair pricing policies, and harmonious relations with labor unions.

18. Goodwill is the value of many favorable attributes that are intertwined in the business enterprise. Goodwill can be identified only with the business as a whole and, unlike other assets, cannot be sold separately. Goodwill can only be sold if the entire business is sold.

19. Goodwill is recorded only when there is an exchange transaction that involves the purchase of an entire business. Goodwill is the excess of cost over the fair value of the net assets (assets less liabilities) acquired. The recognition of goodwill without an exchange transaction would lead to subjective valuations which would reduce the reliability of financial statements.

Goodwill is not amortized because it has an indefinite life. It remains at its original value as an intangible asset unless it is considered to be impaired. If it is impaired, it is written down.

20. Research and development costs present several accounting problems. It is sometimes difficult to assign the costs to specific projects, and there are uncertainties in identifying the extent and timing of future benefits. As a result, research and development costs are usually recorded as an expense when incurred.

21. Campbell Soup Company's return on assets is computed as follows:

$$\frac{\text{Net Income}}{\text{Average Total Assets}} = \frac{\$736}{\$6,265} = 11.7\%$$

22. The return on assets is closely monitored by management. It is the product of the profit margin and the asset turnover. At first glance, if this new product line has a lower profit margin, then it will reduce the company's asset turnover. However, it is likely that it will have a higher turnover than the company's more expensive offerings. As a consequence, it is not possible to know what effect the new product line will have on the company's return on assets without knowing the expected effect on the company's asset turnover.

23. (a) Grocery stores usually have a high asset turnover and a low profit margin.

(b) Car dealerships normally have a low asset turnover and a high profit margin.

24. Since Gooden uses the straight-line depreciation method, its depreciation expense will be lower in the early years of an asset's useful life as compared to using an accelerated method. Perron's depreciation expense in the early years of an asset's useful life will be higher as compared to the straight-line method. Gooden's net income will be higher than Perron's in the first few years of the asset's useful life.

25. Yes, the tax regulations of the IRS allow a company to use a different depreciation method on the tax return than is used in preparing financial statements. Garcia Corporation uses an accelerated depreciation method for tax purposes to minimize its income taxes in the early years of the assets' lives.

26. By selecting a higher estimated useful life, Leslie Corp. is spreading the plant assets' cost over a longer period of time. The depreciation expense reported in each period is lower and net income is higher. Camby's choice of a shorter estimated useful life will result in higher depreciation expense reported in each period and lower net income.

27. In the operating activities section of the statement of cash flows, depreciation expense (from plant assets) and amortization expense (from intangible assets) are added back to net income in the determination of net cash provided by operating activities. In the investing section, cash paid to purchase plant assets or intangible assets is shown as a use of cash. If the company sells any of its used plant assets, or if it sells intangibles, it would report the amount of cash received as a source of cash from investing activities.

SOLUTIONS TO BRIEF EXERCISES

BRIEF EXERCISE 9-1

All of the expenditures should be included in the cost of the land. Therefore, the cost of the land is $73,900 ($60,000 + $5,000 + $2,100 + $3,300 + $3,500).

BRIEF EXERCISE 9-2

The cost of the truck is $26,780 (cash price $24,000 + sales taxes $1,080 + painting and lettering $1,700). The expenditures for insurance and motor vehicle license should not be added to the cost of the truck.

BRIEF EXERCISE 9-3

The depreciable cost is $27,000 ($31,000 – $4,000). With a 4-year useful life, annual depreciation is $6,750 ($27,000 ÷ 4). Under the straight-line method, depreciation is the same each year. Thus, depreciation is $6,750 for both the first and second years.

BRIEF EXERCISE 9-4

It is likely that management requested this accounting treatment to boost reported net income. Land is not depreciated; thus, by reporting land at $130,000 above its actual value the company increased yearly income by $6,500 $\left(\frac{\$130,000}{20 \text{ years}}\right)$ or the reduction in depreciation expense. This practice is not ethical because management is knowingly misstating asset values.

BRIEF EXERCISE 9-5

Book value, 1/1/14 ($36,000 – $13,600)	**$22,400**
Less: Salvage value	**2,000**
Depreciable cost	**$20,400**
Remaining useful life	**2 years**
Revised annual depreciation ($20,400 ÷ 2)	**$10,200**

BRIEF EXERCISE 9-6

(a)	Maintenance and Repairs Expense	38	
	Cash		38
(b)	Equipment	400	
	Cash		400

BRIEF EXERCISE 9-7

(a)	Accumulated Depreciation—Equipment	41,000	
	Equipment		41,000
(b)	Accumulated Depreciation—Equipment	37,200	
	Loss on Disposal of Plant Assets	3,800	
	Equipment		41,000

Cost of delivery equipment	$41,000
Less accumulated depreciation	37,200
Book value at date of disposal	3,800
Proceeds from sale	0
Loss on disposal	$ 3,800

BRIEF EXERCISE 9-8

(a)	7/31/14	Depreciation Expense	4,600	
		Accumulated Depreciation—Equipment		4,600
(b)	7/31/14	Accumulated Depreciation—Equipment	46,600	
		Cash	21,000	
		Loss on Disposal of Plant Assets	4,400	
		Equipment		72,000

Cost of office equipment	$72,000
Less accumulated depreciation	46,600*
Book value at date of disposal	25,400
Proceeds from sale	21,000
Loss on disposal	$ 4,400

*$42,000 + $4,600

BRIEF EXERCISE 9-9

(a) $$\text{Return on assets} = \frac{\$4.55}{(\$28.46 + \$30.22) \div 2} = 15.5\%$$

(b) $$\text{Asset turnover} = \frac{\$22.74}{(\$28.46 + \$30.22) \div 2} = .78 \text{ times}$$

BRIEF EXERCISE 9-10

(a) Amortization Expense ($156,000 ÷ 6)	26,000	
Patent		26,000
(b) Intangible Assets		
Patent (Net of $26,000 of amortization)		$130,000

BRIEF EXERCISE 9-11

NIKE, INC.
Partial Balance Sheet
As of May 31, 2014
(in millions)

Property, plant, and equipment			
Land			$ 221.6
Buildings		$ 974.0	
Machinery and equipment		2,094.3	
Other plant assets		965.8	
Less: Accumulated depreciation		2,298.0	1,736.1
Total property, plant, and equipment			1,957.7
Intangible assets			
Goodwill		193.5	
Patents and trademarks	$515.1		
Less: Accumulated amortization	47.7	467.4	
Total intangible assets			660.9*

*Alternatively, many companies would simply show a single line for net intangibles.

BRIEF EXERCISE 9-12

In the determination of net cash provided by operating activities, add depreciation expense and amortization expense to net income:

Net cash provided by operating activities	**=**	**$157,000**	**+**	**$12,000**	**+**	**$8,000**	**=**	**$177,000**

***BRIEF EXERCISE 9-13**

The declining-balance rate is 50% (1/4 X 2) and this rate is applied to the book value at the beginning of the year. The computations are:

	Book Value	X	Rate	=	Depreciation
Year 1	**$31,000**		**50%**		**$15,500**
Year 2	**($31,000 – $15,500)**		**50%**		**$ 7,750**

***BRIEF EXERCISE 9-14**

The depreciation cost per unit is 18 cents per mile computed as follows:

Depreciable cost ($27,500 – $500) ÷ 150,000 = $.18

Depreciation expense for each year is as follows:

2013	**32,000 miles X $.18 = $5,760**
2014	**33,000 miles X $.18 = $5,940**

SOLUTIONS TO DO IT! REVIEW EXERCISES

DO IT! 9-1

The following four items are expenditures necessary to acquire the truck and get it ready for use:

Negotiated purchase price	**$24,000**
Installation of special shelving	**1,100**
Painting and lettering	**900**
Sales tax	**1,440**
Total paid	**$27,440**

Thus, the cost of the truck is $27,440. The cost of the motor vehicle license is an operating cost and is expensed. The annual insurance policy would be recorded as prepaid insurance and then expensed over the year.

DO IT! 9-2

$$\text{Depreciation expense} = \frac{\text{Cost} - \text{Salvage}}{\text{Useful life}} = \frac{\$15{,}000 - \$1{,}000}{10 \text{ years}} = \$1{,}400$$

The entry to record the first year's depreciation would be:

Depreciation Expense	**1,400**	
Accumulated Depreciation—Equipment		**1,400**

DO IT! 9-3

Original depreciation expense = ($50,000 – $2,000) ÷ 8 years = $6,000

Accumulated depreciation after three years = 3 X $6,000 = $18,000

Book value, $50,000 – $18,000	**$32,000**
Less: Salvage value	**4,000**
Depreciable cost	**$28,000**
Remaining useful life	**7 years**
Revised annual depreciation ($28,000 ÷ 7)	**$ 4,000**

DO IT! 9-4

(a) Sale of machine for cash at a gain:

Accumulated Depreciation—Equipment	28,000	
Cash	25,000	
Equipment		50,000
Gain on Disposal of Plant Assets		3,000

(b) Sale of machine for cash at a loss:

Accumulated Depreciation—Equipment	28,000	
Cash	15,000	
Loss on Disposal of Plant Assets	7,000	
Equipment		50,000

DO IT! 9-5

1. Intangible assets
2. Amortization
3. Franchise
4. Research and development costs
5. Goodwill

SOLUTIONS TO EXERCISES

EXERCISE 9-1

(a) The following points explain the application of the historical cost principle to plant assets.

1. **Under the historical cost principle, the acquisition cost for a plant asset includes all expenditures necessary to acquire the asset and make it ready for its intended use.**
2. **Cost is measured by the cash paid in a cash transaction, or by the cash equivalent price paid when noncash assets are used in payment.**
3. **The cash equivalent price is equal to the fair value of the asset given up or the fair value of the asset received, whichever is more clearly determinable.**

(b)

1. **Land**
2. **Equipment**
3. **Equipment**
4. **Land Improvements**
5. **Equipment**
6. **Equipment**
7. **Prepaid Insurance**
8. **License Expense**

EXERCISE 9-2

1. **Equipment**
2. **Equipment**
3. **Equipment**
4. **Land**
5. **Prepaid Insurance**
6. **Land Improvements**
7. **Land Improvements**
8. **Land**
9. **Building**

EXERCISE 9-3

(a) Cost of land

Cash paid	$80,000
Net cost of removing warehouse ($8,200 – $1,700)	6,500
Attorney's fee	1,900
Real estate broker's fee	5,200
Total	$93,600

(b) The architect's fee ($9,100) should be debited to the building account. The cost of the driveways and parking lot ($14,000) should be debited to Land Improvements.

EXERCISE 9-4

1. **False. Depreciation is a process of *cost allocation*, not *asset valuation.***
2. **True.**
3. **False. The book value of a plant asset *may be quite different* from its market value.**
4. **False. Depreciation applies to three classes of plant assets: land *improvements,* building, and equipment.**
5. **False. Depreciation does not apply to *land* because its usefulness and revenue-producing ability generally remain intact over time.**
6. **True.**
7. **False. Recognizing depreciation on an asset *does not result* in an accumulation of cash for replacement of the asset.**
8. **True.**
9. **False. Depreciation expense is reported on the income statement, and *accumulated depreciation is reported as a deduction from plant assets on the balance sheet*.**
10. **False. *Three* factors affect the computation of depreciation: cost, useful life, and salvage value (*also called residual value*).**

EXERCISE 9-5

$$\text{Straight-line method: } \left(\frac{\$90{,}000 - \$8{,}000}{8} \right) = \$10{,}250 \text{ per year.}$$

2014 depreciation = $10,250 X 3/12 = $2,562.50
2015 depreciation = $10,250.

EXERCISE 9-6

(a)

	Type of Asset	
	Building	Warehouse
Cost	$700,000	$120,000
Less: Accumulated depreciation	130,000	23,000
Book value, 1/1/14	570,000	97,000
Less: Salvage value	35,000	3,600
Depreciable cost (1)	$535,000	$ 93,400
Revised remaining useful life in years (2)	40*	15**
Revised annual depreciation (1) ÷ (2)	$13,375	$6,227

*(48 – 8) **(20 – 5)

(b)

Dec. 31	Depreciation Expense		13,375	
	Accumulated Depreciation—Buildings			13,375

EXERCISE 9-7

(a)

Loss on Disposal of Plant Assets		26,000	
Accumulated Depreciation—Equipment		24,000	
	Equipment		50,000

(b)

Cash		37,000	
Accumulated Depreciation—Equipment		24,000	
	Equipment		50,000
	Gain on Disposal of Plant Assets		11,000

(c)

Accumulated Depreciation—Equipment		24,000	
Cash		20,000	
Loss on Disposal of Plant Assets		6,000	
	Equipment		50,000

EXERCISE 9-8

Jan.	1	Accumulated Depreciation—Equipment	62,000	
		Equipment		62,000
June	30	Depreciation Expense	6,000	
		Accum. Depreciation—Equipment ($36,000 X 1/3 X 6/12)		6,000
		Accumulated Depreciation—Equipment ($36,000 X 2/3 = $24,000; $24,000 + $6,000)	30,000	
		Cash	5,000	
		Loss on Disposal of Plant Assets [$5,000 – ($36,000 – $30,000)]	1,000	
		Equipment		36,000
Dec.	31	Depreciation Expense	4,200	
		Accumulated Depreciation—Equipment [($25,000 – $4,000) X 1/5]		4,200
	31	Accumulated Depreciation—Equipment [($25,000 – $4,000) X 4/5]	16,800	
		Cash	9,000	
		Equipment		25,000
		Gain on Disposal of Plant Assets		800

EXERCISE 9-9

1. Depreciation is the process of allocating the cost of a long-lived asset to expense over the asset's useful life. Because the value of land generally does not decline with time and usage, its usefulness and revenue producing ability does not decline. In addition, the useful life of land is indefinite. Therefore, it would be incorrect for the student to depreciate the land.

2. Goodwill is an intangible asset with an indefinite life. According to generally accepted accounting principles, goodwill is not amortized but reviewed annually for impairment. If a permanent decline in value has occurred the goodwill is written down and an impairment loss is recorded on the income statement. Therefore the amortization entry should be reversed and no decline in value recorded until an impairment in value occurs.

EXERCISE 9-9 (Continued)

3. This is a violation of the historical cost principle. Because current market values are subjective and not reliable, they are not used to increase the recorded value of an asset after acquisition. The appropriate accounting treatment is to leave the building on the books at its zero book value.

EXERCISE 9-10

(a) $$\text{Asset turnover} = \frac{\$35{,}497}{(\$25{,}633 + \$24{,}244) \div 2} = 1.42 \text{ times}$$

(b) $$\text{Return on assets} = \frac{\$98}{(\$25{,}633 + \$24{,}244) \div 2} = .4\%$$

EXERCISE 9-11

(a)

	Without new products	With new products
Return on assets	$\frac{\$500{,}000}{\$5{,}000{,}000} = 10\%$	$\frac{\$960{,}000}{\$12{,}000{,}000} = 8\%$
Profit margin	$\frac{\$500{,}000}{\$10{,}000{,}000} = 5\%$	$\frac{\$960{,}000}{\$16{,}000{,}000} = 6\%$
Asset turnover	$\frac{\$10{,}000{,}000}{\$5{,}000{,}000} = 2.0$	$\frac{\$16{,}000{,}000}{\$12{,}000{,}000} = 1.3$

(b) The return on assets declined from 10% to 8%. This means that the company is not generating as much income from each dollar invested in assets. It is common for companies to try to maximize their return on assets, thus top management might not find this proposal very desirable. The new product line would increase the company's profit margin (the amount of net income generated from each dollar of sales) from 5% to 6%. However, because of the huge investment in new assets that the proposal requires, the asset turnover plummets from 2.0 times down to 1.3 times.

EXERCISE 9-12

(a) ($ in millions)

1. Return on assets $$\frac{\$264.8}{(\$4,312.6 + \$4,254.3) \div 2} = 6.2\%$$

2. Asset turnover $$\frac{\$11,408.5}{(\$4,312.6 + \$4,254.3) \div 2} = 2.7 \text{ times}$$

3. Profit margin $$\frac{\$264.8}{\$11,408.5} = 2.3\%$$

(b) Profit Margin X Asset Turnover = Return on Assets
= 2.3% X 2.7 times = 6.2%

(c) Asset turnover and profit margin vary considerably across industries. Therefore, when you have a diverse group of businesses from several industry types combined into one company, such as in Bakely Company, the ability to compare these ratios to other businesses becomes very difficult. Bakely Company would almost need to calculate ratios for each of the separate industry segments to allow for a meaningful analysis.

EXERCISE 9-13

Dec. 31	**Amortization Expense**	**20,000**	
	Copyright ($120,000 X 1/6)		**20,000**
31	**Amortization Expense**	**11,250**	
	Patent ($54,000 X 1/4 X 10/12)		**11,250**

The goodwill would not require an adjusting entry because it has an indefinite life.

EXERCISE 9-14

(a)	**1/2/14**	**Patent**	**280,000**	
		Cash		**280,000**
	4/1/14	**Goodwill**	**360,000**	
		Cash		**360,000**
		(Part of the entry to record purchase of another company)		
	7/1/14	**Franchise**	**540,000**	
		Cash		**540,000**
	9/1/14	**Research and Development Expense**	**185,000**	
		Cash		**185,000**
(b)		**Amortization Expense**	**86,000**	
		Patent ($280,000 ÷ 5)		**56,000**
		Franchise [($540,000 ÷ 9) X 6/12]		**30,000**

(c) Ending balances, 12/31/14:

Patent = $224,000 ($280,000 – $56,000)
Goodwill = $360,000
Franchise = $510,000 ($540,000 – $30,000)

EXERCISE 9-15

Alliance Atlantis Communications Inc.'s change of accounting policy to amortize broadcast rights will probably increase its reported income. Prior to the change, Alliance Atlantis had amortized broadcast rights over a maximum of two years. Their new policy calls for amortization over the contracted exhibition period. If this is greater than two years, annual amortization expense will decrease and income will increase.

A change of this nature will make comparison of financial results with previous years' difficult. To evaluate the company's performance one will need to make an adjustment for such changes in estimated lives.

EXERCISE 9-16

(a) A company should depreciate its buildings because depreciation is necessary in order to allocate the cost of the buildings to the periods in which they are in use. This allows the cost of the buildings to be matched against the revenues generated each year in accordance with the expense recognition principle.

(b) A building can have a zero book value if it has no salvage value and it is fully depreciated—that is, if it has been used for a period at least as long as its expected life. Because depreciation is used to allocate cost rather than to reflect actual value, it is not at all unlikely that a building could have a low or zero book value, but a substantial fair value.

(c) Examples of intangibles that might be found on a college campus are a franchise of a bookstore chain, the license to operate a radio station, a patent developed by professors, and a permit to operate a bus service.

(d) Typical company or product trade names are:

Clothes—Gap, Gitano, Dockers, Calvin Klein, Chaus, Guess.
Perfume—Passion, Ruffles, Chanel No. 5, Diamonds.
Cars—TransAm, Nova, Prelude, Coupe DeVille, Eclipse.
Shoes—Nike, Florsheim, L.A. Gear, Adidas.
Breakfast cereals—Cheerios, Wheaties, Frosted Mini-Wheats, Rice Krispies.

Trade names and trademarks are reported on a balance sheet if there is a cost attached to them. If the trade name or trademark is purchased, the cost is the purchase price. If it is developed by the enterprise, the cost includes attorney's fees, registration fees, design costs, successful legal defense costs, and other expenditures directly related to securing the trade name or trademark.

EXERCISE 9-17

	10-year life	15-year life
Net Income	$58,000	$102,000*

*$58,000 + ($132,000 – $88,000)

Calculation of net cash provided by operating activities:

	10-year	15-year
Net income	$ 58,000	$102,000
Plus: depreciation expense	132,000	88,000
Net cash provided by operating activities	$190,000	$190,000

The CEO is correct regarding the impact on net income. By increasing the expected useful life depreciation, expense would be lowered and net income would increase. However, this move would be appropriate only if, in fact, a 15-year life was a better estimate of the expected period of use. The CEO is incorrect in stating that cash provided by operating activities would be increased. Depreciation expense does not use up cash. Therefore, net cash provided by operating activities would be the same no matter what expected life was used.

*EXERCISE 9-18

(a) Depreciation cost per unit is $.575 per mile [($100,000 – $8,000) ÷ 160,000].

(b)

	Computation					End of Year	
Years	Units of Activity	X	Depreciation Cost/Unit	=	Annual Depreciation Expense	Accumulated Depreciation	Book Value
2014	40,000		$.575		$23,000	$23,000	$77,000
2015	52,000		.575		29,900	52,900	47,100
2016	41,000		.575		23,575	76,475	23,525
2017	27,000		.575		15,525	92,000	8,000

***EXERCISE 9-19**

(a) Declining-balance method:

2014 depreciation = $90,000 X 25%* X 3/12 = $5,625
Book value January 1, 2015 = $90,000 – $5,625 = $84,375
2015 depreciation = $84,375 X 25% = $21,093.75.

***(1/8) X 2 = 25%**

(b) Units-of-activity method:

$$\left(\frac{\$90,000-\$8,000}{70,000}\right)=\$1.17 \text{ per hour}$$

2014 depreciation = 3,900 hours X $1.17 = $4,563.

SOLUTIONS TO PROBLEMS

PROBLEM 9-1A

Item	Land	Building	Other Accounts	
1	$280,000			
2			$ 6,800	Land Improvements
3	31,000			
4		$ 23,000		
5	3,170			
6			29,000	Land Improvements
7		33,000		
8			6,400	Property Tax Expense
9		640,000		
10	(12,000)			
	$302,170	$696,000		

PROBLEM 9-2A

(a)	April	1	Land	2,200,000	
			Cash		2,200,000
	May	1	Depreciation Expense	20,000	
			Accumulated Depreciation—Equipment ($600,000 X 1/10 X 4/12)		20,000
		1	Accumulated Depreciation—Equipment	440,000	
			Cash	170,000	
			Equipment		600,000
			Gain on Disposal of Plant Assets		10,000

Cost	$600,000
Accum. depr.—Equipment [($600,000 X 1/10) X 7 + $20,000)]	(440,000)
Book value	160,000
Cash proceeds	170,000
Gain on disposal	$ 10,000

	June	1	Cash	1,600,000	
			Land		1,000,000
			Gain on Disposal of Plant Assets		600,000
	July	1	Equipment	1,100,000	
			Cash		1,100,000
	Dec.	31	Depreciation Expense	70,000	
			Accumulated Depreciation—Equipment ($700,000 X 1/10)		70,000
		31	Accumulated Depreciation—Equipment	700,000	
			Equipment		700,000

PROBLEM 9-2A (Continued)

Cost	$700,000
Accum. depr.—Equipment ($700,000 X 1/10 X 10)	(700,000)
Book value	$ 0

(b)

Dec.	31	Depreciation Expense	662,500	
		Accumulated Depreciation—Buildings ($26,500,000 X 1/40)		662,500
	31	Depreciation Expense	3,925,000	
		Accumulated Depreciation—Equipment		3,925,000

$38,700,000* X 1/10	$3,870,000
$ 1,100,000 X 1/10 X 6/12	55,000
	$3,925,000

*($40,000,000 – $600,000 – $700,000)

(c)

NAVARO CORPORATION
Partial Balance Sheet
December 31, 2015

Plant Assets*		
Land		$ 4,200,000
Buildings	$26,500,000	
Less: Accumulated depreciation—buildings	12,587,500	13,912,500
Equipment	39,800,000	
Less: Accumulated depreciation—equipment	7,875,000	31,925,000
Total plant assets		$50,037,500

*See T-accounts which follow.

PROBLEM 9-2A (Continued)

Land

12/31/14	3,000,000	6/1/14	1,000,000
04/01/15	2,200,000		
12/31/15	Bal. 4,200,000		

Buildings

12/31/14	26,500,000		
12/31/15	Bal. 26,500,000		

Equipment

12/31/14	40,000,000	05/01/15	600,000
07/01/15	1,100,000	12/31/15	700,000
12/31/15	Bal. 39,800,000		

Accumulated Depreciation—Buildings

		12/31/14	11,925,000
		12/31/15	662,500
		12/31/15	Bal. 12,587,500

Accumulated Depreciation—Equipment

05/01/15	440,000	12/31/14	5,000,000
12/31/15	700,000	5/1/15	20,000
		12/31/15	70,000
		12/31/15	3,925,000
		12/31/15	Bal. 7,875,000

PROBLEM 9-3A

Jan. 1	Accumulated Depreciation—Equipment	71,000	
	Equipment		71,000
June 30	Depreciation Expense	3,000	
	Accum. Depreciation—Equipment ($30,000 X 1/5 X 6/12)		3,000
June 30	Cash	12,000	
	Accumulated Depreciation—Equipment	21,000	
	Equipment		30,000
	Gain on Disposal of Plant Assets		3,000
	Cost	$30,000	
	Accumulated Depreciation—Equipment [($30,000 X 1/5) X 3 + $3,000]	(21,000)	
	Book Value	9,000	
	Cash Proceeds	12,000	
	Gain on Disposal	$ 3,000	
Dec. 31	Depreciation Expense	3,800	
	Accumulated Depreciation—Equipment [($33,400 – $3,000) X 1/8]		3,800
31	Loss on Disposal of Plant Assets	10,600	
	Accumulated Depreciation—Equipment	22,800	
	Equipment		33,400
	Cost	$33,400	
	Accumulated Depreciation—Equipment [($33,400 – $3,000) X 1/8 X 6]	(22,800)	
	Book Value	10,600	
	Proceeds	0	
	Loss on Disposal	$10,600	

PROBLEM 9-4A

(a)	**Jan. 2**	**Patents**		**46,800**	
		Cash			**46,800**
	Jan.–June	**Research and Development Expense**		**230,000**	
		Cash			**230,000**
	July 1	**Patents**		**20,000**	
		Cash			**20,000**
	Sept. 1	**Advertising Expense**		**40,000**	
		Cash			**40,000**
	Oct. 1	**Copyright**		**200,000**	
		Cash			**200,000**
(b)	**Dec. 31**	**Amortization Expense**		**11,700**	
		Patents			**11,700**
		[($60,000 X 1/10) + ($46,800 X 1/9) + ($20,000 X 1/20 X 6/12)]			
	31	**Amortization Expense**		**4,600**	
		Copyrights			**4,600**
		[($36,000 X 1/10) + ($200,000 X 1/50 X 3/12)]			

(c) Intangible Assets

Patents ($126,800 cost less $17,700 amortization) (1)	**$109,100**
Copyrights ($236,000 cost less $29,800 amortization) (2)	**206,200**
Total intangible assets	**$315,300**

(1) Cost ($60,000 + $46,800 + $20,000); amortization ($6,000 + $11,700).
(2) Cost ($36,000 + $200,000); amortization ($25,200 + $4,600).

(d) The intangible assets of Cedeno Corporation consist of two patents and two copyrights. One patent with a cost of $60,000 is being amortized over 10 years. In addition, legal costs of $46,800 incurred in the successful defense of this patent are being amortized over the remaining useful life, 9 years. The other patent with a cost of $20,000 is being amortized over 20 years. A copyright with a cost of $36,000 is being amortized over 10 years; the other copyright with a cost of $200,000 is being amortized over 50 years.

PROBLEM 9-5A

1.	**Research and Development Expense**	**160,000**	
	Patents		**160,000**
	Patents	**8,000**	
	Amortization Expense [$10,000 – ($40,000 X 1/20)]		**8,000**
2.	**Goodwill**	**2,000**	
	Amortization Expense		**2,000**

PROBLEM 9-6A

(a)

	Danner	London
1. Return on assets	$\frac{\$240,000}{\$3,200,000} = 7.5\%$	$\frac{\$300,000}{\$3,000,000} = 10.0\%$
2. Profit margin	$\frac{\$240,000}{\$1,150,000} = 20.9\%$	$\frac{\$300,000}{\$1,200,000} = 25.0\%$
3. Asset turnover	$\frac{\$1,150,000}{\$3,200,000} = .36$ times	$\frac{\$1,200,000}{\$3,000,000} = .40$ times

(b) Based on the asset turnover, London Corp. is more effective in using assets to generate sales. Its asset turnover is 11% higher than Danner's ratio.

A factor that inhibits comparing the two companies is the differing composition of total assets for each company. Eighty-four percent [($2,400,000 + $300,000) ÷ $3,200,000] of Danner's total assets are plant or intangible assets compared to only sixty percent ($1,800,000 ÷ $3,000,000) for London. Also, London reports no intangible assets.

PROBLEM 9-7A

(a)

Year	Computation	Accumulated Depreciation 12/31
	MACHINE 1	
2012	$84,000* X 1/8 = $10,500	$10,500
2013	$84,000 X 1/8 = $10,500	21,000
2014	$84,000 X 1/8 = $10,500	31,500
2015	$84,000 X 1/8 = $10,500	42,000
	*($96,000 – $12,000)	
	MACHINE 2	
2013	$85,000 X 40%* X 6/12 = $17,000	$17,000
2014	$68,000 X 40% = $27,200	44,200
2015	$40,800 X 40% = $16,320	60,520
	*(1/5) X 2	
	MACHINE 3	
2013	800 X $2.00[a] = $ 1,600	$ 1,600
2014	4,500 X $2.00 = 9,000	10,600
2015	6,000 X $2.00 = 12,000	22,600

[a]($66,000 – $6,000) ÷ 30,000

(b)

Year	Depreciation Expense
	MACHINE 2
2013	$85,000 X 40% X 9/12 = $25,500
2014	$59,500 X 40% = $23,800

*PROBLEM 9-8A

(a) **STRAIGHT-LINE DEPRECIATION**

	Computation				End of Year	
Years	Depreciable Cost	X Depreciation Rate	= Annual Depreciation Expense	Accumulated Depreciation	Book Value
2014	$220,000*	25%**	$ 55,000	$ 55,000	$195,000
2015	220,000	25%	55,000	110,000	140,000
2016	220,000	25%	55,000	165,000	85,000
2017	220,000	25%	55,000	220,000	30,000
			$220,000		

*($250,000 – $30,000)
**1/4 = 25%

DOUBLE-DECLINING-BALANCE DEPRECIATION

	Computation				End of Year	
Years	Book Value Beginning of Year	X Depreciation Rate	= Annual Depreciation Expense	Accumulated Depreciation	Book Value
2014	$250,000	50%*	$125,000	$125,000	$125,000
2015	125,000	50%	62,500	187,500	62,500
2016	62,500	50%	31,250	218,750	31,250
2017	31,250	50%	1,250**	220,000	30,000
			$220,000		

*(1/4) X 2 = 50%
**Adjusted so ending book value will equal salvage value.

(b) **Straight-line depreciation provides the lower amount for 2014 depreciation expense ($55,000) and, therefore, the higher 2014 income. Over the four-year period, both methods result in the same total depreciation expense ($220,000) and, therefore, the same total income.**

(c) **Double-declining-balance depreciation provides the higher amount for 2014 depreciation expense ($125,000) and, therefore, the lower 2014 income. Both methods result in the same total income over the four-year period.**

PROBLEM 9-1B

Item	Land	Building	Other Accounts	
1	$270,000			
2	6,000			
3	31,000			
4	7,700			
5		$ 21,900		
6		44,000		
7		629,500		
8			$36,000	Land Improvements
9			7,300	Property Tax Expense
10	(12,700)			
	$302,000	$695,400		

PROBLEM 9-2B

(a)	April	1	Land	2,600,000	
			Cash		2,600,000
	May	1	Depreciation Expense	25,000	
			Accumulated Depreciation—Equipment		25,000
			($750,000 X 1/10 X 4/12)		
		1	Accumulated Depreciation—Equipment	400,000	
			Cash	367,000	
			Equipment		750,000
			Gain on Disposal of Plant Assets		17,000

Cost	$750,000
Accum. depr.—Equipment	400,000
[($750,000 X 1/10) X 5 + $25,000)]	
Book value	350,000
Cash proceeds	367,000
Gain on disposal	$ 17,000

	June	1	Cash	2,000,000	
			Gain on Disposal of Plant Assets		1,200,000
			Land		800,000
	Sept.	1	Equipment	840,000	
			Cash		840,000
	Dec.	31	Depreciation Expense	47,000	
			Accumulated Depreciation—Equipment ($470,000 X 1/10)		47,000
		31	Accumulated Depreciation—Equipment	470,000	
			Equipment		470,000

PROBLEM 9-2B (Continued)

Cost	$470,000
Accum. depr.—equipment ($470,000 X 1/10 X 10)	470,000
Book value	$ 0

(b)

Dec.	31	Depreciation Expense	720,000	
		Accumulated Depreciation—Buildings ($28,800,000 X 1/40)		720,000
	31	Depreciation Expense	4,706,000	
		Accumulated Depreciation—Equipment		4,706,000

($46,780,000* X 1/10)	$4,678,000
[($840,000 X 1/10) X 4/12]	28,000
	$4,706,000

*($48,000,000 – $750,000 – $470,000)

(c)

TONG CORPORATION
Partial Balance Sheet
December 31, 2014

Plant Assets*		
Land		$ 5,800,000
Buildings	$28,800,000	
Less: Accumulated depreciation—buildings	12,240,000	16,560,000
Equipment	47,620,000	
Less: Accumulated depreciation—equipment	8,908,000	38,712,000
Total plant assets		$61,072,000

*See T-accounts which follow.

PROBLEM 9-2B (Continued)

Land

12/31/13	4,000,000	6/1/14	800,000
4/1/14	2,600,000		
12/31/14	Bal. 5,800,000		

Buildings

12/31/13	28,800,000		
12/31/14	Bal. 28,800,000		

Equipment

12/31/13	48,000,000	5/1/14	750,000
9/1/14	840,000	12/31/14	470,000
12/31/14	Bal. 47,620,000		

Accumulated Depreciation—Buildings

		12/31/13	11,520,000
		12/31/14	720,000
		12/31/14	Bal. 12,240,000

Accumulated Depreciation—Equipment

5/1/14	400,000	12/31/13	5,000,000
12/31/14	470,000	5/1/14	25,000
		12/31/14	47,000
		12/31/14	4,706,000
		12/31/14	Bal. 8,908,000

PROBLEM 9-3B

Jan.	1	Accumulated Depreciation—Equipment		
		($47,000 X 1/10 X 10 years)	47,000	
		Equipment		47,000
Mar.	31	Depreciation Expense	1,550	
		Accumulated Depreciation—Equipment		
		($43,400 X 1/7 X 3/12)		1,550
		Cash	25,000	
		Accumulated Depreciation—Equipment	20,150	
		Equipment		43,400
		Gain on Disposal of Plant Assets		1,750
		Cost	$43,400	
		Accumulated Depreciation—Equipment [($43,400 X 1/7) X 3 + $1,550]	20,150	
		Book Value	23,250	
		Cash Proceeds	25,000	
		Gain on Disposal	$ 1,750	
Dec.	31	Depreciation Expense	4,500	
		Accumulated Depreciation—Equipment		
		[($30,000 – $3,000) X 1/6]		4,500
Dec.	31	Accumulated Depreciation—Equipment		
		[($30,000 – $3,000) X 1/6 X 4]	18,000	
		Loss on Disposal of Plant Assets	12,000	
		Equipment		30,000
		Cost	$30,000	
		Accumulated Depreciation—Equipment		
		[($30,000 – $3,000) X 1/6 X 4]	18,000	
		Book Value	12,000	
		Proceeds	0	
		Loss on Disposal	$12,000	

PROBLEM 9-4B

(a)	**Jan. 2**	**Patents**		**45,000**	
		Cash			**45,000**
	Jan.-June	**Research and Development Expense**		**220,000**	
		Cash			**220,000**
	July 1	**Patents**		**22,000**	
		Cash			**22,000**
	Sept. 1	**Advertising Expense**		**110,000**	
		Cash			**110,000**
	Oct. 1	**Copyrights**		**120,000**	
		Cash			**120,000**
(b)	**Dec. 31**	**Amortization Expense**		**12,550**	
		Patents			**12,550**
		[($70,000 X 1/10) + ($45,000 X 1/9) + ($22,000 X 1/20 X 6/12)]			
	31	**Amortization Expense**		**6,600**	
		Copyrights			**6,600**
		[($48,000 X 1/8) + ($120,000 X 1/50 X 3/12)]			

(c) Intangible Assets

Patents ($137,000 cost less $19,550 amortization) (1)	**$117,450**
Copyrights ($168,000 cost less $24,600 amortization) (2)	**143,400**
Total intangible assets	**$260,850**

(1) Cost ($70,000 + $45,000 + $22,000); amortization ($7,000 + $12,550).
(2) Cost ($48,000 + $120,000); amortization ($18,000 + $6,600).

(d) The intangible assets of Venable Company consist of two patents and two copyrights. One patent with a cost of $70,000 is being amortized over 10 years; an additional $45,000 incurred in successfully defending this patent is being amortized over 9 years. The other patent, obtained at cost of $22,000, is being amortized over 20 years. A copyright with a cost of $48,000 is being amortized over 8 years; the other copyright with a cost of $120,000 is being amortized over 50 years.

PROBLEM 9-5B

1.	**Research and Development Expense**	**225,000**	
	Patents		**225,000**
	Patents	**11,250**	
	Amortization Expense [$13,650 – ($48,000 X 1/20)]		**11,250**
2.	**Goodwill**	**2,000**	
	Amortization Expense		**2,000**

PROBLEM 9-6B

(a)		Quiver	Swaze
1.	Return on assets	$\frac{\$800,000}{\$3,000,000} = 26.7\%$	$\frac{\$920,000}{\$2,700,000} = 34.1\%$
2.	Profit margin	$\frac{\$800,000}{\$2,400,000} = 33.3\%$	$\frac{\$920,000}{\$2,500,000} = 36.8\%$
3.	Asset turnover	$\frac{\$2,400,000}{\$3,000,000} = .80$ times	$\frac{\$2,500,000}{\$2,700,000} = .93$ times

(b) Based on the asset turnover, Swaze Corp. is more effective in using assets to generate sales. Its asset turnover is 16% higher than Quiver's ratio.

A factor that inhibits comparing the two companies is the differing composition of total assets for each company. Sixteen percent ($480,000 ÷ $3,000,000) of Quiver's total assets are intangible assets. Swaze has no recorded intangible assets.

*PROBLEM 9-7B

(a)

Year	Computation	Accumulated Depreciation 12/31
	MACHINE 1	
2012	$63,000* X 1/7 X 6/12 = $4,500	$ 4,500
2013	$63,000 X 1/7 = $9,000	13,500
2014	$63,000 X 1/7 = $9,000	22,500
2015	$63,000 X 1/7 = $9,000	31,500
	*($68,000 – $5,000)	
	MACHINE 2	
2013	$64,000 X 50%* X 9/12 = $24,000	$24,000
2014	$40,000 X 50% = $20,000	44,000
2015	$20,000 X 50% = $10,000	54,000
	*(1/4) X 2	
	MACHINE 3	
2013	1,200 X $2.00[a] = $ 2,400	$ 2,400
2014	6,400 X $2.00 = $12,800	15,200
2015	7,000 X $2.00 = $14,000	29,200

[a]($84,000 – $4,000) ÷ 40,000

(b)

Year	Depreciation Expense
	MACHINE 2
2013	$64,000 X 50% X 2/12 = $5,333
2014	$58,667 X 50% = $29,333

*PROBLEM 9-8B

(a) STRAIGHT-LINE DEPRECIATION

	Computation				End of Year	
Years	Depreciable Cost	X Depreciation Rate	= Annual Depreciation Expense	Accumulated Depreciation	Book Value
2014	$360,000[a]	20%[b]	$ 72,000	$ 72,000	$308,000
2015	360,000	20%	72,000	144,000	236,000
2016	360,000	20%	72,000	216,000	164,000
2017	360,000	20%	72,000	288,000	92,000
2018	360,000	20%	72,000	360,000	20,000
			$360,000		

[a]$380,000 – $20,000
[b]1/5 = 20%

DOUBLE-DECLINING-BALANCE DEPRECIATION

	Computation				End of Year	
Years	Book Value Beginning of Year	X Depreciation Rate	= Annual Depreciation Expense	Accumulated Depreciation	Book Value
2014	$380,000	40%[c]	$152,000	$152,000	$228,000
2015	228,000	40%	91,200	243,200	136,800
2016	136,800	40%	54,720	297,920	82,080
2017	82,080	40%	32,832	330,752	49,248
2018	49,248	40%	29,248[d]	360,000	20,000
			$360,000		

[c](1/5) X 2 = 40%
[d]Adjusted so ending book value will equal salvage value.

(b) Straight-line depreciation provides the lower amount for 2014 depreciation expense and, therefore, the higher 2014 income. Over the five-year period, both methods result in the same total depreciation expense ($360,000) and, therefore, the same total income.

(c) Double-declining-balance depreciation provides the higher amount for 2014 depreciation expense and, therefore, the lower 2014 income. Both methods result in the same total income over the five-year period.

CHAPTER 9 COMPREHENSIVE PROBLEM SOLUTION

(a)	Dec.	2	Equipment	16,800	
			Cash		16,800
		2	Depreciation Expense	825	
			Accumulated Depreciation—Equipment		825
			Cash	3,500	
			Accumulated Depreciation—Equipment	2,625	
			Equipment		5,000
			Gain on Disposal of Plant Assets [$3,500 – ($5,000 – $2,250)]		1,125
		15	Accounts Receivable	5,000	
			Sales Revenue		5,000
			Cost of Goods Sold	3,500	
			Inventory		3,500
		23	Salaries and Wages Expense	6,600	
			Cash		6,600
		31	Bad Debt Expense ($4,000 – $500)	3,500	
			Allowance for Doubtful Accounts		3,500
			Interest Receivable ($10,000 X .08 X 9/12)	600	
			Interest Revenue		600
			Insurance Expense ($3,600 X 4/6)	2,400	
			Prepaid Insurance		2,400
			Depreciation Expense	4,000	
			Accumulated Depreciation—Building [($150,000 – $30,000) ÷ 30]		4,000
			Depreciation Expense	9,900	
			Accumulated Depreciation—Equipment [($55,000 – $5,500) ÷ 5]		9,900

Depreciation Expense	**250**	
Accumulated Depreciation—Equipment		
[($16,800 – $1,800) ÷ 5] X 1/12		**250**
Amortization Expense ($9,000 ÷ 9)	**1,000**	
Patent		**1,000**
Salaries and Wages Expense	**2,200**	
Salaries and Wages Payable		**2,200**
Interest Expense	**4,600**	
Interest Payable		
[($11,000 + $35,000) X .10]		**4,600**
Income Tax Expense	**15,000**	
Income Taxes Payable		**15,000**

COMPREHENSIVE PROBLEM (Continued)

(b)

KENSETH CORPORATION
Adjusted Trial Balance
December 31, 2014

	Debits	Credits
Cash	$ 2,100	
Accounts Receivable	41,800	
Notes Receivable	10,000	
Interest Receivable	600	
Inventory	32,700	
Prepaid Insurance	1,200	
Land	20,000	
Buildings	150,000	
Equipment	71,800	
Patent	8,000	
Allowance for Doubtful Accounts		$ 4,000
Accumulated Depreciation—Buildings		54,000
Accumulated Depreciation—Equipment		32,350
Accounts Payable		27,300
Salaries and Wages Payable		2,200
Notes Payable (due April 30, 2015)		11,000
Interest Payable		4,600
Notes Payable (due in 2020)		35,000
Income Taxes Payable		15,000
Common Stock		50,000
Retained Earnings		63,600
Dividends	12,000	
Sales Revenue		905,000
Interest Revenue		600
Gain on Disposal of Plant Assets		1,125
Bad Debt Expense	3,500	
Cost of Goods Sold	633,500	
Depreciation Expense	14,975	
Insurance Expense	2,400	
Interest Expense	4,600	
Other Operating Expenses	61,800	
Amortization Expense	1,000	
Salaries and Wages Expense	118,800	
Income Tax Expense	15,000	
Total	$1,205,775	$1,205,775

COMPREHENSIVE PROBLEM (Continued)

(c)

KENSETH CORPORATION
Income Statement
For the Year Ended December 31, 2014

Sales revenue		$905,000
Cost of goods sold		633,500
Gross profit		271,500
Operating expenses		
Salaries and wages expense	$118,800	
Other operating expenses	61,800	
Depreciation expense	14,975	
Bad debt expense	3,500	
Insurance expense	2,400	
Amortization expense	1,000	
Total operating expenses		202,475
Income from operations		69,025
Other revenues and gains		
Gain on disposal of plant assets	1,125	
Interest revenue	600	1,725
Other expenses and losses		
Interest expense		(4,600)
Income before income taxes		66,150
Income tax expense		15,000
Net income		$ 51,150

KENSETH CORPORATION
Retained Earnings Statement
For the Year Ending December 31, 2014

Retained earnings, 1/1/14	$ 63,600
Add: Net income	51,150
	114,750
Less: Dividends	12,000
Retained earnings, 12/31/14	$102,750

COMPREHENSIVE PROBLEM (Continued)

(d)

KENSETH CORPORATION
Balance Sheet
December 31, 2014

Current assets			
Cash			$ 2,100
Accounts receivable		$ 41,800	
Less: Allowance for doubtful accounts		4,000	37,800
Notes receivable			10,000
Interest receivable			600
Inventory			32,700
Prepaid insurance			1,200
Total current assets			84,400
Property, plant, and equipment			
Land		20,000	
Buildings	$150,000		
Less: Accum. depr.—buildings	54,000	96,000	
Equipment	71,800		
Less: Accum. depr.—equipment	32,350	39,450	
Total property, plant, and equipment			155,450
Intangible assets			
Patent			8,000
Total assets			$247,850
Current liabilities			
Notes payable (due April 30, 2015)		$ 11,000	
Accounts payable		27,300	
Income taxes payable		15,000	
Interest payable		4,600	
Salaries and wages payable		2,200	
Total current liabilities			60,100
Long-term liabilities			
Notes payable (due in 2020)			35,000
Total liabilities			95,100
Stockholders' equity			
Common stock		50,000	
Retained earnings		102,750	152,750
Total liabilities and stockholders' equity			$247,850

BYP 9-1 FINANCIAL REPORTING PROBLEM

(a) At December 31, 2011, total cost of property, plant and equipment was $455,097,000; book value was $212,162,000.

(b) Depreciation is calculated by use of the straight-line method over the estimated useful lives of the assets.

(c) Depreciation was: 2011, $19,229,000; 2010, $18,279,000; 2009, $17,862,000.

(d) Tootsie Roll's purchases of property, plant, and equipment were: 2011, $16,351,000; 2010, $12,813,000.

(e) Goodwill and intangible assets with indefinite lives are not amortized, but rather tested for impairment at least annually. The company tested goodwill and trademarks during the fourth quarter of each year. It recorded an impairment in 2009 but none in 2010 or 2011.

BYP 9-2 COMPARATIVE ANALYSIS PROBLEM

(a)

	Tootsie Roll	Hershey Company
1. Return on assets	$\frac{\$43,938}{(\$857,856+\$857,959)/2} = 5.1\%$	$\frac{\$628,962}{(\$4,412,199+\$4,272,732)/2} = 14.5\%$
2. Profit margin	$\frac{\$43,938}{\$532,505} = 8.3\%$	$\frac{\$628,962}{\$6,080,788} = 10.3\%$
3. Asset turnover	$\frac{\$532,505}{(\$857,856+\$857,959)\div 2} = .62 \text{ times}$	$\frac{\$6,080,788}{(\$4,412,199+4,272,732)\div 2} = 1.40 \text{ times}$

The asset turnover measures how efficiently a company uses its assets to generate sales. It shows the dollars of sales generated by each dollar invested in assets. Hershey Company's asset turnover (1.40) was 126% higher than Tootsie Roll's (.62) in 2011. Therefore, it can be concluded that Hershey Company was significantly more efficient than Tootsie Roll during 2011 in utilizing assets to generate sales. This efficiency was partially offset by a profit margin (10.3%) that was lower than Tootsie Roll's (8.3%). Tootsie Roll is more effective in generating profit from its sales but its lower asset turnover resulted in only a 5.1% return on assets compared to Hershey's 14.5% return. What this shows is that a company can generate a reasonable return on assets with a lower profit margin, if it has a high turnover.

BYP 9-3 RESEARCH CASE

(a) All of the companies have market values (that is, the total market price of all of their shares) that is less than the shareholders' equity on their balance sheet. This means that the reported value of the company's assets exceeds the fair value of those assets.

(b) In most instances, when a company's market value is less than its book value, the company needs to consider writing down its goodwill. It is hard to argue that a company has goodwill (which represents the amount by which fair value of a purchased asset exceeds its recorded value) when its market value is below its book value.

(c) In order for goodwill to be present on a company's balance sheet, that company must have purchased another business. If the amount paid for that other business exceeds the fair value of the identifiable assets acquired, then the difference is debited to goodwill.

(d) The write-down of goodwill as part of an impairment adjustment (or the write-down of any asset) does not affect cash.

BYP 9-4 INTERPRETING FINANCIAL STATEMENTS

(a) **Online retailers, such as Amazon, have large investments in sophisticated warehouses, but they have no money tied up in massive stores, such as those of Best Buy. This is would mean that, all else equal, an online retailer would have lower total assets, which would increase the asset turnover as well as the return on assets. We would also expect that the online retailer's operating costs would be lower since it doesn't incur salary and other costs of running a store. This should increase its net income, which would increase the profit margin ratio.**

(b)

	2011	2006
Profit Margin	$\frac{\$1,277}{\$50,272} = 2.5\%$	$\frac{\$1,140}{\$30,848} = 3.7\%$
Asset Turnover	$\frac{\$50,272}{(\$17,849 + \$18,302)/2} = 2.78 \text{ times}$	$\frac{\$30,848}{(\$11,864 + \$10,294)/2} = 2.78 \text{ times}$
Return on Assets	$\frac{\$1,277}{(\$17,849 + \$18,302)/2} = 7.1\%$	$\frac{\$1,140}{(\$11,864 + \$10,294)/2} = 10.3$

(c)

	Profit Margin	×	Asset Turnover	=	Return on Assets
2006	3.7%	×	2.78	=	10.3
2011	2.5%	×	2.78	=	7.1*

***Difference due to rounding.**

(d) **It is interesting to note that the asset turnover stayed the same, at 2.78 times between 2006 and 2011. This means that the company generates the same amount of sales per dollar invested in assets. However, the profit margin declined from 3.7% down to 2.5%. This means that the company previously generated 3.7 cents on each dollar of sales, but it now only generates only 2.5 cents. From the presentation in part (c) we can clearly see that the decline in the return on assets is due to the decline in the profit margin. This is consistent with the suggestion that the company is having a hard time competing with online retailers. The online retailers can offer lower prices because they have lower operating costs. Best Buy lowers its prices to meet the competitive, which then cuts into its profit margin.**

BYP 9-5 REAL-WORLD FOCUS

Answers will vary depending on the company chosen by student.

BYP 9-6 DECISION MAKING ACROSS THE ORGANIZATION

(a)

(in thousands)	Current results	Proposed results without cannibalization	Proposed results with cannibalization
Return on assets	$\frac{\$12,000}{\$100,000} = .12$	$\frac{\$13,500}{\$100,000} = .135$	$\frac{\$12,000}{\$100,000} = .12$
Profit margin	$\frac{\$12,000}{\$45,000} = .27$	$\frac{\$13,500}{\$60,000} = .225$	$\frac{\$12,000}{\$50,000} = .24$
Asset turnover	$\frac{\$45,000}{\$100,000} = .45$	$\frac{\$60,000}{\$100,000} = .60$	$\frac{\$50,000}{\$100,000} = .50$

(b) If there is no cannibalization, return on assets increases from 12% to 13.5%. This occurs even though the profit margin decreases from 27% to 22.5% because the asset turnover increases significantly, from .45 times to .60 times. However, if there is cannibalization, the return on assets remains unchanged at 12% because the increase in the asset turnover is offset by the decrease in the profit margin.

(c) Yes, there are other alternatives. Here are some examples.

1. **Increase spending on marketing in an effort to increase sales of high end product, without offering the new, low-end product line. If this was successful it would increase the asset utilization, thus increasing the asset turnover and return on assets.**

2. **Consider marketing the new line under a different name, so as to minimize the cannibalization. This might substantially increase the marketing costs, and therefore reduce the profit margin. But the benefit of reducing cannibalization might make up for the increased marketing costs.**

3. **If neither of 1. or 2. seems feasible, they should consider closing a plant. This would increase the asset turnover and return on assets.**

BYP 9-7 COMMUNICATION ACTIVITY

Answers will depend on the position selected by the student. Some points that should be considered include:

1. Some relatively small companies may spend less on R&D because they must expense these costs. However, the vast majority of companies realize that for continued growth and stability, R&D expenditures are a high priority regardless of how they are recorded for accounting purposes.

Requiring companies to expense R&D costs instead of allowing them to be capitalized could leave U.S. companies at a competitive disadvantage as compared to non-U.S. companies. U.S. companies may be more reluctant to invest millions of dollars on research and development since the costs would negatively impact their financial statements in the short-run.

2. The tangible future benefits of R&D costs may not be realized for several years, if ever. Conversely, the purchase of a long-lived asset (i.e., equipment, building) will provide benefits immediately as well as in future years. Accountants often employ an approach called conservatism which dictates that when reasonable doubt exists, a company should choose the option that has the least favorable affect on income. Expensing R&D costs is an example of applying conservatism.

BYP 9-8 ETHICS CASE

(a) The stakeholders in this situation are:

Tyler Weber, president of Fresh Air Anti-Pollution Company.
Robin Cain, controller.
The stockholders of Fresh Air Anti-Pollution Company.
Potential investors in Fresh Air Anti-Pollution Company.

(b) The intentional misstatement of the life of an asset or the amount of the salvage value is unethical for whatever the reason. There is nothing unethical per se about changing the estimates used for the life of an asset or of an asset's salvage value if the change is an attempt to better match cost and revenues and is a better allocation of the asset's depreciable cost over the asset's useful life. In this case, it appears from the controller's reaction that the revision in the life is intended only to improve earnings which would be unethical.

The fact that the competition uses a longer life for its equipment is not necessarily relevant. The competition's maintenance and repair policies and activities may be different. The competition may use its equipment fewer hours a year (e.g., one shift rather than two shifts daily) than Fresh Air Anti-Pollution Company.

(c) Income before income taxes in the year of change is increased $155,000 ($387,500 – $232,500) by implementing the president's proposed changes.

	Old Estimates
Asset cost	$3,500,000
Estimated salvage	400,000
Depreciable cost	3,100,000
Depreciation per year (1/8)	$ 387,500

	Revised Estimates
Asset cost	$3,500,000
Estimated salvage	400,000
Depreciable cost	3,100,000
Depreciation taken to date ($387,500 X 2)	775,000
	2,325,000
Remaining life in years	10 years
Depreciation per year ($2,325,000 ÷ 10)	$ 232,500

BYP 9-9 ALL ABOUT YOU

(a) 1 c 2 b 3 a 4 d 5 c

(b) For the most part, the value of a brand is not reported on a company's balance sheet. Most companies are required to expense all costs related to the maintenance of a brand name. Also any research and development that went into the development of the related product is generally expensed. The only way significant costs related to the value of the brand are reported on the balance sheet is when a company purchases another company that has a significant tradename (brand). In that case, given an objective transaction, companies are able to assign value to the brand and report it on the balance sheet. A conservative approach is used in this area because the value of the brand can be extremely difficult to determine. It should be noted that international rules permit companies to report brand values on their balance sheets.

BYP 9-10 FASB CODIFICATION ACTIVITY

(a) Capitalize is a term used to indicate that the cost would be recorded as the cost of an asset. That procedure is often referred to as deferring a cost, and the resulting asset is sometimes described as a deferred cost.

(b) Intangible assets are assets that lack physical substance. (The term intangible asset is used to refer to intangible assets other than goodwill.)

(c) Codification reference 360-10-35-2 addresses the concept of depreciation accounting and the various factors to consider in selecting the related periods and methods to be used in such accounting. Generally accepted accounting principles (GAAP) require that the cost of a productive facility be spread over the expected useful life of the facility in such a way as to allocate it as equitably as possible to the periods during which services are obtained from the use of the facility (Codification reference 360-10-35-4).

BYP 9-11 CONSIDERING PEOPLE, PLANET AND PROFIT

(a) Airbus developed a wing attachment called a Sharklet that is designed to reduce fuel consumption. It is quite similar to a device that is sold by Aviation Partners walled a Winglet. Aviation Partners has a patent on the device. Airbus filed a lawsuit against Aviation Partners claiming that the patent should be declared invalid.

(b) Aviation Partners says that its Winglets will reduce fuel consumption by 5 to 7 percent. It says that the total amount of jet fuel that its device has saved is approximately 3 billion gallons.

(c) Airbus and Aviation Partners were involved in discussions for about 5 years before they reached a memorandum of understanding to form a joint venture to design a device for use on Airbus aircraft. However, Airbus then developed the Sharklet, which Aviation Partners says violates its patent.

(d) If Aviation Partners loses the lawsuit it would have expense the cost of the lawsuit. It would also have to review the recorded value of its patent to determine whether the loss of the lawsuit has caused the value of the patent to be impaired.

IFRS CONCEPTS AND APPLICATION

IFRS9-1

Component depreciation is a method of allocating the cost of a plant asset into separate parts based on the estimated useful lives of each component. IFRS requires an entity to use component depreciation whenever significant parts of a plant asset have significantly different useful lives.

IFRS9-2

Revaluation is an accounting procedure that adjusts plant assets to fair value at the reporting date. Revaluation must be applied annually to assets that are experiencing rapid price changes.

IFRS9-3

Both types of development expenditures relate to the creation of new products but one is expensed and the other is capitalized. Development costs incurred before a new product achieves technological feasibility are recorded as development expenses and appear as part of operating expenses on the income statement.

Costs incurred after technological feasibility are recorded as development costs and appear as an intangible asset on the statement of financial position.

IFRS9-4

Warehouse component: ($280,000 – $40,000)/20 = $12,000
HVAC component: $40,000/10 = $4,000
Total component depreciation in first year $16,000

IFRS9-5

(a)	**Accumulated Depreciation—Plant Assets**	**60,000**	
	Revaluation Surplus		**40,000**
	Plant Assets		**20,000**
	(To record revaluation of plant assets)		
(b)	**Accumulated Depreciation—Plant Assets**	**60,000**	
	Revaluation Surplus	**20,000**	
	Plant Assets		**80,000**
	(To record revaluation of plant assets)		

IFRS9-6

Development Expense	**400,000**	
Research Expense	**300,000**	
Development Costs	**200,000**	
Cash		**900,000**
(To record research and development costs)		

IFRS9-7 INTERNATIONAL FINANCIAL STATEMENT ANALYSIS

(a) Zetar uses straight line and reducing-balance depreciation methods. The depreciation rates range from 10–33%.

(b) Goodwill is reviewed annually for impairment.

(c)	**Accumulated Depreciation**	**50**	
	Cash	**45**	
	Loss on Disposal	**9**	
	Property, Plant, and Equipment		**104**

