

Chapter 7

Long-Term Assets

REVIEW QUESTIONS

Question 7-1 (LO 7-1)

WorldCom recorded assets on the balance sheet that should have been recorded as expenses on the income statement. When WorldCom uses the telecommunication lines of another company, it pays a fee. This fee is part of normal operating costs, and should be recorded as an expense of the current period to properly match the expense with the revenues it helped to generate. Instead, WorldCom recorded these operating expenses as long-term assets on the balance sheet.

Question 7-2 (LO 7-1)

The two major categories for long-term assets are (1) property, plant, and equipment and (2) intangible assets. Property, plant, and equipment include land, land improvements, buildings, equipment, and natural resources. Intangible assets include patents, trademarks, copyrights, franchises, and goodwill. The two categories differ by their physical substance. Property, plant, and equipment consist of items that you can actually see, while intangible assets lack physical substance. The existence of intangible assets is often based on a legal contract.

Question 7-3 (LO 7-1)

We initially record a long-term asset at its cost plus all expenditures necessary to get the asset ready for use. Thus, the initial cost of a long-term asset might be more than just its purchase price; it also will include any additional amounts the firm paid to bring the asset to its desired condition and location for use.

Question 7-4 (LO 7-1)

Recording an expense incorrectly as an asset will overstate net income on the income statement. If University Hero initially records an expense incorrectly as an asset, expenses are understated or too small. Since expenses are subtracted from revenues in arriving at net income, understating expenses will overstate net income reported on the income statement. Similarly, recording an expense as an asset will overstate assets on the balance sheet. Retained earnings on the balance sheet will also be overstated due to the overstatement of net income.

Question 7-5 (LO 7-1)

Costs Little King might incur to make the land ready for its intended use include the purchase price plus closing costs such as fees for the attorney, real estate agent commissions, title, title search, and recording. Little King also includes the cost of removing the old building as an additional cost in making the land ready for its intended use. If any cash is received from selling salvaged materials from the old building, the cost of land is reduced by that amount. If the property is subject to back taxes or other obligations, these amounts are included as well. In fact, any additional expenditure such as clearing, filling, and draining the land, to prepare the land for its intended use, becomes part of the land's capitalized cost.

Answers to Review Questions (continued)

Question 7-6 (LO 7-1)

We don't depreciate land because its service life never ends. Land improvements are additional amounts spent to improve the land such as a parking lot, paving, temporary landscaping, lighting systems, fences, sprinkler systems, and similar additions. We record land improvements separately from land because, unlike land, these assets are subject to depreciation.

Question 7-7 (LO 7-1)

Costs we might incur to get equipment ready for use include sales tax, shipping, delivery, insurance, assembly, installation, testing, and even legal fees incurred to establish title.

Question 7-8 (LO 7-1)

We report natural resources on the balance sheet as part of property, plant, and equipment. Examples of natural resources include oil, natural gas, timber, and salt.

Question 7-9 (LO 7-2)

We value *purchased* intangible assets at their original cost plus all other costs, such as legal and filing fees, necessary to get the asset ready for use. Reporting intangible assets *developed internally* is quite different. Rather than recording these as an intangible asset on the balance sheet, we expense most of the costs for internally developed intangible assets to the income statement as we incur them.

Question 7-10 (LO 7-2)

A patent is an exclusive right to manufacture a product or to use a process. A copyright is an exclusive right of protection given to the creator of a published work, such as a song, film, painting, photograph, book, or computer software. A trademark, is a word, slogan, or symbol that distinctively identifies a company, product, or service.

Question 7-11 (LO 7-2)

Goodwill is an intangible asset on the balance sheet that is recorded *only* when one company acquires another company. The acquiring company records goodwill equal to the purchase price less the fair value of the identifiable net assets acquired. The fair value of the identifiable net assets is the fair value of all identifiable assets acquired, minus the fair value of all liabilities assumed. We cannot sell goodwill separately. While most long-term assets can be separated from the company and individually sold, goodwill cannot.

Question 7-12 (LO 7-3)

We capitalize a particular cost as an asset if it increases future benefits, whereas we expense a cost if it benefits only the current period.

Answers to Review Questions (continued)

Question 7-13 (LO 7-3)

We expense repairs and maintenance expenditures which maintain a given level of benefits, in the period incurred. We capitalize as assets more extensive repairs that increase the future benefits, such as a new transmission or an engine overhaul of a delivery truck. An addition occurs when we add a new major component to an existing asset. An improvement is the cost of replacing a major component of an asset. We should capitalize the cost of additions and improvements because they increase the future benefits from the expenditure.

Question 7-14 (LO 7-3)

If a firm successfully defends an intangible right, it should capitalize the litigation costs and amortize them over the remaining service life of the related intangible. If the defense of an intangible right is unsuccessful, then the firm should expense the litigation costs as incurred because they provide no future benefit.

Question 7-15 (LO 7-4)

The dictionary definition of depreciation is a decrease in value of an asset, whereas the accounting definition of depreciation is an allocation of an asset's cost to an expense over time.

Question 7-16 (LO 7-4)

We must estimate the service life (also called useful life) of the asset as well as its residual value (also called salvage value) at the end of that life.

Question 7-17 (LO 7-4)

The service life tells how long the company expects to obtain benefits from the asset before disposing of it. Under the straight-line method we determine service life in units of time. Under the activity-based method we determine service life in units of activity. For example, the estimated service life of a delivery truck might be either five years or 100,000 miles.

Question 7-18 (LO 7-4)

Residual value, also referred to as salvage value, is the amount the company expects to receive from selling the asset at the end of its service life. The depreciable cost is the asset's cost minus its estimated residual value. In calculating depreciation under the straight-line method, we simply divide the depreciable cost by the number of years in the asset's life.

Question 7-19 (LO 7-4)

Straight-line creates an equal amount of depreciation each year. Double-declining-balance creates more depreciation in earlier years and less depreciation in later years. Activity-based depreciation varies depending on the use of the asset each year.

Answers to Review Questions (continued)

Question 7-20 (LO 7-4)

Little King Sandwiches uses straight-line depreciation that creates an equal amount of depreciation each year. In contrast, University Hero uses double-declining balance depreciation that takes more depreciation in earlier years and less depreciation in later years. By taking more depreciation in earlier years, University Hero will report lower income on the income statement and lower assets and retained earnings on the balance sheet. The use of different depreciation methods makes it more difficult to compare financial results across companies.

Question 7-21 (LO 7-4)

University Hero depreciates over a shorter service life (20 years) and therefore will take more depreciation expense per year. By taking more depreciation expense per year, University Hero will report lower income on the income statement and lower assets and retained earnings on the balance sheet. Even when both companies use the same depreciation method, comparisons can be hindered if the companies estimate different service lives.

Question 7-22 (LO 7-4)

Most companies use the straight-line method for financial reporting and the Internal Revenue Service's prescribed accelerated method (called MACRS) for income tax purposes. Companies choose straight-line for financial reporting for several reasons. Many probably believe they realize benefits from their plant assets approximately evenly over these assets' service lives. Another contributing factor is that straight-line is the easiest method to understand and apply. One more important motivation is the positive effect on reported income. Straight-line produces a higher net income than accelerated methods in the earlier years of an asset's life. Most companies choose MACRS for tax reporting to reduce taxable income. MACRS combines declining-balance methods in earlier years with straight-line in later years to allow for a more advantageous tax depreciation deduction.

Question 7-23 (LO 7-5)

No. Just as we don't depreciate land because it has an unlimited life, we don't amortize intangible assets with unlimited service lives such as goodwill and most trademarks. For most other intangible assets that have a finite service life, we allocate the asset's cost less any estimated residual value over the period in which we expect the intangible asset to contribute to the company's revenue-generating activities. This period is called service life and is either equal to or, in many cases, less than an asset's legal life. For example, the legal life of a patent is 20 years. However, the estimated service life of a patent often is less than 20 years if the benefits are not expected to continue for the entire legal life. Apple's iPod Nano is amortized over fewer than 20 years, since new technology will cause the Nano to become outdated in a much shorter period.

Question 7-24 (LO 7-6)

Book value is the cost of the asset minus accumulated depreciation. We record a gain if we sell the asset for more than book value. Similarly, we record a loss if we sell the asset for *less* than book value.

Answers to Review Questions (continued)

Question 7-25 (LO 7-7)

Return on assets equals net income divided by average total assets. Return on assets indicates the amount of net income generated for each dollar invested in assets. Profit margin equals net income divided by net sales. This ratio provides an indication of the earnings per dollar of sales. Asset turnover equals net sales divided by average total assets. In contrast to profit margin, this ratio measures the sales per dollar of assets invested.

Question 7-26 (LO 7-7)

Examples of high profit margin include companies that pursue a higher profit margin through *product differentiation* and *premium pricing*. Apple and Saks Fifth Avenue are possible examples. Examples of high asset turnover include companies that pursue a high sales volume by charging *lower prices*. Dell and Ross Dress for Less are possible examples.

Question 7-27 (LO 7-8)

An asset impairment occurs when the future cash flows (future benefits) that we estimate a long-term asset will generate, fall below its book value (cost minus accumulated depreciation). Impairment is a two-step process. Step 1: Test for Impairment – the long-term asset is impaired if future cash flows are less than book value. Step 2: If Impaired, Record Impairment Loss – the impairment loss is the amount by which book value exceeds fair value. Recording an impairment loss will negatively affect the income statement through lower net income and negatively affect the balance sheet through lower long-term assets and retained earnings.

Question 7-28 (LO 7-8)

A big bath is when a company records all losses in one year to make a bad current year even worse. By recording additional expenses in the current year, management is able to report higher earnings in future years. Future earnings are higher because the write-down of assets in this year results in lower depreciation and amortization charges in the future.

BRIEF EXERCISES

Brief Exercise 7-1 (LO 7-1)

Purchase price of land (and warehouse to be removed)	\$490,000
Broker's commission	29,000
Title insurance	1,900
Closing costs	6,000
Cost of removing the warehouse	29,000
Total cost of the land	<u>\$555,900</u>

Brief Exercise 7-2 (LO 7-1)

Purchase price	\$30,000
Freight	2,000
Installation	4,000
Testing	1,500
Total cost of the bread machine	<u>\$37,500</u>

The \$600 property tax is a recurring cost that benefits the company in the current year. The Whole Grain Bakery will report the \$600 as property tax expense over the first year.

Brief Exercise 7-3 (LO 7-1)

	<u>Estimated Fair Value</u>	<u>Allocation Percentage</u>	<u>Amount of Basket Purchase</u>	<u>Recorded Amount</u>
Building	\$400,000	$\$400,000/\$480,000 = 83.33\% (= 5/6)$	$\times \$450,000$	\$375,000
Equipment	<u>80,000</u>	$\$80,000/\$480,000 = 16.67\% (=1/6)$	$\times \$450,000$	<u>75,000</u>
Total	<u>\$480,000</u>			<u>\$450,000</u>

Brief Exercise 7-4 (LO 7-2)

(in millions)

Purchase price		\$19.0
Less:		
Fair value of assets acquired	\$14.3	
Less: fair value of liabilities assumed	<u>(2.5)</u>	
Fair value of identifiable net assets		<u>11.8</u>
Amount paid for goodwill		<u>\$ 7.2</u>

Brief Exercise 7-5 (LO 7-2)

Salaries for R&D	\$540,000
Depreciation on R&D facilities and equipment	145,000
Utilities incurred for the R&D facilities	7,000
Payment to another company for part of the development work	<u>13,000</u>
Total research and development expense	<u>\$705,000</u>

The \$27,000 in patent filing and related legal costs are recorded to the patent intangible asset account.

Brief Exercise 7-6 (LO 7-3)

- (1) Expense in the period incurred.
- (2) Capitalize and depreciate over the service life of the asset.
- (3) Capitalize and depreciate over the service life of the asset.
- (4) Capitalize and depreciate over the service life of the asset.

Brief Exercise 7-7 (LO 7-3)

\$240,000

Betty Foods can capitalize legal fees only for the successful defense.

Brief Exercise 7-8 (LO 7-4)

The company controller's approach to measuring depreciation is based on the dictionary definition of depreciation – decrease in value of an asset. Depreciation in accounting is different. Depreciation in accounting is allocating the cost of an asset to an expense over its service life. For example, the controller could allocate the \$40,000 cost of the vehicle over a 5-year service life, recording \$8,000 in depreciation expense each year.

Brief Exercise 7-9 (LO 7-4)

Year				
2021	$\frac{(\$45,000 - \$6,000)}{10}$	=	$3,900 \times 4/12$	= <u>\$1,300</u>
2022	$\frac{(\$45,000 - \$6,000)}{10}$	=	<u>\$3,900</u>	

Brief Exercise 7-10 (LO 7-4)

1. Straight-line

$$\text{Depreciation expense} = \frac{\$30,000 - \$3,000}{4 \text{ years}} = \underline{\$6,750}$$

2. Double-declining-balance

$$\text{Depreciation expense} = \$30,000 \times 2/4 = \underline{\$15,000}$$

3. Activity-based

$$\text{Depreciation expense} = \frac{\$30,000 - \$3,000}{20,000 \text{ hours}} = \$1.35 \text{ per hour} \times 3,100 \text{ hours} = \underline{\$4,185}$$

Brief Exercise 7-11 (LO 7-4)

Straight-line

$$\text{Depreciation expense} = \frac{\$50,000 - \$10,000}{8 \text{ years}} = \underline{\$5,000}$$

$$\text{Depreciation after 6 years} = \$5,000 \times 6 = \$30,000$$

$$\text{Book value after 6 years} = \$50,000 - \$30,000 = \$20,000$$

$$\text{Depreciation Expense in the seventh year} = \frac{\$20,000 - \$10,000}{4 \text{ years}} = \underline{\$2,500}$$

Brief Exercise 7-12 (LO 7-5)

$$\text{Amortization expense} = \frac{\$4,000,000}{5 \text{ years}} = \$800,000$$

The \$5 million trademark and the \$6 million goodwill are not amortized, because they have indefinite service lives.

Brief Exercise 7-13 (LO 7-6)

Sale amount		\$16,000
Less:		
Cost of the ice cream equipment	\$90,000	
Less: Accumulated depreciation	<u>(71,000)</u>	
Book value		<u>19,000</u>
Loss (on sale of the equipment)		<u><u>(\$ 3,000)</u></u>

Brief Exercise 7-14 (LO 7-6)

Sale amount		\$25,000
Less:		
Cost of the ice cream equipment	\$72,000	
Less: Accumulated depreciation	<u>(51,000)</u>	
Book value		<u>21,000</u>
Gain (on sale of the equipment)		<u><u>\$ 4,000</u></u>

Brief Exercise 7-15 (LO 7-6)

	<u>Debit</u>	<u>Credit</u>
Loss	8,000	
Accumulated Depreciation	12,000	
Building		20,000

Accumulated depreciation = $(\$20,000/5 \text{ years}) \times 3 \text{ years} = \$12,000$

Brief Exercise 7-16 (LO 7-6)

	<u>Debit</u>	<u>Credit</u>
Equipment (Delivery Truck)	31,000	
Accumulated Depreciation	33,000	
Cash		9,000
Equipment		45,000
Gain		10,000

Brief Exercise 7-17 (LO 7-6)

	<u>Debit</u>	<u>Credit</u>
Equipment	22,000	
Accumulated Depreciation	4,400	
Loss	1,600	
Cash	9,000	
Equipment (Delivery Truck)		37,000

Brief Exercise 7-18 (LO 7-7)

$$\frac{\text{Net income}}{(\$840,000 + \$930,000) \div 2} = 20\%$$

$$\frac{\text{Net income}}{\$885,000} = 20\%$$

$$\text{Net income} = 20\% \times \$885,000 = \$177,000$$

Brief Exercise 7-19 (LO 7-8)

Step 1: Test for Impairment

The long-term asset is *not* impaired since future cash flows (\$38 million) are greater than book value (\$33.5 million).

Step 2: If Impaired, Record Loss

Since the asset does not meet the first test for impairment, no impairment loss is recorded.

Brief Exercise 7-20 (LO 7-8)

Step 1: Test for Impairment

The long-term asset is impaired since future cash flows (\$32 million) are less than book value (\$33.5 million).

Step 2: If Impaired, Record Loss

The impairment loss is \$3.5 million, calculated as the amount by which book value (\$33.5 million) exceeds fair value (\$30 million).

EXERCISES

Exercise 7-1 (LO 7-1)

Purchase price of land (and building to be removed)	\$1,000,000
Title insurance	3,000
Back property taxes	9,000
Cost of removing the building	50,000
Less: Salvaged materials	(5,000)
Level the land	11,000
Total cost of the land	<u>\$1,068,000</u>

For property taxes, \$5,000 relates only to the current period and we expense it in the current period. All of the other costs, including the \$9,000 in back property taxes, are necessary to acquire the land so we capitalize them. Note that the salvaged materials that were sold for \$5,000 reduce the overall cost of the land.

Exercise 7-2 (LO 7-1)

Purchase price	\$75,000
Sales tax	6,000
Shipping	1,000
Installation	2,000
Total cost	<u>\$84,000</u>

With the exception of the \$700 annual insurance, each of the expenditures described is necessary to bring the machine to its condition and location for use. Orion will initially report the \$700 insurance amount as prepaid insurance and expense it over the first year of coverage.

	Debit	Credit
Equipment	84,000	
Prepaid Insurance	700	
Cash		3,700
Accounts Payable		81,000
<i>(Purchase of equipment)</i>		

Exercise 7-3 (LO 7-1)

	<u>Estimated Fair Value</u>	<u>Allocation Percentage</u>	<u>Amount of Basket Purchase</u>	<u>Recorded Amount</u>
Land	\$175,000	$\$175,000/\$700,000 = 25\%$	X \$600,000	\$150,000
Building	455,000	$\$455,000/\$700,000 = 65\%$	X \$600,000	390,000
Equipment	<u>70,000</u>	$\$70,000/\$700,000 = 10\%$	X \$600,000	<u>60,000</u>
Total	<u>\$700,000</u>			<u>\$600,000</u>

Exercise 7-4 (LO 7-1, 7-4)

1. Land is not depreciated. However, depreciation on the building is tax-deductible. If management allocates less of the purchase price to land and more of the purchase price to building, the company will enjoy a larger overall depreciation deduction for tax purposes.
2. If the true allocation should have been 20% to land and 80% to building, then the allocation of 10% to land and 90% to building, for the express purpose of reducing taxes, is not ethical. Who is harmed? The government is clearly harmed as it will collect lower taxes. The general public is also affected as less tax revenue means fewer public resources are available. If the incorrect allocation is later detected, then investors and management will be harmed as well. Not only will the company be required to pay the additional tax, it could also be subject to additional penalties and suffer negative reputational effects from the unethical behavior.

Exercise 7-5 (LO 7-2)

	Debit	Credit
Legal Fees Expense	9,000	
Patents	42,500	
Advertising Expense	80,000	
Cash		131,500
(Record cash expenditures)		

Exercise 7-6 (LO 7-2)

(amounts in millions)

Purchase price		\$30
Less:		
Fair value of assets acquired		\$45
Less: fair value of liabilities assumed		<u>(20)</u>
Fair value of identifiable net assets		<u>25</u>
Goodwill		<u>\$ 5</u>

Exercise 7-7 (LO 7-2)

1. Patent costs capitalized	
Legal fees for patent application	\$ 79,000
Legal fees for successful defense	<u>39,000</u>
Total costs capitalized	<u>\$118,000</u>
2. Expense items on income statement	
Basic research to develop the technology	\$3,900,000
Engineering design work	1,180,000
Development of prototype device	590,000
Testing and modification of the prototype	<u>390,000</u>
Total R&D expense	<u>\$6,060,000</u>

3. Purchased intangible assets are usually capitalized. Internally developed intangible assets are usually expensed.

Exercise 7-8 (LO 7-2, 7-4)

List A	List B
<u>f</u> 1. Depreciation	a. Exclusive right to display a word, a symbol, or an emblem.
<u>e</u> 2. Goodwill	b. Exclusive right to benefit from a creative work.
<u>g</u> 3. Amortization	c. Assets that represent contractual rights.
<u>d</u> 4. Natural resources	d. Oil and gas deposits, timber tracts, and mineral deposits.
<u>c</u> 5. Intangible assets	e. Purchase price less fair value of net identifiable assets.
<u>b</u> 6. Copyright	f. The allocation of cost for plant and equipment.
<u>a</u> 7. Trademark	g. The allocation of cost for intangible assets.

Exercise 7-9 (LO 7-3)

1. Equipment	\$250,000
2. Building	\$750,000
3. Repairs and Maintenance Expense	\$24,000
4. Prepaid Insurance	\$8,800
5. Equipment	\$9,900
6. Land Improvements	\$65,000

Exercise 7-10 (LO 7-4)

1. Straight-line

$$\text{Depreciation expense} = \frac{\$29,500 - \$3,500}{10 \text{ years}} = \underline{\underline{\$2,600}}$$

2. Double-declining-balance

$$\text{Depreciation expense} = \$29,500 \times 2/10 = \underline{\underline{\$5,900}}$$

3. Activity-based

$$\text{Depreciation expense} = \frac{\$29,500 - \$3,500}{13,000 \text{ hours}} = \$2.00 \text{ per hour} \times 1,700 \text{ hours} = \underline{\underline{\$3,400}}$$

Exercise 7-11 (LO 7-4)

Requirement 1

Straight-line

$$\text{Depreciation expense} = \frac{\$36,000 - \$6,400}{4 \text{ years}} = \$7,400 \text{ per year}$$

Requirement 2

Double-declining-balance

Year	Calculation		=	End-of-Year Amounts		
	Beginning Book Value	X Depreciation Rate*		Depreciation Expense	Accumulated Depreciation	Book Value**
1	36,000	0.50		18,000	18,000	18,000
2	18,000	0.50		9,000	27,000	9,000

* 2 / 4 years = 0.50 per year

** \$36,000 cost minus accumulated depreciation

Requirement 3

Activity-based

Year	Calculation			=	End-of-Year Amounts		
	Miles Used	X	Depreciation Rate*		Depreciation Expense	Accumulated Depreciation	Book Value**
1	40,000	x	\$0.20		8,000	8,000	28,000
2	46,000	x	\$0.20		9,200	17,200	18,800

* $(\$36,000 - \$6,400) / 148,000 \text{ miles} = \$0.20/\text{mile}$

** \$36,000 cost minus accumulated depreciation

Exercise 7-12 (LO 7-4)

Year					
2021	$(\$18,000 - \$2,000)$	=	$\$3,200 \times 9/12$	=	<u><u>\$2,400</u></u>
	5 years				
2022	$(\$18,000 - \$2,000)$	=	<u>\$3,200</u>		
	5 years				

Exercise 7-13 (LO 7-4)

<u>Year</u>				
2021	$\frac{(\$21,600 - \$1,200)}{6 \text{ years}}$	=	$\$3,400 \times 3/12$	= <u>\$850</u>
2022	$\frac{(\$21,600 - \$1,200)}{6 \text{ years}}$	=	<u>\$3,400</u>	

Exercise 7-14 (LO 7-4)

Cost of the equipment	\$19,000
Less: Accumulated depreciation (Years 1 and 2)	<u>(8,000)*</u>
Book value, end of year 2	11,000
Less: New residual value	<u>(1,200)</u>
New depreciable cost	9,800
÷ Remaining service life	<u>÷ 4</u>
Annual depreciation in years 3 to 6	<u>\$2,450</u>

* $(\$19,000 - \$3,000) / 4 \text{ years} = \$4,000 \text{ per year} \times 2 \text{ years} = \$8,000$

Exercise 7-15 (LO 7-4)

$$\frac{(\$21,500 - \$2,500)}{100,000} = \$0.19/\text{mile}$$

<u>Year</u>				
2021	5,000 miles	x	\$0.19	<u>\$ 950</u>
2022	19,000 miles	x	\$0.19	<u>\$3,610</u>

Exercise 7-16 (LO 7-5)

Requirement 1

	<u>Debit</u>	<u>Credit</u>
<u>January 1, 2021</u>		
Patents	237,000	
Cash		237,000
<u>December 31, 2021</u>		
Amortization Expense	39,500	
Patents		39,500
<u>December 31, 2022</u>		
Amortization Expense	39,500	
Patents		39,500
<u>January, 2023</u>		
Patents	57,000	
Cash		57,000
<u>December 31, 2023</u>		
Amortization Expense*	53,750	
Patents		53,750

* $(\$237,000 - \$39,500 - \$39,500 + \$57,000)/4$ remaining years = \$53,750

Requirement 2

Balance in the Patents account	
Patents	
237,000	39,500
57,000	39,500
	53,750
161,250	

Exercise 7-17 (LO 7-6)

Requirement 1

	<u>Debit</u>	<u>Credit</u>
Cash	21,600	
Accumulated Depreciation	23,400*	
Equipment		42,000
Gain		3,000
<i>(Sell equipment for a gain)</i>		
* $(\$42,000 - \$3,000) / 5 = \$7,800$ per year x 3 years = \$23,400		

Requirement 2

	<u>Debit</u>	<u>Credit</u>
Cash	13,600	
Accumulated Depreciation	23,400	
Loss	5,000	
Equipment		42,000
<i>(Sell equipment for a loss)</i>		

Exercise 7-18 (LO 7-6)

Requirement 1

Fair value of the old land	\$132,000
Cash paid to complete the purchase	<u>19,000</u>
Fair value of the new land	<u><u>\$151,000</u></u>

Requirement 2

	<u>Debit</u>	<u>Credit</u>
Land, New	151,000	
Land, Old		70,000
Cash		19,000
Gain		62,000

Exercise 7-19 (LO 7-7)

Net Income	÷	Average Total Assets	=	Return on Assets
\$28,000	÷	(\$389,000 + \$496,000)/2	=	6.3%
Net Income	÷	Sales	=	Profit Margin
\$28,000	÷	\$735,000	=	3.8%
Sales	÷	Average Total Assets	=	Asset Turnover
\$735,000	÷	(\$389,000 + \$496,000)/2	=	1.7 times

Exercise 7-20 (LO 7-8)

Requirement 1

Step 1: Test for Impairment

The long-term asset is impaired since future cash flows (\$7.1 million) are less than book value (\$8.6 million).

Step 2: If Impaired, Record Loss

The impairment loss is \$2.7 million calculated as the amount by which book value (\$8.6 million) exceeds fair value (\$5.9 million).

Requirement 2

Step 1: Test for Impairment

The long-term asset is not impaired since future cash flows (\$10 million) exceed book value (\$8.6 million).

Step 2: If Impaired, Record Loss

Since the asset does not meet the first test for impairment, no impairment loss is recorded.

Exercise 7-21

Requirement 1

<u>January 1</u>	Debit	Credit
Equipment	19,500	
Cash		19,500
<i>(Purchase equipment for cash)</i>		
<u>January 4</u>	Debit	Credit
Accounts Payable	9,500	
Cash		9,500
<i>(Pay cash on account)</i>		
<u>January 8</u>	Debit	Credit
Inventory	82,900	
Accounts Payable		82,900
<i>(Purchase inventory on account)</i>		
<u>January 15</u>	Debit	Credit
Cash	22,000	
Accounts Receivable		22,000
<i>(Receive cash on account)</i>		
<u>January 19</u>	Debit	Credit
Salaries Expense	29,800	
Cash		29,800
<i>(Pay for salaries)</i>		
<u>January 28</u>	Debit	Credit
Utilities Expense	16,500	
Cash		16,500
<i>(Pay for utilities)</i>		
<u>January 30</u>	Debit	Credit
Accounts Receivable	220,000	
Sales Revenue		220,000
<i>(Sell inventory on account)</i>		
Cost of Goods Sold	115,000	
Inventory		115,000
<i>(Record cost of inventory sold)</i>		

Exercise 7-21 (continued)

Requirement 2

<u>(a) January 31</u>	<u>Debit</u>	<u>Credit</u>
Depreciation Expense	300	
Accumulated Depreciation		300
<i>(Record depreciation)</i>		
<i>(\$300 = [\$19,500 - \$1,500] / 60 months)</i>		
<u>(b) January 31</u>	<u>Debit</u>	<u>Credit</u>
Bad Debt Expense	5,900	
Allowance for Uncollectible Accounts		5,900
<i>(Adjust uncollectible accounts)</i>		
<i>(\$5,900 = (\$3,000 × 50%) + (\$220,000^a × 3%) - \$2,200</i>		
<i>^a \$220,000 = \$25,000 - \$22,000 + \$220,000 - \$3,000</i>		
<u>(c) January 31</u>	<u>Debit</u>	<u>Credit</u>
Interest Receivable	50	
Interest Revenue		50
<i>(Adjust interest revenue)</i>		
<i>(\$50 = \$12,000 × 5% × 1/12)</i>		
<u>(d) January 31</u>	<u>Debit</u>	<u>Credit</u>
Salaries Expense	32,600	
Salaries Payable		32,600
<i>(Adjust salaries payable)</i>		
<u>(e) January 31</u>	<u>Debit</u>	<u>Credit</u>
Income Tax Expense	9,000	
Income Tax Payable		9,000
<i>(Adjust income taxes)</i>		

Exercise 7-21 (continued)

Requirement 3

TNT Fireworks
Adjusted Trial Balance
January 31, 2021

Accounts	Debit	Credit
Cash	\$ 5,400	
Accounts Receivable	223,000	
Allowance for Uncollectible Accounts		\$ 8,100
Interest Receivable	50	
Inventory	4,200	
Notes Receivable	12,000	
Land	155,000	
Equipment	19,500	
Accumulated Depreciation		300
Accounts Payable		88,200
Salaries Payable		32,600
Income Tax Payable		9,000
Common Stock		220,000
Retained Earnings		50,000
Sales Revenue		220,000
Interest Revenue		50
Cost of Goods Sold	115,000	
Salaries Expense	62,400	
Utilities Expense	16,500	
Bad Debt Expense	5,900	
Depreciation Expense	300	
Income Tax Expense	9,000	
Totals	<u>\$628,250</u>	<u>\$628,250</u>

Exercise 7-21 (continued)
Requirement 3 (continued)

Accounts	Ending Balance	Beginning balance in bold , entries during January in blue , and adjusting entries in red .
Cash	5,400	= 58,700 –19,500–9,500+22,000–29,800–16,500
Accounts Receivable	223,000	= 25,000 –22,000+220,000
Allowance for Uncollectible Accounts	8,100	= 2,200 +5,900
Interest Receivable	50	= 50
Inventory	4,200	= 36,300 +82,900–115,000
Notes Receivable	12,000	= 12,000
Land	155,000	= 155,000
Equipment	19,500	= 19,500
Accumulated Depreciation	300	= 300
Accounts Payable	88,200	= 14,800 –9,500+82,900
Salaries Payable	32,600	= 32,600
Income Tax Payable	9,000	= 9,000
Common Stock	220,000	= 220,000
Retained Earnings	50,000	= 50,000
Sales Revenue	220,000	= 220,000
Interest Revenue	50	= 50
Cost of Goods Sold	115,000	= 115,000
Salaries Expense	62,400	= 29,800 +32,600
Utilities Expense	16,500	= 16,500
Bad Debt Expense	5,900	= 5,900
Depreciation Expense	300	= 300
Income Tax Expense	9,000	= 9,000

Exercise 7-21 (continued)

Requirement 4

TNT Fireworks		
Multiple-Step Income Statement		
For the month ended January 31, 2021		
Sales revenue	\$220,000	
Cost of goods sold	<u>115,000</u>	
Gross profit		\$105,000
Salaries expense	62,400	
Utilities expense	16,500	
Bad debt expense	5,900	
Depreciation expense	<u>300</u>	
Total operating expenses		<u>85,100</u>
Operating income		19,900
Interest revenue		<u>50</u>
Income before taxes		19,950
Income tax expense		<u>9,000</u>
Net income		<u>\$ 10,950</u>

Requirement 5

TNT Fireworks			
Balance Sheet			
January 31, 2021			
Assets		Liabilities	
Current assets:		Current liabilities:	
Cash	\$ 5,400	Accounts payable	\$ 88,200
Accounts receivable	223,000	Salaries payable	32,600
Less: Allowance	<u>(8,100)</u>	Income tax payable	<u>9,000</u>
Interest receivable	50	Total current liabilities	129,800
Inventory	<u>4,200</u>		
Total current assets	224,550		
Long-term assets:		Stockholders' Equity	
Notes receivable	12,000	Common stock	220,000
Land	155,000	Retained earnings	<u>60,950</u> *
Equipment	19,500	Total stockholders' equity	<u>280,950</u>
Less: Accumulated depreciation	<u>(300)</u>	Total liabilities and stockholders' equity	<u>\$410,750</u>
Total assets	<u>\$410,750</u>		

* Retained earnings = Beginning retained earnings + Net income – Dividends
 = \$50,000 + \$10,950 – \$0
 = \$60,950

Exercise 7-21 (concluded)

Requirement 6

January 31, 2021	Debit	Credit
Sales Revenue	220,000	
Interest Revenue	50	
Retained Earnings (Close revenue accounts)		220,050
Retained Earnings	209,100	
Cost of goods sold		115,000
Salaries expense		62,400
Utilities expense		16,500
Bad debt expense		5,900
Depreciation expense		300
Income tax expense (Close expense accounts)		9,000

Requirement 7

(a) The return on assets ratio is:

$$\text{Return on Assets Ratio} = \frac{\text{Net income}}{\text{Average total assets}} = \frac{\$10,950}{(\$284,800 + \$410,750) / 2} = 3.1\%$$

Compared to the industry average of 2%, TNT Fireworks is **more** profitable than other companies in the same industry. Note these are monthly, rather than annual, return on asset calculations. A consistent monthly return on assets of 1% results in a 12% return on assets for the entire year.

(b) The profit margin is:

$$\text{Profit Margin} = \frac{\text{Net income}}{\text{Net sales}} = \frac{\$10,950}{\$220,000} = 5.0\%$$

Compared to the industry average profit margin of 4%, TNT Fireworks is **more** efficient at converting sales to profit than other companies in the same industry.

(c) The asset turnover ratio is:

$$\text{Asset Turnover Ratio} = \frac{\text{Net sales}}{\text{Average total assets}} = \frac{\$220,000}{(\$284,800 + \$410,750) / 2} = 0.63 \text{ times}$$

Compared to the industry average asset turnover of 0.5 times per month, TNT Fireworks is also **more** efficient at producing revenues with their assets.

PROBLEMS: SET A

Problem 7-1A (LO 7-1)

	<u>Land</u>	<u>Building</u>
Purchase price of land	\$70,000	
Demolition of old building	9,000	
Sale of salvaged materials	(1,100)	
Architect fees (for new building)		\$ 20,000
Legal fees (for title investigation of land)	3,000	
Building construction costs		600,000
Interest costs related to the construction		23,000
Totals	<u>\$80,900</u>	<u>\$643,000</u>

The property taxes on the land of \$4,000 will be recorded as property tax expense over the first year.

Problem 7-2A (LO 7-1)

Requirement 1

The ovens should be recorded in the Great Harvest equipment account as detailed in the following schedule:

Purchase price	\$700,000
Freight costs	35,000
Electrical connections	5,000
Labor costs	37,800
Bread dough used in testing ovens	900
Safety guards	1,500
Total equipment	<u>\$780,200</u>

Requirement 2

The repair costs of \$4,000 for the oven damaged during installation should not be included in the equipment account as this is not a normal cost to get the asset ready for use. The repair costs of \$4,000 should be recorded as repairs expense on the income statement.

Problem 7-3A (LO 7-2)

1. The amount Fresh Cut paid for goodwill is \$1.5 million, calculated as follows:

	(in millions)
Purchase price	\$12.0
Less:	
Fair value of assets acquired	13.2
Less: fair value of liabilities assumed	<u>(2.7)</u>
Fair value of identifiable net assets	<u>10.5</u>
Goodwill	<u><u>\$ 1.5</u></u>

2.

(in millions)	<u>Debit</u>	<u>Credit</u>
Accounts Receivable (at fair value)	1.6	
Equipment (at fair value)	9.9	
Patents (at fair value)	1.7	
Goodwill (remaining purchase price)	1.5	
Notes Payable (at fair value)		2.7
Cash (at purchase price)		12.0

Problem 7-4A (LO 7-3)

1. Capitalize
2. Expense
3. Capitalize
4. Capitalize
5. Expense
6. Expense
Health Services could increase reported earnings by improperly recording expenses as assets. For example, Health Services could record maintenance and repair expense to the Equipment asset account. This would lower expenses and increase earnings reported in the current year.

Problem 7-5A (LO 7-4)

Requirement 1 Straight-Line

University Car Wash						
Year	Calculation		=	End of Year Amounts		
	Depreciable Cost*	X Depreciation Rate		Depreciation Expense	Accumulated Depreciation	Book Value**
1	\$246,000	1/6		\$41,000	\$ 41,000	\$229,000
2	246,000	1/6		41,000	82,000	188,000
3	246,000	1/6		41,000	123,000	147,000
4	246,000	1/6		41,000	164,000	106,000
5	246,000	1/6		41,000	205,000	65,000
6	246,000	1/6		41,000	246,000	24,000
Total				\$246,000		

* \$270,000 – \$24,000 = \$246,000
 ** \$270,000 cost minus accumulated depreciation

Requirement 2 Double-declining-balance

University Car Wash						
Year	Calculation		=	End of Year Amounts		
	Beginning Book Value	X Depreciation Rate*		Depreciation Expense	Accumulated Depreciation	Book Value**
1	\$270,000	1/3		\$90,000	\$ 90,000	\$180,000
2	180,000	1/3		60,000	150,000	120,000
3	120,000	1/3		40,000	190,000	80,000
4	80,000	1/3		26,667	216,667	53,333
5	53,333	1/3		17,778	234,445	35,555
6	35,555			11,555***	246,000	24,000
Total				\$246,000		

* 2 / 6 years = 1/3 per year
 ** \$270,000 cost minus accumulated depreciation
 *** Amount needed to reduce book value to residual value.

Requirement 3 Activity-based

University Car Wash

Year	Calculation		=	End of Year Amounts		
	Hours Used	X Depreciation Rate*		Depreciation Expense	Accumulated Depreciation	Book Value**
1	3,100			\$63,550	\$ 63,550	\$206,450
2	1,100			22,550	86,100	183,900
3	1,200			24,600	110,700	159,300
4	2,800			57,400	168,100	101,900
5	2,600			53,300	221,400	48,600
6	1,200			24,600	246,000	24,000
Total	<u>12,000</u>			<u>\$246,000</u>		

* $\$246,000 / 12,000 \text{ hours} = \$20.50/\text{hour}$

** \$270,000 cost minus accumulated depreciation

*** Amount needed to reduce book value to residual value.

Problem 7-6A (LO 7-5)

Requirement 1

a. Goodwill is not amortized.

	<u>Debit</u>	<u>Credit</u>
b. Amortization Expense	11,750*	
Patents		11,750
• <i>(Amortize patent)</i> * \$82,250 / 7 years		
 c. Amortization Expense	 18,500*	
Franchises		18,500
<i>(Amortize franchise)</i> * (\$333,000 / 9 years) x ½ year		

Requirement 2

**University Testing Services
Balance Sheet
December 31, 2021
(Intangible Assets section)**

<u>Intangible Assets</u>	
Goodwill	\$310,000
Patents (\$82,250 – \$11,750)	70,500
Franchises (\$333,000 – \$18,500)	314,500
Total intangible assets	<u><u>\$695,000</u></u>

Problem 7-7A (LO 7-4, 7-5)

Requirement 1

	<u>Debit</u>	<u>Credit</u>
Depreciation Expense	58,880*	
Accumulated Depreciation		58,880
<i>(Depreciate building)</i>		
* \$294,400 x 2/10		
Depreciation Expense	25,000*	
Accumulated Depreciation		25,000
<i>(Depreciate equipment)</i>		
* (\$235,000 – \$10,000)/9		

Requirement 2

	<u>Debit</u>	<u>Credit</u>
Amortization Expense	50,000*	
Patent		50,000
<i>(Amortize patent)</i>		
* \$250,000/5		

Requirement 3

Solich Sandwich Shop			
December 31, 2021			
	Cost	Accumulated Depreciation	Book Value
Land	\$ 95,000	–	\$ 95,000
Building	460,000	\$(224,480)	235,520
Equipment	235,000	(75,000)	160,000
Patent	250,000	(150,000)	100,000

Problem 7-8A (LO 7-6)

Requirement 1

$$\$170,000 = \frac{\$910,000 - \$60,000}{10} \times 2 \text{ years}$$

Requirement 2

Cost of the oven	\$910,000
Less: Accumulated depreciation	<u>(170,000)</u>
Book value at the end of year 2	<u>\$740,000</u>

Requirement 3

Sale amount		\$700,000
Less:		
Cost of the oven	\$910,000	
Less: Accumulated depreciation	<u>(170,000)</u>	
Book value at the end of year 2		<u>740,000</u>
Loss		<u>\$ (40,000)</u>

Requirement 4

	<u>Debit</u>	<u>Credit</u>
Cash	700,000	
Accumulated Depreciation	170,000	
Loss	40,000	
Equipment		910,000
(Sell equipment for a loss)		

Problem 7-9A (LO 7-7)

Requirement 1

Sub Station

Net Income	÷	Average Total Assets	=	Return on Assets
\$25,922	÷	(\$75,183 + \$116,371)/2	=	27.1%
Net Income	÷	Sales	=	Profit Margin
\$25,922	÷	\$108,249	=	23.9%
Sales	÷	Average Total Assets	=	Asset Turnover
\$108,249	÷	(\$75,183 + \$116,371)/2	=	1.1 times

Requirement 2

Planet Sub

Net Income	÷	Average Total Assets	=	Return on Assets
\$3,492	÷	(\$38,599 + \$44,533)/2	=	8.4%
Net Income	÷	Sales	=	Profit Margin
\$3,492	÷	\$62,071	=	5.6%
Sales	÷	Average Total Assets	=	Asset Turnover
\$62,071	÷	(\$38,599 + \$44,533)/2	=	1.5 times

Requirement 3

Sub Station has the higher profit margin, while Planet Sub has the higher asset turnover. This is consistent with their primary business strategies. Sub Station uses the highest quality ingredients to obtain higher profit margins, while Planet Sub emphasizes high sales turnover by selling at lower prices.

Problem 7-10A (LO 7-7)

Requirement 1

Sandwiches Only

Net Income	÷	Average Total Assets	=	Return on Assets
\$170,000	÷	\$500,000	=	34.0%
Net Income	÷	Sales	=	Profit Margin
\$170,000	÷	\$900,000	=	18.9%
Sales	÷	Average Total Assets	=	Asset Turnover
\$900,000	÷	\$500,000	=	1.8 times

Requirement 2

Sandwiches and Smoothies

Net Income	÷	Average Total Assets	=	Return on Assets
\$260,000	÷	\$900,000	=	28.9%
Net Income	÷	Sales	=	Profit Margin
\$260,00	÷	\$1,500,000	=	17.3%
Sales	÷	Average Total Assets	=	Asset Turnover
\$1,500,000	÷	\$900,000	=	1.67 times

Requirement 3

Do not go forward with the expansion plans. The return on assets, profit margin, and asset turnover are all lower with the addition of smoothies. Even though net income increases from \$170,000 to \$260,000, it comes at too great a cost. University Hero would be better off focusing on the more profitable sandwich line.

PROBLEMS: SET B

Problem 7-1B (LO 7-1)

	<u>Land</u>	<u>Building</u>
Purchase price of land	\$90,000	
Land clearing costs	5,000	
Sale of firewood to a worker	(400)	
Architect fees (for new building)		\$ 30,000
Legal fees (for title investigation of land)	3,500	
Building construction costs		400,000
Totals	<u>\$98,100</u>	<u>\$430,000</u>

The property taxes on the land of \$3,000 will be recorded as property tax expense over the first year.

Problem 7-2B (LO 7-1)

Requirement 1

The ovens should be recorded in the Sicily Pizza equipment account as detailed in the following schedule:

Purchase price	\$341,000
Shipping costs	16,000
Labor costs	17,000
Electrical work	3,800
Pizza dough for testing ovens	1,300
New timers	800
Total equipment	<u>\$379,900</u>

Requirement 2

All amounts were included in the Equipment account.

Problem 7-3B (LO 7-2)

1.

Purchase price		\$5,600,000
Less:		
Fair value of assets acquired	\$5,650,000	
Less: Fair value of liabilities assumed	<u>(750,000)</u>	
Fair value of identifiable net assets		<u>4,900,000</u>
Goodwill		<u>\$ 700,000</u>

2.

	<u>Debit</u>	<u>Credit</u>
Accounts Receivable (at fair value)	650,000	
Buildings (at fair value)	4,800,000	
Equipment (at fair value)	200,000	
Goodwill (remaining purchase price)	700,000	
Accounts Payable (at fair value)		750,000
Cash (at purchase price) <i>(Acquire Pioneer Equipment Rental)</i>		5,600,000

Problem 7-4B (LO 7-3)

1. Expense
2. Capitalize
3. Capitalize
4. Expense
5. Expense
6. Capitalize
SYP could increase reported earnings by improperly recording expenses as assets. For example, SYP could record maintenance and repair expense to the Equipment asset account. This would lower expenses and increase earnings reported in the current year.

Problem 7-5B (LO 7-4)

Requirement 1 Straight-line

Cheetah Copy						
Year	Calculation		=	End of Year Amounts		
	Depreciable Cost*	X Depreciation Rate		Depreciation Expense	Accumulated Depreciation	Book Value**
1	\$105,000	0.25		\$26,250	\$ 26,250	\$113,750
2	105,000	0.25		26,250	52,500	87,500
3	105,000	0.25		26,250	78,750	61,250
4	105,000	0.25		26,250	105,000	35,000
Total				<u>\$105,000</u>		

* \$140,000 – \$35,000 = \$105,000
 ** \$140,000 cost minus accumulated depreciation

Requirement 2 Double-declining-balance

Cheetah Copy						
Year	Calculation		=	End of Year Amounts		
	Beginning Book Value	X Depreciation Rate*		Depreciation Expense	Accumulated Depreciation	Book Value**
1	\$140,000	0.50		\$70,000	\$ 70,000	\$70,000
2	70,000	0.50		35,000	105,000	35,000
3	35,000	0.50		0***	105,000	35,000
4	35,000	0.50		0***	105,000	35,000
Total				<u>\$105,000</u>		

* 2 / 4 years = 0.50 per year
 ** \$140,000 cost minus accumulated depreciation
 *** Asset is fully depreciated after two years.

Requirement 3 Activity-based

Cheetah Copy

Year	Calculation		=	End of Year Amounts		
	Hours Used	X Depreciation Rate*		Depreciation Expense	Accumulated Depreciation	Book Value**
1	3,000			\$39,375	\$ 39,375	\$100,625
2	2,000			26,250	65,625	74,375
3	2,000			26,250	91,875	48,125
4	2,000			13,125***	105,000	35,000
Total	<u>9,000</u>			<u>\$105,000</u>		

* \$105,000 / 8,000 hours = \$13.125/hour

** \$140,000 cost minus accumulated depreciation

*** Amount needed to reduce book value to residual value.

Problem 7-6B (LO 7-5)

Requirement 1

a. Goodwill is not amortized.

	<u>Debit</u>	<u>Credit</u>
b. Amortization Expense	5,500*	
Patents		5,500
<i>(Amortize patent)</i>		
* \$49,500 / 9 years		
c. Amortization Expense	13,500*	
Franchises		13,500
<i>(Amortize franchise)</i>		
* (\$216,000 / 8 years) x 1/2 year		

Requirement 2

**Lettuce Express
Balance Sheet
December 31, 2021
(Intangible Assets section)**

<u>Intangible Assets</u>	
Goodwill	\$160,000
Patents (\$49,500 – \$5,500)	44,000
Franchises (\$216,000 – \$13,500)	<u>202,500</u>
Total intangible assets	<u><u>\$406,500</u></u>

Problem 7-7B (LO 7-4, 7-5)

Requirement 1

	<u>Debit</u>	<u>Credit</u>
Depreciation Expense	71,680*	
Accumulated Depreciation		71,680
<i>(Depreciate building)</i>		
* (\$358,400) x 2/10		
Depreciation Expense	15,000*	
Accumulated Depreciation		15,000
<i>(Depreciate equipment)</i>		
*(\$145,000 – \$10,000)/9		

Requirement 2

	<u>Debit</u>	<u>Credit</u>
Amortization Expense	25,000*	
Patent		25,000
<i>(Amortize patent)</i>		
* \$125,000/5		

Requirement 3

Togo's Sandwich Shop			
December 31, 2021			
	Cost	Accumulated Depreciation	Book Value
Land	\$ 85,000	–	\$ 85,000
Building	560,000	\$(273,280)	286,720
Equipment	145,000	(45,000)	100,000
Patent	125,000	(75,000)	50,000

Problem 7-8B (LO 7-6)

Requirement 1

$$\$127,500 = \frac{\$455,000 - \$30,000}{10} \times 3 \text{ years}$$

Requirement 2

Cost of the oven	\$455,000
Less: Accumulated depreciation	<u>(127,500)</u>
Book value at the end of year 3	<u><u>\$327,500</u></u>

Requirement 3

Sale amount		\$341,000
Less:		
Cost of the oven	\$455,000	
Less: Accumulated depreciation	<u>(127,500)</u>	
Book value at the end of year 3		<u>327,500</u>
Gain		<u><u>\$ 13,500</u></u>

Requirement 4

	<u>Debit</u>	<u>Credit</u>
Cash	341,000	
Accumulated Depreciation	127,500	
Gain		13,500
Equipment		455,000
<i>(Sell equipment for a gain)</i>		

Problem 7-9B (LO 7-7)

Requirement 1

Papa's Pizza

Net Income	÷	Average Total Assets	=	Return on Assets
\$2,223	÷	(\$14,998 + \$15,465)/2	=	14.6%
Net Income	÷	Sales	=	Profit Margin
\$2,223	÷	\$24,128	=	9.2%
Sales	÷	Average Total Assets	=	Asset Turnover
\$24,128	÷	(\$14,998 + \$15,465)/2	=	1.6 times

Requirement 2

Pizza Prince

Net Income	÷	Average Total Assets	=	Return on Assets
\$129	÷	(\$919 + \$1,157)/2	=	12.4%
Net Income	÷	Sales	=	Profit Margin
\$129	÷	\$1,835	=	7.0%
Sales	÷	Average Total Assets	=	Asset Turnover
\$1,835	÷	(\$919 + \$1,157)/2	=	1.8 times

Requirement 3

Papa's Pizza has a higher profit margin than Pizza Prince (9.2% vs. 7.0%), while Pizza Prince has a slightly higher asset turnover (1.8 times vs. 1.6 times). Overall, Papa's Pizza has a return on assets of 14.6% compared to 12.4% for Pizza Prince.

Problem 7-10B (LO 7-7)

Requirement 1

Cars Only

Net Income	÷	Average Total Assets	=	Return on Assets
\$500,000	÷	\$1,700,000	=	29.4%
Net Income	÷	Sales	=	Profit Margin
\$500,000	÷	\$6,500,000	=	7.7%
Sales	÷	Average Total Assets	=	Asset Turnover
\$6,500,000	÷	\$1,700,000	=	3.8 times

Requirement 2

Cars and Boats

Net Income	÷	Average Total Assets	=	Return on Assets
\$700,000	÷	\$1,900,000	=	36.8%
Net Income	÷	Sales	=	Profit Margin
\$700,000	÷	\$7,700,000	=	9.1%
Sales	÷	Average Total Assets	=	Asset Turnover
\$7,700,000	÷	\$1,900,000	=	4.1 times

Requirement 3

Go forward with the expansion plans to include the sale of recreational boats. The return on assets, profit margin, and asset turnover are all higher with the additional sale of boats.

ADDITIONAL PERSPECTIVES

Continuing Problem: Great Adventures

AP7-1

Requirement 1

<u>Jul. 1, 2022</u>	<u>Debit</u>	<u>Credit</u>
Equipment	17,000	
Prepaid Insurance	1,800	
Cash		18,800
<i>(Purchase new vehicle and prepay insurance)</i>		
Purchase price	\$12,000	
Painting and new logo	3,000	
Deluxe roof rack and trailer hitch	2,000	
Total	<u>\$17,000</u>	

Requirement 2

<u>Oct. 22, 2022</u>		
Repairs and Maintenance Expense	400	
Cash		400
<i>(Pay vehicle maintenance)</i>		

Requirement 3

Great Adventures

Year	Calculation		=	End of Year Amounts		
	Allocation Base*	× Depreciation Rate		Depreciation Expense	Accumulated Depreciation	Book Value**
2022	\$12,500	0.20 × 1/2		\$1,250	\$ 1,250	\$15,750
2023	12,500	0.20		2,500	3,750	13,250
2024	12,500	0.20		2,500	6,250	10,750
2025	12,500	0.20		2,500	8,750	8,250
2026	12,500	0.20		2,500	11,250	5,750
2027	12,500	0.20 × 1/2		1,250	12,500	4,500
Total				\$12,500		

* \$17,000 – \$4,500 = \$12,500

** \$17,000 cost minus accumulated depreciation

Depreciation expense in 2022 is only six months of the company's accounting year (\$2,500 × 6/12 = \$1,250). The final year of depreciation goes from January 1, 2027 to June 30, 2027.

Requirement 4

Dec. 31, 2022

Depreciation Expense	1,250	
Accumulated Depreciation		1,250
<i>(Depreciate vehicle)</i>		
$[\$1,250 = (\$17,000 - \$4,500) / 5 \times 6/12]$		

Dec. 31, 2022

Insurance Expense	900	
Prepaid Insurance		900
<i>(Expiration of prepaid insurance)</i>		
$(\$900 = \$1,800 \times 6/12)$		

Requirement 5

<u>July 1, 2024</u>	<u>Debit</u>	<u>Credit</u>
Cash	10,000	
Accumulated Depreciation	5,000	
Loss	2,000	
Equipment		17,000
<i>(Sell equipment for a loss)</i>		

Note that 2024 in the schedule goes from January 1, 2024 to December 31, 2024. Depreciation expense in 2024 is only six months of the company's accounting year ($\$2,500 \times 6/12 = \$1,250$) because the vehicle is sold. Thus, when the vehicle is sold, there are two full years of depreciation across three accounting years ($\$1,250$ in 2022 + $\$2,500$ in 2023 + $\$1,250$ in 2024).

Additional Perspective 7-1 (in General Ledger)

Students will be given the following existing trial balance.

Great Adventures, Inc. Trial Balance December 31, 2022

Accounts	Debit	Credit
Cash	\$ 83,270	
Accounts Receivable	50,000	
Allowance for Uncollectible Accounts		\$ 2,400
Inventory	7,000	
Equipment	45,000	
Accumulated Depreciation		24,000
Accounts Payable		20,800
Interest Payable		750
Income Tax Payable		14,500
Notes Payable		30,000
Common Stock		20,000
Retained Earnings		33,450
Service Revenue		44,500
Sales Revenue		100,000
Interest Revenue		120
Sales Discounts	350	
Cost of Goods Sold	38,500	
Depreciation Expense	16,000	
Insurance Expense	4,800	
Rent Expense	2,400	
Salaries Expense	24,000	
Supplies Expense	500	
Bad Debt Expense	2,400	
Repairs and Maintenance Expense	-0-	
Interest Expense	1,800	
Income Tax Expense	14,500	
Totals	\$290,520	\$290,520

Additional Perspective 7-1 (in General Ledger, continued)

<u>Jul. 1, 2022</u>	<u>Debit</u>	<u>Credit</u>
Equipment	17,000	
Prepaid Insurance	1,800	
Cash		18,800
<i>(Purchase new vehicle and prepay insurance)</i>		
<u>Oct. 22, 2022</u>		
Repairs and Maintenance Expense	400	
Cash		400
<i>(Pay vehicle maintenance)</i>		
<u>Dec. 31, 2022</u>		
Depreciation Expense	1,250	
Accumulated Depreciation		1,250
<i>(Depreciate vehicle)</i>		
[$\$1,250 = (\$17,000 - \$4,500) / 5 \times 6 / 12$]		
<u>Dec. 31, 2022</u>		
Insurance Expense	900	
Prepaid Insurance		900
<i>(Expiration of prepaid insurance)</i>		
($\$900 = \$1,800 \times 6 / 12$)		

Additional Perspective 7-1 (in General Ledger, continued)

Great Adventures, Inc. Income Statement For the period ended December 31, 2022		
Service revenue	\$ 44,500	
Sales revenue	100,000	
Sales discounts	<u>(350)</u>	
Net sales	144,150	
Cost of goods sold	<u>38,500</u>	
Gross profit		\$105,650
Depreciation Expense	17,250	
Insurance Expense	5,700	
Rent Expense	2,400	
Salaries Expense	24,000	
Supplies Expense	500	
Bad Debt Expense	2,400	
Repairs and Maintenance Expense	<u>400</u>	
Total operating expenses		<u>52,650</u>
Operating income (loss)		53,000
Interest revenue		120
Interest expense		<u>(1,800)</u>
Income before income taxes		51,320
Income tax expense		<u>14,500</u>
Net income		<u><u>\$36,820</u></u>

Additional Perspective 7-1 (in General Ledger, continued)

Great Adventures, Inc.
Balance Sheet
December 31, 2022

<u>Assets</u>		<u>Liabilities</u>	
Current assets:		Current liabilities:	
Cash	\$ 64,070	Accounts payable	\$ 20,800
Accounts receivable	50,000	Interest payable	750
Allow for Uncoll Accts	(2,400)	Income tax payable	14,500
Inventory	7,000		
Prepaid Insurance	900	Total current liabilities	26,050
Total current assets	119,570	Notes payable	30,000
		Total liabilities	66,050
Long-term assets:			
Equipment	62,000	<u>Stockholders' Equity</u>	
Accumulated depreciation	(25,250)	Common stock	20,000
		Retained earnings	70,270
		Total stockholders' equity	90,270
		Total liabilities and stockholders' equity	\$156,320
Total assets	\$156,320		

Additional Perspective 7-1 (in General Ledger, concluded)

<u>Dec. 31, 2022</u>	<u>Debit</u>	<u>Credit</u>
Service Revenue	44,500	
Sales Revenue	100,000	
Interest Revenue	120	
Sales Discounts		350
Retained Earnings		144,270
<i>(Close revenue accounts)</i>		
<u>Dec. 31, 2022</u>		
Retained Earnings	107,450	
Cost of Goods Sold		38,500
Depreciation Expense		17,250
Insurance Expense		5,700
Rent Expense		2,400
Salaries Expense		24,000
Supplies Expense		500
Bad Debt Expense		2,400
Repairs and Maintenance Expense		400
Interest Expense		1,800
Income Tax Expense		14,500
<i>(Close expense accounts)</i>		

Financial Analysis: American Eagle

AP7-2

(\$ in thousands)

Requirement 1

The straight-line method is used. The estimated useful lives are as follows:

Buildings	25 years
Fixtures and equipment	5 years

Requirement 2

The cost of property and equipment is \$2,023,875 and the book value is \$724,239. Book value is the same as “Property and equipment, net”. The trend in depreciation expense is **increasing**.

Requirement 3

The intangible asset listed is trademarks. The cost is \$70,322 and the book value is \$46,666. The trend in amortization expense is **increasing**.

Financial Analysis: The Buckle

AP7-3

(\$ in thousands)

Requirement 1

Buckle uses a combination of accelerated and straight-line depreciation methods. The estimated useful lives are as follows:

Property and equipment	5 to 10 years
Buildings	31.5 to 39 years

Requirement 2

The cost of property and equipment is \$459,043. The trend in property is **decreasing**.

Requirement 3

The other types of long-term assets listed are Long-term investments and Other assets.

Comparative Analysis: American Eagle vs. The Buckle

AP7-4

Requirement 1

American Eagle (\$ in thousands)

Net Income	÷	Average Total Assets	=	Return on Assets
\$204,163	÷	(\$1,816,313 + 1,782,660)/2	=	11.3%

Net Income	÷	Sales	=	Profit Margin
\$204,163	÷	\$3,795,549	=	5.4%

Sales	÷	Average Total Assets	=	Asset Turnover
\$3,795,549	÷	(\$1,816,313 + 1,782,660)/2	=	2.1 times

Requirement 2

Buckle (\$ in thousands)

Net Income	÷	Average Total Assets	=	Return on Assets
\$89,707	÷	(\$538,116 + \$579,847)/2	=	16.0%

Net Income	÷	Sales	=	Profit Margin
\$89,707	÷	\$913,380	=	9.8%

Sales	÷	Average Total Assets	=	Asset Turnover
\$913,380	÷	(\$538,116 + \$579,847)/2	=	1.6 times

Requirement 3

Buckle has a higher return on assets and profit margin. American Eagle has a higher asset turnover.

Ethics

AP7-5

1. Yes.

Depreciation is affected by management's choice of depreciation method (such as straight-line, double-declining-balance, or activity-based) and by management's estimate of the asset's useful service life and residual value. Depreciation expense is reported as an expense in the income statement. Accumulated Depreciation is reported as a contra asset in the balance sheet.

2.

(a) Straight-line.

A company could increase earnings by changing from double-declining-balance to straight-line in the early years of an asset's life. Double-declining-balance depreciation will be higher than straight-line depreciation in earlier years, but lower in later years. Since expenses decrease net income, the higher depreciation expense under double-declining-balance will result in lower reported net income.

(b) Longer service life.

A company could increase earnings by lengthening the estimated service lives of depreciable assets. A longer service life reduces the amount of depreciation in each particular year, resulting in higher reported net income.

(c) Higher residual value.

A company could increase earnings by increasing the estimated residual value of depreciable assets. A larger residual value results in a lower depreciable cost of the asset and therefore less depreciation expense being recorded each year. Lower depreciation expense, in turn, results in higher reported net income.

3. Yes.

Many amounts reported in financial statements are based on estimates by management, and these estimates are a crucial part of the information set used by investors and creditors to make decisions. To the extent that these estimates are materially misstated by management, financial reporting provides misleading information.

4. No.

Even though Wall Street analysts place extensive pressure on companies to meet earnings expectations, management and the company's auditors have a legal and ethical responsibility to fairly report all estimates, including those for depreciation. A successful defense for misreporting financial performance cannot include pressure from external decision makers.

Internet Research

AP7-6

This case provides an opportunity for students to learn how to locate annual reports available on company websites. It also allows students to learn more about how long-term assets are reported in the annual report. Answers to the assignment will vary depending on the company chosen.

Written Communication

AP7-7

The dictionary definition of depreciation is a decrease in value of an asset. The accounting concept of depreciation is different. Depreciation in accounting is the process of allocating to an expense the cost of an asset over its service life. An asset provides benefits (revenues) to a company in future periods. To properly match the cost (expense) with the revenues it helps to generate, we allocate a portion of the asset's cost to an expense in each year that the asset provides a benefit.

Earnings Management

AP7-8

Requirement 1

Depreciation expense = $(\$4,200,000 - \$600,000) / 12 \text{ years} = \$300,000$

Requirement 2

Option 1:

Depreciation expense = $(\$4,200,000 - \$600,000) / 6 \text{ years} = \$600,000$. The higher amount of depreciation expense would lower net income in the current year.

Option 2:

Depreciation expense = $(\$4,200,000 - \$0) / 12 \text{ years} = \$350,000$. The higher amount of depreciation expense would lower net income in the current year.

Option 3:

Depreciation expense = $(\$4,200,000 - \$0) / 6 \text{ years} = \$700,000$. The higher amount of depreciation expense would lower net income in the current year.

Requirement 3

Option 3 results in the biggest decrease in net income.