Review Problem

Property, Plant, and Equipment

Swift Motor Lines is a trucking company that hauls crude oil in the Rocky Mountain states. It currently has 20 trucks. The following information relates to a single truck:

a. Date truck was purchased, July 1, 2017
b. Cost of truck:

Truck	£125,000
Paint job	3,000
Sales tax	7,000

c. Estimated useful life of truck, 120,000 miles
d. Estimated salvage value of truck, £27,000
e. 2019 expenditures on truck:
   (1) £6,000 on new tires and regular maintenance
   (2) On January 1, spent £44,000 to completely rework the truck's engine; increased the total life to 200,000 miles but left expected salvage value unchanged
f. Miles driven:

2017	11,000
2018	24,000
2019 (after reworking of engine)	20,000
2020	14,000

Required:

Record journal entries to account for the following. (Use the units-of-production depreciation method.)

1. Purchase of the truck
2. Expenditures on the truck during 2019
3. Depreciation expense for:
   a. 2017
   b. 2018
   c. 2019
   d. 2020

Solution:

1. Truck Purchase

The cost of the truck includes both the amount paid for it and all costs incurred to get it in working condition. In this case, the cost includes both the paint job and the sales tax. Thus, the entry to record the purchase is:

Truck	135,000	
Cash		135,000
Purchased truck for cash.		

2. Expenditures

The expenditure of £6,000 is an ordinary expenditure and is expensed in the current year. The engine overhaul is capitalized. The entries are:

Repairs and Maintenance Expense	6,000	
Cash		6,000
Recorded purchase of new tires and regular maintenance on truck.		
Truck	44,000	
Cash		44,000
Recorded major overhaul to truck's engine.		

3. Depreciation Expense

The formula for units-of-production depreciation on the truck is:

$$\frac{\text{Cost} - \text{Salvage value}}{\text{Total miles expected to be driven}} \times \begin{matrix}\text{Number of miles driven} \\ \text{in any year}\end{matrix} = \text{Depreciation expense}$$

Journal entries and calculations are as follows:

a. 2017:

Depreciation Expense	9,900	
Accumulated Depreciation, Truck		9,900
Recorded depreciation expense for 2017.		

$$\frac{£135{,}000 - £27{,}000}{120{,}000 \text{ miles}} \times 11{,}000 \text{ miles} = £9{,}900, \text{ or } £0.90 \text{ per mile} \times 11{,}000 \text{ miles}$$

b. 2018:

Depreciation Expense	21,600	
Accumulated Depreciation, Truck		21,600
Recorded depreciation expense for 2018.		

£0.90 × 24,000 miles = £21,600

c. 2019:

Depreciation Expense	14,600	
Accumulated Depreciation, Truck		14,600
Recorded depreciation expense for 2019.		

$$\frac{\begin{matrix}£135{,}000 - £9{,}900 - £21{,}600 \\ + £44{,}000 - £27{,}000\end{matrix}}{\begin{matrix}165{,}000 \text{ miles} \\ (200{,}000 - 11{,}000 - 24{,}000)\end{matrix}} \times 20{,}000 \text{ miles} = £14{,}600, \text{ or } £0.73^{*} \text{ per mile} \times 20{,}000 \text{ miles}$$

*Rounded to the nearest cent.

d. 2020:

Depreciation Expense	10,220	
Accumulated Depreciation, Truck		10,220
Recorded depreciation expense for 2020.		

£0.73 × 14,000 miles = £10,220

Property, Plant, and Equipment with Accelerated Depreciation Methods

Swift Motor Lines currently bought a new computer. The following information relates to the new computer.

a. Date the computer was purchased, January 1, 2017
b. Cost of the computer

Computer	£25,000
Installation	500
Sales tax	1,500

c. Estimated useful life of the computer, three years
d. Estimated salvage value of the computer, £1,200

Required:

Record journal entries to account for the following. (Use the double-declining-balance depreciation method.)

1. The purchase of the computer
2. Depreciation expense for:
   a. 2017
   b. 2018
   c. 2019

Solution:

1. Computer Purchase

The cost of the computer includes both the amount paid for it and all costs incurred to get it in working condition. In this case, the cost includes both the installation and the sales tax. Thus, the entry to record the purchase is:

Equipment	27,000	
Cash		27,000
Purchased the computer for cash.		

2. Depreciation Expense

The formula for double-declining-balance depreciation on the computer is:

$$\frac{1}{\text{Estimated life (years)}} \times 2 = \frac{1}{3} \times 2 = \text{double-declining-balance rate} = \frac{2}{3}$$

Depreciation for the three years is calculated as follows:

2017: £27,000 $\times \frac{2}{3}$ = £18,000

2018: (£27,000 − £18,000) $\times \frac{2}{3}$ = £6,000

2019: £27,000 − £18,000 − £6,000 = £3,000
£3,000 − £1,200 = £1,800

The depreciation entries are:

a.	2017:		
	Depreciation Expense	18,000	
	Accumulated Depreciation, Equipment		18,000
	Recorded depreciation expense for 2017.		
b.	2018:		
	Depreciation Expense	6,000	
	Accumulated Depreciation, Equipment		6,000
	Recorded depreciation expense for 2018.		
c.	2019:		
	Depreciation Expense	1,800	
	Accumulated Depreciation, Equipment		1,800
	Recorded depreciation expense for 2019.		

Put it on Paper

Discussion Questions

1. What are the major characteristics of property, plant, and equipment?
2. Why are expenditures other than the net purchase price included in the cost of an asset?
3. Why are fair market values used to determine the cost of operating assets acquired in a basket purchase?
4. Companies usually depreciate assets like buildings even though those assets may be increasing in value. Why?
5. Which of the depreciation methods discussed in this chapter will usually result in the highest net income in the early years of an asset's life?
6. How does the declining-balance method of depreciation differ from other methods of depreciation?
7. Modified accelerated cost recovery system (MACRS) depreciation is allowed by the IRS but usually is not used in financial reporting. Why do you think this is the case?
8. Why is it often necessary to recalculate the depletion rate for natural resources?
9. When changing the estimate of the useful life of an asset, should depreciation expense for all the previous years be recalculated? If not, how do you account for a change in this estimate?
10. How does the company accountant decide whether an expenditure should be capitalized or expensed?
11. If a firm is uncertain whether an expenditure will benefit one or more than one accounting period, or whether it will increase the capacity or useful life of an operational asset, most firms will expense rather than capitalize the expenditure. Why?
12. Sometimes long-term assets experience sudden dramatic decreases in value. For example, a waste dump might suddenly be constructed next to an office building. When such impairment of value occurs, should the decrease in value be recognized immediately, or should the same amount of depreciation expense be recognized as in past years?
13. Why is it common to have a gain or loss on the disposal of a long-term operating asset? Is it true that if the useful life and salvage value of an asset could be known with certainty and were realized, there would never be such a gain or loss?
14. When recording the disposal of a long-term operating asset, why is it necessary to debit the accumulated depreciation of the old asset?
15. Why are intangible assets considered assets although they have no physical substance?
16. Goodwill can be recorded only when a business is purchased. Does this result in similar businesses having incomparable financial statements?
17. How is fixed asset turnover calculated, and what does the resulting ratio value mean?

PRACTICE EXERCISES

PE 9-1 LO 1

Long-Term Operating Assets

Which one of the following is *not* an example of a long-term operating asset?

a. Buildings
b. Land
c. Goodwill
d. Equipment
e. Office Supplies

PE 9-2 LO 2

Asset Purchased with Cash

K. Marie Company used cash to purchase a stamping machine. The retail price on the machine is $124,000, but the company received a 1.5% discount. It also paid $7,700 in sales tax for the purchase. Make the necessary journal entry to record this transaction.

PE 9-3 LO 2

Asset Purchased Partially with Cash

Refer to the data in PE 9-2. Assume the company borrowed $40,000 of the purchase price from a bank. Make the necessary journal entry to record this transaction.

PE 9-4 LO 2

Asset Purchased with Cash

Kellman Company purchased a building for cash of $980,000. Before the building could be used, extensive remodeling was necessary; the remodeling cost of $220,000 was also paid in cash. Make the journal entry necessary to record this transaction.

PE 9-5 LO 2

Joint Assets

Diviney Company purchased land and a building for a total of $1,000,000 in cash. The land has a fair value of $440,000. The building has a fair value of $660,000. Make the journal entry necessary to record the transaction.

PE 9-6 LO 2

Acquisition of Several Assets at Once

Komo Company purchased a building and the accompanying land for $890,000 cash. Independent appraisers estimated the fair market value of the building and the land to be $720,000 and 240,000, respectively. Make the necessary journal entry to record this transaction.

PE 9-7 LO 3

Straight-Line Method of Depreciation

Using the following data and the straight-line method of depreciation, compute depreciation expense and make the necessary journal entry to record depreciation expense for the first year.

Cost of machine	$1,000,000
Estimated useful life (years)	8 years
Salvage value	$40,000
Estimated useful life (units)	1,600,000
Units produced during the first year	180,000

PE 9-8 LO 3

Units-of-Production Method of Depreciation

Refer to the data in PE 9-7. Using the units-of-production method of depreciation, compute depreciation expense and make the necessary journal entry to record depreciation expense for the first year.

PE 9-9 LO 3

Partial-Year Depreciation Calculations

On September 30, Hoagland Company purchased a $34,000 delivery truck. The company estimates the truck will last six years and have a salvage value of $4,000 at the end of six years. Using the straight-line method of depreciation, compute the amount of depreciation in the first two years of the truck's service.

PE 9-10 LO 3

Units-of-Production Method with Natural Resources

Muriel Company purchased an oil field for $4,200,000 cash. The oil field contains an estimated 600,000 barrels of oil. During the first year of operation, the company extracts and sells 70,000 barrels of oil. Compute the amount of depletion expense, and make the necessary journal entry to record depletion expense for the year.

PE 9-11 LO 3

Declining-Balance Method of Depreciation

Using the following data and the double-declining-balance method of depreciation, compute depreciation expense for the first two years.

Cost of machine	$3,000,000
Estimated useful life (years)	10 years
Salvage value	$200,000

PE 9-12 LO 4

Changes in Depreciation Estimates

Consider the following data for Kathleen's Tropical Resorts, Inc.

Cost of machine	$1,000,000
Estimated useful life (years)	8 years
Salvage value	$40,000
Estimated useful life (units)	1,600,000
Units produced during the first year	180,000

Assume Kathleen's computed depreciation expense of $120,000 per year. After three years, Kathleen's determined that the machine would last eight more years (for a total of 11 years). Compute depreciation expense for the fourth year.

PE 9-13 LO 5

Repairing and Improving Property, Plant, and Equipment

Runyan Company has a molding machine with a historical cost of $150,000 and accumulated depreciation of $110,000. On January 1, 2017, the company performed a major motor overhaul costing $24,000. Runyan expects the machine will last seven more years and have a salvage value of $8,000. Compute depreciation expense for the current year using the straight-line method.

PE 9-14 LO 6

Determining Asset Impairment

Buyun Company purchased a building 14 years ago for $830,000. The building has accumulated depreciation of $581,000 and net fair value of $175,000. Buyun expects the building will generate a net cash inflow for the next seven years, as represented by the value in use of $210,000. From an accounting point of view, determine whether the building is impaired.

PE 9-15 LO 6

Recording Decreases in the Value of Property, Plant, and Equipment

Using the information in PE 9-14, determine the amount of impairment and record the impairment loss.

PE 9-16 LO 8

Discarding Property, Plant, and Equipment

Stout Company scrapped a truck with a historical cost of $60,000 and accumulated depreciation of $48,000. In addition, the company had to pay $500 to discard the truck. Make the necessary journal entry to record this transaction.

PE 9-17 LO 8

Selling Property, Plant, and Equipment

Millard Company sold a truck with a historical cost of $60,000 and accumulated depreciation of $48,000 for $14,000 cash. Make the necessary journal entry to record this transaction.

PE 9-18 LO 8

Selling Property, Plant, and Equipment

Didericksen Company sold a truck with a historical cost of $50,000 and accumulated depreciation of $24,000 for $20,000 cash. Make the journal entry necessary to record the sale.

PE 9-19 LO 9

Patents

On January 1, 2017, Jameson Company purchased a 13-year-old patent from another company for $210,000. The patent has a seven-year legal life remaining. Make the necessary journal entry to record amortization for the year the patent was acquired.

PE 9-20 LO 9

Goodwill

Big Company purchased Little Company for $290,000. At the time of purchase, the fair value of Little Company's assets and liabilities was as follows:

Inventory	$ 40,000
Property, plant, and equipment	190,000
Other assets	72,000
Liabilities	67,000

Make the necessary journal entry on Big Company's books to record the purchase.

PE 9-21 LO 10

Fixed Asset Turnover

Using the following data, compute the fixed asset turnover.

Current assets, end of year	$ 35,000
Fixed assets, end of year	180,000
Fixed assets, beginning of year	195,000
Sales during the year	595,000

EXERCISES

E 9-1 LO 2

Accounting for the Acquisition of a Long-Term Asset

Action Jackson Company acquired a new machine in order to expand its productive capacity. The costs associated with the machine purchase were as follows:

Purchase price	$25,000
Installation costs	750
Cost of initial testing	900
Sales tax	1,563

1. Make the journal entry to record the acquisition of the machine. Assume that all costs were paid in cash.
2. Make the journal entry to record the acquisition of the machine. Assume that Action Jackson signed a note payable for the $25,000 purchase price and paid the remaining costs in cash.

E 9-2 LO 2

Computing Asset Cost

Moonlight Co. acquired a machine. The purchase price was NT$540,000. The installation costs were NT$1,000. The delivery cost was NT$1,400. Machine in transit incurred a repair cost of NT$400. Determine the cost of the machine.

E 9-3 LO 2

Accounting for the Acquisition of Assets—Basket Purchase

Warbler Corporation purchased land, a building, and equipment for a total cost of $625,000. After the purchase, the property was appraised. Fair values were determined to be $245,000 for the land, $350,000 for the building, and $105,000 for the equipment. Given these appraisals, record the purchase of the property by Warbler.

E 9-4 LO 3

Depreciation Calculations

Garns Photography Company purchased a new car on July 1, 2017, for $26,000. The estimated life of the car was five years or 110,000 miles, and its salvage value was estimated to be $1,000. The car was driven 9,000 miles in 2017 and 24,000 miles in 2018.

1. Compute the amount of depreciation expense for 2017 and 2018 using the following methods:
   a. Straight-line
   b. Units-of-production
2. Which depreciation method more closely reflects the used-up service potential of the car? Explain.

E 9-5 LO 3

Depreciation Calculations

Denver Hardware Company has a giant paint mixer that cost $31,500 plus $400 to install. The estimated salvage value of the paint mixer at the end of its useful life in 15 years is estimated to be $1,900. Denver estimates that the machine can mix 850,000 cans of paint during its lifetime. Compute the second full year's depreciation expense, using the following methods:

1. Straight-line
2. Units-of-production, assuming that the machine mixes 51,000 cans of paint during the second year

---

E 9-6 LO 3

Depreciation Computations

Borges Corporation purchases a $760,000 piece of equipment on January 2, 2017, for use in its manufacturing process. The equipment's estimated useful life is 10 years with no salvage value. Borges uses 150% declining-balance depreciation for all its equipment.

1. Compute the depreciation expense for 2017, 2018, and 2019.
2. Compute the carrying amount of the equipment on December 31, 2019.

E 9-7 LO 3

Depreciation Calculations

On January 1, 2017, MAC Corporation purchased a machine for $60,000. The machine cost $800 to deliver and $2,000 to install. At the end of 10 years, MAC expects to sell the machine for $2,000. Compute depreciation expense for 2017 and 2018 using the following methods:

1. Double-declining-balance
2. 150% declining-balance

E 9-8 LO 2 LO 3

Computing Asset Cost and Depreciation Expense

Maximum Renovation Company decided to purchase a new carpet cutting machine for its shop in Los Angeles. After a long search, it found the appropriate machine in Chicago. The machine costs $32,000 and has an estimated 16-year life and no salvage value. Maximum made the following additional expenditures with respect to this purchase:

Sales tax	$1,400
Delivery costs (FOB shipping point)	1,200
Assembly cost	900
Painting of machine to match the décor	500

1. What is the cost of the machine to Maximum?
2. What is the amount of the first full year's depreciation if Maximum uses the straight-line method?

E 9-9 LO 2 LO 3

Acquisition and Depreciation of Assets

Vandre Oil Company, which prepares financial statements on a calendar-year basis, purchased new drilling equipment on July 1, 2018, using check numbers 1035 and 1036. The check totals are shown here, along with a breakdown of the charges.

1035 (Payee—Oil Equipment, Inc.):	
Cost of drilling equipment	$150,000
Cost of cement platform	50,000
Installation charges	26,000
Total	$226,000
1036 (Payee—Red Ball Freight):	
Freight costs for drilling equipment	$ 4,000

Assume that the estimated life of the drilling equipment is 10 years and its salvage value is $7,000.

1. Record the disbursements on July 1, 2018, assuming that no entry had been recorded for the drilling equipment.
2. Disregarding the information given about the two checks, assume that the drilling equipment was recorded at a total cost of $195,000. Calculate the depreciation expense for 2018 using the straight-line method.

E 9-10 LO 2 LO 3

Acquisition and Depreciation of Assets

Brough Oil Company, which prepares financial statements on a calendar-year basis, purchased new drilling equipment on July 1, 2018. A breakdown of the cost follows:

Cost of drilling equipment	$125,000
Cost of cement platform	35,000
Installation charges	22,000
Freight costs for drilling equipment	3,000
Total	$185,000

Assuming that the estimated life of the drilling equipment is 20 years and its salvage value is $10,000:

1. Record the purchase on July 1, 2018.
2. Assume that the drilling equipment was recorded at a total cost of $140,000. Calculate the depreciation expense for 2018 using the following methods:
   a. Double-declining-balance
   b. 150% declining-balance

E 9-11 LO 2 LO 3

Acquisition and Depreciation

At the beginning of 2018, Beefs Steak House constructed a new walk-in freezer that had a useful life of 10 years. At the end of 10 years, the motor could be salvaged for $3,500. In addition to construction costs that totaled $15,000, the following costs were incurred:

Sales taxes on components	$1,100
Delivery costs	700
Installation of motor	300
Painting of both interior and exterior of freezer	200

1. What is the cost of the walk-in freezer to Beefs?
2. Compute the amount of depreciation to be taken in the first year assuming Beefs uses the double-declining-balance method.

E 9-12 LO 2 LO 5

Acquisition and Improvement of Assets

Prepare entries in the books of Thinker, Inc., to reflect the following. (Assume cash transactions.)

1. Purchased a milling machine to be used by the firm in its production process.

Invoice price	$35,000
Cash discount taken	700
Installation costs	1,600
Sales tax on machine	1,750

2. Performed normal periodic maintenance on the milling machine at a cost of $350.
3. Added to the milling machine a governor costing $500, which is expected to increase the machine's useful life.

E 9-13 LO 3 LO 4

Accounting for Natural Resources

On January 1, 2017, Sobel Holding Corporation purchased a coal mine for cash, having taken into consideration the favorable tax consequences and the inevitable energy crunch in the future. Sobel paid $1,125,000 for the mine. Shortly before the purchase, an engineer estimated that there were 180,000 tons of coal in the mine.

1. Record the purchase of the mine on January 1, 2017.
2. Record the depletion expense for 2017, assuming that 40,000 tons of coal were mined during the year.

3. Assume that on January 1, 2018, the company received a new estimate that the mine now contained 215,000 tons of coal. Record the entry (if any) to show the change in estimate.
4. Record the depletion expense for 2018, assuming that another 40,000 tons of coal were mined.

E 9-14 LO 3 LO 4

Change in Estimated Useful Life

On January 1, 2017, Landon Excavation Company purchased a new bulldozer for $120,000. The equipment had an estimated useful life of 10 years and an estimated residual value of $10,000. On January 1, 2019, Landon determined that the bulldozer would have a total useful life of only 8 years instead of 10 years with no change in residual value. Landon uses straight-line depreciation.

Compute depreciation expense on this bulldozer for 2017, 2018, and 2019.

E 9-15 LO 3 LO 4

Understanding Depreciation Concepts

Maria Muchon has prepared the following list of statements about depreciation.

1. Depreciation is a process of asset valuation, not cost allocation.
2. Three factors affect the computation of depreciation: cost, useful life, and residual value.
3. The book value of a plant asset should approximate its fair value.
4. Depreciation applies to three classes of plant assets: land, buildings, and equipment.
5. Depreciation does not apply to a building because its usefulness and revenue-producing ability generally remain intact over time.
6. Depreciation provides for the proper matching of expenses with revenues.
7. Recognizing depreciation on an asset results in an accumulation of cash for replacement of the asset.
8. The revenue-producing ability of a depreciable asset will decline due to wear and tear and to obsolescence.
9. Depreciation expense and accumulated depreciation are reported on the income statement.
10. The balance in accumulated depreciation represents the total cost that has been charged to expense.

Identify each statement as true or false. If false, indicate how to correct the statement.

E 9-16 LO 6

Asset Impairment

Consider the following three independent scenarios:

	1	2	3
Original cost of asset	$1,400	$1,400	$1,400
Accumulated depreciation	400	400	400
Value in use	1,500	1,500	900
Net fair value of the asset	1,100	800	800

1. For each of the three scenarios, answer the following questions:
   a. Is the asset impaired?
   b. At what amount (net of accumulated depreciation) should the asset be reported?
2. Make the journal entry required in Scenario 3.

E 9-17 LO 6

Asset Impairment

In 2013, Yorkshire Company purchased land and a building at a cost of $700,000, of which $150,000 was allocated to the land and $550,000 was allocated to the building. As of December 31, 2017, the accounting records related to these assets were as follows:

Land	$150,000
Building	550,000
Accumulated Depreciation, Building	150,000

On January 1, 2018, it is determined that there is toxic waste under the building and the future cash flows associated with the land and building are less than the recorded total carrying amount for those two assets. The estimated value in use is $100,000. The net fair value of the land and building together is now only $120,000, of which $50,000 is land and $70,000 is the building. How should this impairment in value be recognized? Make the entry on January 1, 2018, to record the impairment of the land and building.

E 9-18
LO 8

Disposal of Assets

Montaigne Delivery Company has a truck that it wants to sell. The truck had an original cost of $60,000, was purchased three years ago, and was expected to have a useful life of eight years with no salvage value.

Using straight-line depreciation and assuming that depreciation expense for three full years has been recorded, prepare journal entries to record the disposal of the truck under each of the following independent conditions:

1. Montaigne sells the truck for $42,000 cash.
2. Montaigne sells the truck for $35,000 cash.
3. The old truck is wrecked and Montaigne hauls it to the junkyard.

E 9-19
LO 8

Disposal of an Asset

Aeronautics Company purchased a machine for $115,000. The machine has an estimated useful life of eight years and a salvage value of $7,000. Journalize the disposal of the machine under each of the following conditions. (Assume straight-line depreciation.)

1. Sold the machine for $97,000 cash after two years.
2. Sold the machine for $36,000 cash after five years.

E 9-20
LO 8

Accounting for Disposal of Equipment

Barbier Company owns equipment that cost $100,000 when purchased on January 1, 2015. It has been depreciated using the straight-line method based on estimated residual value of $16,000 and an estimated useful life of 5 years.

Required:

Prepare Barbier Company's journal entries to record the sale of the equipment in the following four independent situations.

1. Sold for $56,000 on January 1, 2018.
2. Sold for $56,000 on May 1, 2018.
3. Sold for $22,000 on January 1, 2018.
4. Sold for $22,000 on October 1, 2018.

E 9-21
LO 9

Accounting for Intangible Assets

Cervantes Labs, Inc., has the following intangible assets:

Asset	Cost	Date Purchased	Expected Useful or Legal Life
Goodwill	$ 26,000	January 1, 2009	Unlimited
Patent	182,000	January 1, 2011	20 years

1. Record the amortization expense for both of these intangible assets for 2018 assuming neither of the assets is impaired.
2. Prepare the intangible assets section of the balance sheet for Cervantes as of December 31, 2018.

E 9-22
LO 9

Intangible Assets

On January 1, 2018, Landon Company purchased a patent for $250,000 to allow it to improve its product line. On July 1, 2018, Landon purchased another existing business in a nearby city for a total cost of $750,000. The market value of the land, building, equipment, and other tangible assets was $550,000. The excess $200,000 was recorded as goodwill.

Assuming Landon amortizes patents over a 20-year period, record the following:

1. The purchase of the patent on January 1, 2018.
2. The amortization of the patent at December 31, 2018.
3. Under what conditions would goodwill be amortized on the books of Landon?

E 9-23
LO 9

Computing Goodwill

Stringtown Company purchased Stansbury Island Manufacturing for £1,800,000 cash. The carrying amount and fair value of the assets of Stansbury as of the date of the acquisition are listed below.

	Carrying Amount	Market Value
Cash	£ 30,000	£ 30,000
Accounts receivable	300,000	300,000
Inventory	350,000	600,000
Property, plant, and equipment	500,000	900,000
Totals	£1,180,000	£1,830,000

In addition, Stansbury had liabilities totaling £400,000 at the time of the acquisition.

1. At what amounts will the individual assets of Stansbury be recorded on the books of Stringtown, the acquiring company?
2. How will Stringtown account for the liabilities of Stansbury?
3. How much goodwill will be recorded as part of this acquisition?

E 9-24

LO 10

Fixed Asset Turnover

Fitzgerald's Emporium reported the following asset values in 2017 and 2018.

	2018	2017
Cash	$ 63,000	$ 48,000
Accounts receivable	605,000	490,000
Inventory	560,000	520,000
Land	350,000	310,000
Buildings	740,000	680,000
Equipment	140,000	120,000

In addition, Fitzgerald's had sales of $3,650,000 in 2018. Cost of goods sold for the year was $2,300,000. Compute Fitzgerald's fixed asset turnover ratio for 2018.

PROBLEMS

P 9-1

LO 2

Determining Acquisition Costs of Land and Building

Weminster Company was organized on January 1. During the first year of operations, the following plant asset expenditures and receipts were recorded in random order.

	Debit	
1.	Cost of filling and grading the land	$ 13,200
2.	Full payment to building contractor	1,560,000
3.	Real estate taxes on land paid for the current year	10,000
4.	Cost of real estate purchased as a plant site (land €200,000 and building €90,000)	290,000
5.	Excavation costs for new building	70,000
6.	Architect's fees on building plans	20,500
7.	Accrued real estate taxes paid at time of purchase of real estate	5,600
8.	Cost of parking lots and driveways	28,000
9.	Cost of demolishing building to make land suitable for construction of new building	30,000
		$2,027,300
	Credit	
10.	Proceeds from salvage of demolished building	$ 7,200

Required:

Analyze the foregoing transactions using the following column headings. Insert the number of each transaction in the Item column, and then insert the amounts in the appropriate columns. For amounts entered in the Other Accounts column, also indicate the account titles.

Item	Land	Buildings	Other Accounts

P 9-2 LO 3

Accounting for Natural Resources

On May 31, 2017, Barren Oil Company purchased an oil well, with estimated reserves of 200,000 barrels of oil, for $2.0 million cash.

Required:

Prepare journal entries for the following:

1. Record the purchase of the oil well.
2. During 2017, 16,000 barrels of oil were extracted from the well. Record the depletion expense for 2017.
3. During 2018, 21,000 barrels of oil were extracted from the well. Record the depletion expense for 2018.

P 9-3 LO 3

Financial Statement Effects of Depreciation Methods

On July 1, 2017, the consulting firm of Little, Smart, and Quick bought a new computer for $120,000 to help it service its clients more efficiently. The new computer was estimated to have a useful life of five years with an estimated salvage value of $20,000 at the end of five years. It was further estimated that the computer would be in operation about 1,500 hours in each of the five years with some variation of use from year to year. Janet Little, who manages the firm's internal operations, has asked you to help her decide which depreciation method should be selected for the new computer. The methods being considered are straight-line and double-declining-balance.

Required:

1. Prepare a schedule showing depreciation for 2017, 2018, and 2019 for each of the two methods being considered.
2. For each of the two methods, compute the asset carrying amount that would be reported on the balance sheet at December 31, 2019.
3. **Interpretive Question:** Which method would maximize income for the three years (2017–2019), and which would minimize income for the same period?

P 9-4 LO 3

Depreciation Calculations

Gretchen, Inc., a firm that makes oversized boots, purchased a machine for its factory. The following data relate to the machine:

Price	$46,000
Delivery charges	$350
Installation charges	$650
Date purchased	May 1, 2017
Estimated useful life:	
In years	10 years
In hours of production	25,000 hours of operating time
Salvage value	$2,000

During 2017, the machine was used 1,800 hours. During 2018, the machine was used 2,900 hours.

Required:

Determine the depreciation expense and the year-end carrying amount for the machine for the years 2017 and 2018, assuming that:

1. The straight-line method is used.
2. The units-of-production method is used.
3. **Interpretive Question:** If you were Gretchen, which method would you use in order to report the highest profits in 2017 and 2018 combined?

P 9-5 LO 2 LO 3

Acquisition of an Asset

Ray's Printing Company purchased a new printing press. The invoice price was $184,250. The company paid for the press within 10 days, so it was allowed a 2% discount. The freight cost for delivering the press was $3,000. A premium of $1,200 was paid for a special insurance policy to cover the

transportation of the press. The company spent $3,400 to install the press and an additional $655 in start-up costs to get the press ready for regular production.

Required:

1. At what amount should the press be recorded as an asset?
2. What additional information must be known before the depreciation expense for the first year of operation of the new press can be computed?
3. **Interpretive Question:** What criterion is used to determine whether the start-up costs of $655 are included in the cost of the asset? Explain.

P 9-6 LO 2 LO 3

Purchase of Multiple Assets for a Single Sum

On April 1, 2018, Cajun Company paid $210,000 in cash to purchase land, a building, and equipment. The appraised fair market values of the assets were as follows: land, $70,000; building, $120,000; and equipment, $60,000. The company incurred legal fees of $8,000 to determine that it would have a clear title to the land. Before the facilities could be used, Cajun had to spend $4,000 to grade and landscape the land, $3,500 to put the equipment in working order, and $14,000 to renovate the building. The equipment was then estimated to have a useful life of seven years with no salvage value, and the building would have a useful life of 20 years with a net salvage value of $10,000. Both the equipment and the building are to be depreciated on a straight-line basis. The company is on a calendar-year reporting basis.

Required:

1. Allocate the single purchase price to the individual assets acquired.
2. Prepare the journal entry to acquire the land, building, and equipment.
3. Prepare the journal entry to record the title search, landscape, put the equipment in working order, and renovate the building.
4. Prepare the journal entries on December 31, 2018, to record the depreciation on the building and the equipment.

P 9-7 LO 2 LO 3

Basket Purchase and Partial-Year Depreciation

On April 1, 2018, Rosenberg Company purchased for $200,000 a tract of land on which was located a fully equipped factory. The following information was compiled regarding this purchase:

	Market Value	Seller's Carrying Amount
Land	$ 75,000	$ 30,000
Building	100,000	75,000
Equipment	50,000	60,000
Totals	$225,000	$165,000

Required:

1. Prepare the journal entry to record the purchase of these assets.
2. Assume that the building is depreciated on a straight-line basis over a remaining life of 20 years and the equipment is depreciated on a straight-line basis over five years. Neither the building nor the equipment is expected to have any salvage value. Compute the depreciation expense for 2018 assuming the assets were placed in service immediately upon acquisition.

P 9-8 LO 3 LO 4 LO 5

Changes in Depreciation Estimates and Capitalization of Expenditures

Ironic Metal Products, Inc., acquired a machine on January 2, 2017, for $76,600. The useful life of the machine was estimated to be eight years with a salvage value of $4,600. Depreciation is recorded on December 31 of each year using the double-declining-balance method.

At the beginning of 2019, the company estimated the remaining useful life of the machine to be four years and changed the estimated salvage value from $4,600 to $2,600. On January 2, 2020, major repairs on the machine cost the company $34,000. The repairs added two years to the machine's useful life and increased the salvage value to $3,000.

Required:

1. Prepare journal entries to record:
   a. The purchase of the machine
   b. Annual depreciation expense for the years 2017 and 2018
   c. Depreciation in 2019 under the revised estimates of useful life and salvage value
   d. The expenditure for major repairs in 2020
   e. Depreciation expense for 2020
2. Compute the carrying amount of the machine at the end of 2020.

P 9-9

LO 3 LO 4 LO 5

Unifying Concepts: Accounting for Natural Resources

Forest Products, Inc., buys and develops natural resources for profit. Since 2017, it has had the following activities:

1/1/17 Purchased for $800,000 a tract of timber estimated to contain 1,600,000 board feet of lumber.
1/1/18 Purchased for $600,000 a silver mine estimated to contain 30,000 tons of silver ore.
7/1/18 Purchased for $60,000 a uranium mine estimated to contain 5,000 tons of uranium ore.
1/1/19 Purchased for $500,000 an oil well estimated to contain 100,000 barrels of oil.

Required:

1. Provide the necessary journal entries to account for the following:
   a. The purchase of these assets
   b. The depletion expense for 2019 on all four assets, assuming that the following were extracted:
      (1) 200,000 board feet of lumber
      (2) 5,000 tons of silver
      (3) 1,000 tons of uranium
      (4) 10,000 barrels of oil
2. Assume that on January 1, 2020, after 20,000 tons of silver had been mined, engineers' estimates revealed that only 4,000 tons of silver remained. Record the depletion expense for 2020 assuming that 2,000 tons were mined.
3. Compute the carrying amount of all four assets as of December 31, 2020, assuming that the total extracted to date is:
   a. Timber tract, 800,000 board feet
   b. Silver mine, 22,000 tons [only 2,000 tons are left per part (2)]
   c. Uranium mine, 3,000 tons
   d. Oil well, 80,000 barrels

P 9-10

LO 6

Asset Impairment

Delta Company owns plant and equipment on the island of Lagos. The cost and carrying amount of the building are £2,800,000 and £2,400,000, respectively. Until this year, the market value of the factory was £7 million. However, a new dictator just came to power and declared martial law. As a result of the changed political status, the future cash inflows from the use of the factory are expected to be greatly reduced. Delta now believes that the output from the factory will generate cash inflows for the next 20 years, as measured by the value in use of £2,000,000. In addition, the market value of the factory building is now just £1,300,000. Delta is not sure how to account for the sudden impairment in value.

Required:

1. Explain how to decide whether an impairment loss is to be recognized.
2. Prepare the necessary journal entry, if any, to account for an impairment in the value of the factory.

P 9-11

LO 2 LO 3 LO 8

Acquisition, Depreciation, and Disposal of Assets

On January 2, 2018, Dale Company purchased a building and land for $580,000. The most recent appraisal values for the building and the land are $420,000 and $180,000, respectively. The building has an estimated useful life of 25 years and a salvage value of $30,000.

Required:

1. Assuming cash transactions and straight-line depreciation, prepare journal entries to record:

a. Purchase of the building and land on January 2, 2018
b. Depreciation expense on December 31, 2018

2. Assume that after four years the property (land and building) was sold for $470,000. Prepare the journal entry to record the sale.

P 9-12

LO 2 LO 3 LO 8

Acquisition, Depreciation, and Sale of an Asset

On January 2, 2017, Union Oil Company purchased a new airplane. The following costs are related to the purchase:

Airplane, base price	$112,000
Cash discount	3,000
Sales tax	4,000
Delivery charges	1,000

Required:

1. Prepare the journal entry to record the payment of these items on January 2, 2017.
2. Ignore your answer to part (1) and assume that the airplane cost $90,000 and has an expected useful life of five years or 1,500 hours. The estimated salvage value is $3,000. Using units-of-production depreciation and assuming that 300 hours are flown in 2018, calculate the amount of depreciation expense to be recorded for the second year.
3. Ignore the information in parts (1) and (2) and assume that the airplane costs $90,000, that its expected useful life is five years, and that its estimated salvage value is $5,000. The company now uses the straight-line depreciation method. On January 1, 2020, the following balances are in the related accounts:

Airplane	$ 90,000
Accumulated Depreciation, Airplane	51,000

Prepare the necessary journal entries to record the sale of this airplane on July 1, 2020, for $40,000.

P 9-13

LO 2 LO 3 LO 8

Acquisition, Depreciation, and Sale of an Asset

On July 1, 2017, Philip Ward bought a used pickup truck at a cost of $5,300 for use in his business. On the same day, Ward had the truck painted blue and white (his company's colors) at a cost of $800. Ward estimates the life of the truck to be three years or 40,000 miles. He further estimates that the truck will have a $450 scrap value at the end of its life, but that it will also cost him $50 to transfer the truck to the junkyard.

Required:

1. Record the following journal entries:
   a. July 1, 2017: Paid all bills pertaining to the truck. (No previous entries have been recorded concerning these bills.)
   b. December 31, 2017: The depreciation expense for the year, using the straight-line method.
   c. December 31, 2018: The depreciation expense for 2018, again using the straight-line method.
   d. January 2, 2019: Sold the truck for $2,600 cash.
2. What would the depreciation expense for 2017 have been if the truck had been driven 8,000 miles and the units-of-production method of depreciation had been used?
3. **Interpretive Question:** In part (1d), there is a loss of $650. Why did this loss occur?

P 9-14

LO 3 LO 8

Depreciation Calculations

On January 1, 2017, Clauser Company purchased a $79,000 machine. The estimated life of the machine was four years, and the estimated salvage value was $4,000. The machine had an estimated useful life in productive output of 90,000 units. Actual output for the first two years was: 2017, 25,000 units; 2018, 18,000 units.

Required:

1. Compute the amount of depreciation expense for the first year, using each of the following methods:
   a. Straight-line
   b. Units-of-production

2. What was the carrying amount of the machine at the end of the first year, assuming that straight-line depreciation was used?
3. If the machine is sold at the end of the third year for $20,000, how much should the company report as a gain or loss (assuming straight-line depreciation)?

P 9-15 LO 9

Accounting for Intangible Assets (Goodwill)

On January 1, 2018, InterGalactic Company purchased the following assets and liabilities from Immensity Company for $325,000:

	Carrying Amount	Fair Market Value
Inventory	$ 60,000	$ 70,000
Building	100,000	130,000
Land	70,000	90,000
Accounts receivable	30,000	30,000
Accounts payable	(15,000)	(15,000)

Required:

Prepare a journal entry to record the purchase of Immensity by InterGalactic.

P 9-16 LO 9

Accounting for Goodwill

On January 1, 2018, Fishing Creek Company purchased Skull Valley Technologies for $8,800,000 cash. The carrying amount and fair value of Skull Valley's assets as of the date of the acquisition are listed below.

	Carrying Amount	Market Value
Cash	$ 100,000	$ 100,000
Accounts receivable	500,000	500,000
Inventory	950,000	1,200,000
Property, plant, and equipment	1,500,000	1,900,000
Trademark	0	2,000,000
Totals	$3,050,000	$5,700,000

In addition, Skull Valley had liabilities totaling $4,000,000 at the time of the acquisition.

Required:

1. At what amount will Skull Valley's trademark be recorded on the books of Fishing Creek, the acquiring company?
2. How much goodwill will be recorded as part of this acquisition?
3. **Interpretive Question:** What was Skull Valley's recorded stockholders' equity immediately before the acquisition? Under what circumstances does stockholders' equity yield a poor measure of the fair value of a company?

P 9-17 LO 7

Calculating and Commenting on Asset Turnover

Champagne Ltd. and Ardenne Ltd., two corporations of roughly the same size, are both involved in the manufacture of in-line skates. Each company depreciates its plant assets using the straight-line approach. An investigation of their financial statements reveals the following information.

	Champagne Ltd.	Ardenne Ltd.
Net income	$ 200,000	$225,000
Sales revenue	620,000	555,000
Average total assets	1,000,000	750,000
Average plant assets	750,000	400,000

Required:

1. For each company, calculate the asset turnover ratio.
2. Based on your calculations in part (1), comment on the relative efficiency of the two companies in using their assets to generate sales and produce net income.

P 9-18

LO 10

Fixed Asset Turnover Ratio

Waystation Company reported the following asset values in 2017 and 2018:

	2018	2017
Cash	$ 40,000	$ 30,000
Accounts receivable	500,000	400,000
Inventory	700,000	500,000
Land	300,000	200,000
Buildings	800,000	600,000
Equipment	400,000	300,000

In addition, Waystation had sales of $4,000,000 in 2018. Cost of goods sold for the year was $2,500,000.

As of the end of 2017, the fair value of Waystation's total assets was $2,500,000. Of the excess of fair value over carrying amount, $50,000 resulted because the fair value of Waystation's inventory was greater than its recorded carrying amount. As of the end of 2018, the fair value of Waystation's total assets was $3,500,000. As of December 31, 2018, the fair value of Waystation's inventory was $100,000 greater than the inventory's recorded carrying amount.

Required:

1. Compute Waystation's fixed asset turnover ratio for 2018.
2. Using the fair value of fixed assets instead of the carrying amount of fixed assets, recompute Waystation's fixed asset turnover ratio for 2018. State any assumptions that you make.
3. **Interpretive Question:** Waystation's primary competitor is Handy Corner. Handy Corner's fixed asset turnover ratio for 2018, based on publicly available information, is 2.8 times. Is Waystation more or less efficient at using its fixed assets than Handy Corner? Explain your answer.

ANALYTICAL ASSIGNMENTS

AA 9-1

Discussion

Intangible Assets

Renford Company owns two restaurants. One, located in Tacoma, was purchased from a previous owner and the other, located in Seattle, was built by Renford. The Seattle restaurant was built nine years ago. The Tacoma restaurant was purchased last year and has goodwill of $550,000 on the books. As it turns out, the Seattle restaurant does twice as much business as the Tacoma restaurant and is much more profitable. The Seattle restaurant is in a prime location, and business keeps increasing each year. The Tacoma restaurant does about the same amount of business each year, and it doesn't look as if it will ever do any better. Does it make sense to you to have goodwill on the books of the less profitable restaurant? Should Renford record goodwill on the books of the Seattle restaurant, or should it write off the goodwill on the Tacoma restaurant's books?

AA 9-2

Real Company Analysis

TSMC

Suppose that TSMC provides the following information in the notes to its financial statements relating to its use of the straight-line method of depreciation.

> *Property, Plant and Equipment, Assets Leased to Others and Idle Assets*–Depreciation is computed using the straight-line method over the following estimated service lives: land improvements – 20 years; buildings – 5 to 20 years; machinery and equipment – 2 to 5 years; office equipment – 3 to 15 years; and leased assets – 20 years

TSMC also provides information relating to the balances in its individual property, plant, and equipment accounts (see Appendix A). In very general terms, can you estimate how old is the company's property, plant, and equipment? Provide support for your answer.

EXPANDED MATERIAL

Key Terms & Concepts

- commercial substance, 389
- revaluation model, 391

Put it on Paper — DISCUSSION QUESTIONS

18. A company may dispose of property, plant, and equipment by exchanging it for another asset; can any gain or loss on the exchange be recognized? Why?

19. IFRS allows for the choice between cost model and revaluation model for measuring the value of property, plant, and equipment. Why do some countries allow companies to apply only the cost model?

EXERCISES

E 9-25 LO 11

Recording Exchange of Property, Plant, and Equipment

Assume that Tallinn Company exchanged one used Machine A plus cash of NT$100,000 for Machine B. Machine A has a carrying value of NT$480,000 (cost NT$1,000,000 less accumulated depreciation of NT$520,000), and a fair value of NT$250,000. Suppose the exchange has commercial substance. Help Tallinn Company to record the exchange.

E 9-26 LO 11

Recording Exchange of Property, Plant, and Equipment

Assume that Helsinri Company exchanged one used truck plus cash of NT$50,000 for another type of truck. The carrying amount of the old truck is NT$300,000 (cost of NT$800,000 less accumulated depreciation of NT$500,000), and a fair value of NT$350,000. Suppose the exchange has commercial substance. Help Helsinri Company to record the exchange.

E 9-27 LO 12

Determining the Revaluation Surplus

An independent appraiser determines that the fair value of a set of machines in Riga Company is €40,000 at the end of 2018. At that time, the carrying amount of these machines is €20,000 (cost: €70,000, accumulated depreciation: €50,000), with a useful life of 10 years, and residual value of €5,000. Shortly, Riga Company decides to apply revaluation to the machine. Help Riga Company to record the revaluation surplus.

E 9-28 LO 12

Revaluation of Plant Assets

Merody Company acquired equipment on January 1, 2017, for €60,000. This equipment is being depreciated on a straight-line basis over its six-year useful life. There is no residual value at the end of the 6-year period. The appraised value of the equipment approximates the carrying amount at December 31, 2017. On December 31, 2018, the fair value of the equipment is determined to be €50,000. Merody decides to elect to value this class of equipment using revaluation model.

Required:

1. Prepare the journal entries for 2017 related to the equipment.
2. Prepare the journal entries for 2018 related to the equipment.