How Much for a Ride to the Beach?

It's spring break. Your plane has landed, you've finally found your bags, and you're dying to hit the beach—but first you need a “vehicular unit” to get you there. As you turn away from baggage claim, you see a long row of rental agency booths. Many are names you are familiar with—Hertz, Avis, and Budget. But a booth at the far end catches your eye—Rent-A-Wreck. Now there's a company making a clear statement!

Any company that relies on equipment to generate revenues must make decisions about what kind of equipment to buy, how long to keep it, and how vigorously to maintain it. Rent-A-Wreck has decided to rent used rather than new cars and trucks. It rents these vehicles across the United States, Europe, and Asia. While the big-name agencies push vehicles with that “new car smell,” Rent-A-Wreck competes on price.

Rent-A-Wreck's message is simple: Rent a used car and save some cash. It's not a message that appeals to everyone. If you're a marketing executive wanting to impress a big client, you probably don't want to pull up in a Rent-A-Wreck car. But if you want to get from point A to point B for the minimum cash per mile, then Rent-A-Wreck is playing your tune. The company's message seems to be getting across to the right clientele. Revenues have increased significantly.

When you rent a car from Rent-A-Wreck, you are renting from an independent business person. This owner has paid a “franchise fee” for the right to use the Rent-A-Wreck name. In order to gain a franchise, he or she must meet financial and other criteria, and must agree to run the rental agency according to rules prescribed by Rent-A-Wreck. Some of these rules require that each franchise maintain its cars in a reasonable fashion. This ensures that, though you won't be cruising down Daytona Beach's Atlantic Avenue in a Mercedes convertible, you can be reasonably assured that you won't be calling a towtruck.
Learning Objectives

After studying this chapter, you should be able to:

[1] Describe how the historical cost principle applies to plant assets.
[2] Explain the concept of depreciation and how to compute it.
[3] Distinguish between revenue and capital expenditures, and explain the entries for each.
[6] Explain the basic issues related to accounting for intangible assets.
[7] Indicate how plant assets, natural resources, and intangible assets are reported.
The accounting for long-term assets has important implications for a company's reported results. In this chapter, we explain the application of the historical cost principle of accounting to property, plant, and equipment, such as Rent-A-Wreck vehicles, as well as to natural resources and intangible assets such as the “Rent-A-Wreck” trademark. We also describe the methods that companies may use to allocate an asset's cost over its useful life. In addition, we discuss the accounting for expenditures incurred during the useful life of assets, such as the cost of replacing tires and brake pads on rental cars.

The content and organization of Chapter 10 are as follows.

---

**PLANT ASSETS**

**LEARNING OBJECTIVE 1**

Describe how the historical cost principle applies to plant assets.

Plant assets are resources that have three characteristics. They have a physical substance (a definite size and shape), are used in the operations of a business, and are not intended for sale to customers. They are also called property, plant, and equipment; plant and equipment; and fixed assets. These assets are expected to be of use to the company for a number of years. Except for land, plant assets decline in service potential over their useful lives.

Because plant assets play a key role in ongoing operations, companies keep plant assets in good operating condition. They also replace worn-out or outdated plant assets, and expand productive resources as needed. Many companies have substantial investments in plant assets. Illustration 10-1 shows the percentages of plant assets in relation to total assets of companies in a number of industries.
Determined the Cost of Plant Assets

The historical cost principle requires that companies record plant assets at cost. Thus, Rent-A-Wreck records its vehicles at cost. **Cost consists of all expenditures necessary to acquire the asset and make it ready for its intended use.** For example, the cost of factory machinery includes the purchase price, freight costs paid by the purchaser, and installation costs. Once cost is established, the company uses that amount as the basis of accounting for the plant asset over its useful life.

In the following sections, we explain the application of the historical cost principle to each of the major classes of plant assets.

**LAND**

Companies often use **land** as a building site for a manufacturing plant or office building. The cost of land includes (1) the cash purchase price, (2) closing costs such as title and attorney's fees, (3) real estate brokers' commissions, and (4) accrued property taxes and other liens assumed by the purchaser. For example, if the cash price is $50,000 and the purchaser agrees to pay accrued taxes of $5,000, the cost of the land is $55,000.

Companies record as debits (increases) to the Land account all necessary costs incurred to make land ready for its intended use. When a company acquires vacant land, these costs include expenditures for clearing, draining, filling, and grading. Sometimes the land has a building on it that must be removed before construction of a new building. In this case, the company debits to the Land account all demolition and removal costs, less any proceeds from salvaged materials.

To illustrate, assume that Hayes Company acquires real estate at a cash cost of $100,000. The property contains an old warehouse that is razed at a net cost of $6,000 ($7,500 in costs less $1,500 proceeds from salvaged materials). Additional expenditures are the attorney's fee, $1,000, and the real estate broker's commission, $8,000. The cost of the land is $115,000, computed as shown in Illustration 10-2.

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash price of property</td>
<td>$ 100,000</td>
</tr>
<tr>
<td>Net removal cost of warehouse ($7,500 − $1,500)</td>
<td>6,000</td>
</tr>
<tr>
<td>Attorney's fee</td>
<td>1,000</td>
</tr>
<tr>
<td>Real estate broker’s commission</td>
<td>8,000</td>
</tr>
<tr>
<td><strong>Cost of land</strong></td>
<td><strong>$115,000</strong></td>
</tr>
</tbody>
</table>
When Hayes records the acquisition, it debits Land for $115,000 and credits Cash for $115,000.

**Helpful Hint**
Management's intended use is important in applying the historical cost principle.

**LAND IMPROVEMENTS**

**Land improvements** are structural additions made to land. Examples are driveways, parking lots, fences, landscaping, and underground sprinklers. The cost of land improvements includes all expenditures necessary to make the improvements ready for their intended use. For example, the cost of a new parking lot for Home Depot includes the amount paid for paving, fencing, and lighting. Thus, Home Depot debits to Land Improvements the total of all of these costs.

Land improvements have limited useful lives, and their maintenance and replacement are the responsibility of the company. As a result, companies expense (depreciate) the cost of land improvements over their useful lives.

**BUILDINGS**

**Buildings** are facilities used in operations, such as stores, offices, factories, warehouses, and airplane hangars. Companies debit to the Buildings account all necessary expenditures related to the purchase or construction of a building. When a building is purchased, such costs include the purchase price, closing costs (attorney's fees, title insurance, etc.), and real estate broker's commission. Costs to make the building ready for its intended use include expenditures for remodeling and replacing or repairing the roof, floors, electrical wiring, and plumbing. When a new building is constructed, cost consists of the contract price plus payments for architects' fees, building permits, and excavation costs.

In addition, companies charge certain interest costs to the Buildings account. Interest costs incurred to finance the project are included in the cost of the building when a significant period of time is required to get the building ready for use. In these circumstances, interest costs are considered as necessary as materials and labor. However, the inclusion of interest costs in the cost of a constructed building is limited to the construction period. When construction has been completed, the company records subsequent interest payments on funds borrowed to finance the construction as debits (increases) to Interest Expense.

**EQUIPMENT**

**Equipment** includes assets used in operations, such as store check-out counters, office furniture, factory machinery, delivery trucks, and airplanes. The cost of equipment, such as Rent-A-Wreck vehicles, consists of the cash purchase price, sales taxes, freight charges, and insurance during transit paid by the purchaser. It also includes expenditures required in assembling, installing, and testing the unit. However, Rent-A-Wreck does not include motor vehicle licenses and accident insurance on company vehicles in the cost of equipment. These costs represent annual recurring expenditures and do not benefit future periods. Thus, they are treated as expenses as they are incurred.

To illustrate, assume Merten Company purchases factory machinery at a cash price of $50,000. Related expenditures are for sales taxes $3,000, insurance during shipping $500, and installation and testing $1,000. The cost of the factory machinery is $54,500, computed in Illustration 10-3.
Merten makes the following summary entry to record the purchase and related expenditures.

Illustration 10-3
Computation of cost of factory machinery

<table>
<thead>
<tr>
<th>Equipment</th>
<th>54,500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>54,500</td>
</tr>
<tr>
<td><strong>(To record purchase of factory machine)</strong></td>
<td></td>
</tr>
</tbody>
</table>

For another example, assume that Lenard Company purchases a delivery truck at a cash price of $22,000. Related expenditures consist of sales taxes $1,320, painting and lettering $500, motor vehicle license $80, and a three-year accident insurance policy $1,600. The cost of the delivery truck is $23,820, computed as follows.

Illustration 10-4
Computation of cost of delivery truck

<table>
<thead>
<tr>
<th>Equipment</th>
<th>23,820</th>
</tr>
</thead>
<tbody>
<tr>
<td>License Expense</td>
<td>80</td>
</tr>
<tr>
<td>Prepaid Insurance</td>
<td>1,600</td>
</tr>
<tr>
<td>Cash</td>
<td>25,500</td>
</tr>
<tr>
<td><strong>(To record purchase of delivery truck and related expenditures)</strong></td>
<td></td>
</tr>
</tbody>
</table>

ACCOUNTING ACROSS THE ORGANIZATION

Many U.S. Firms Use Leases
Leasing is big business for U.S. companies. For example, business investment in equipment in a recent year totaled $709 billion. Leasing accounted for about 31% of all business investment ($218 billion).

Who does the most leasing? Interestingly, major banks such as Continental Bank, J.P. Morgan Leasing, and US Bancorp Equipment Finance are the major lessors. Also, many companies have established separate leasing companies, such as Boeing Capital Corporation, Dell Financial Services, and John Deere Capital Corporation. And, as an excellent example of the magnitude of leasing, leased planes account for nearly 40% of the U.S. fleet of commercial airlines. In addition, leasing is becoming increasingly common in the hotel industry. Marriott, Hilton, and InterContinental are increasingly choosing to lease hotels that are owned by someone else.

Why might airline managers choose to lease rather than purchase their planes?

**DO IT!**

**Cost of Plant Assets**

Assume that Drummond Heating and Cooling Co. purchases a delivery truck for $15,000 cash, plus sales taxes of $900 and delivery costs of $500. The buyer also pays $200 for painting and lettering, $600 for an annual insurance policy, and $80 for a motor vehicle license. Explain how each of these costs would be accounted for.

**Action Plan**

✓ Identify expenditures made in order to get delivery equipment ready for its intended use.
✓ Treat operating costs as expenses.

**Solution**

The first four payments ($15,000, $900, $500, and $200) are expenditures necessary to make the truck ready for its intended use. Thus, the cost of the truck is $16,600. The payments for insurance and the license are operating costs and therefore are expensed.

Related exercise material: BE10-1, BE10-2, E10-1, E10-2, E10-3, and DO IT! 10-1.

**Depreciation**

**LEARNING OBJECTIVE 2**

**Interactive Tutorial**

Explain the concept of depreciation and how to compute it.
As explained in Chapter 3, depreciation is the process of allocating to expense the cost of a plant asset over its useful (service) life in a rational and systematic manner. Cost allocation enables companies to properly match expenses with revenues in accordance with the expense recognition principle, as shown in Illustration 10-5.

Illustration 10-5
Depreciation as a cost allocation concept
It is important to understand that depreciation is a process of cost allocation. It is not a process of asset valuation. No attempt is made to measure the change in an asset's fair value during ownership. So, the book value (cost less accumulated depreciation) of a plant asset may be quite different from its fair value. In fact, if an asset is fully depreciated, it can have a zero book value but still have a significant fair value.

Depreciation applies to three classes of plant assets: land improvements, buildings, and equipment. Each asset in these classes is considered to be a depreciable asset. Why? Because the usefulness to the company and revenue-producing ability of each asset will decline over the asset's useful life. Depreciation does not apply to land because its usefulness and revenue-producing ability generally remain intact over time. In fact, in many cases, the usefulness of land is greater over time because of the scarcity of good land sites. Thus, land is not a depreciable asset.

During a depreciable asset's useful life, its revenue-producing ability declines because of wear and tear. A delivery truck that has been driven 100,000 miles will be less useful to a company than one driven only 800 miles.

Revenue-producing ability may also decline because of obsolescence. Obsolescence is the process of becoming out of date before the asset physically wears out. For example, major airlines moved from Chicago's Midway Airport to Chicago-O'Hare International Airport because Midway's runways were too short for jumbo jets. Similarly, many companies replace their computers long before they originally planned to do so because improvements in new computing technology make the old computers obsolete.

Recognizing depreciation on an asset does not result in an accumulation of cash for replacement of the asset. The balance in Accumulated Depreciation represents the total amount of the asset's cost that the company has charged to expense. It is not a cash fund.

Note that the concept of depreciation is consistent with the going-concern assumption. The going-concern assumption states that the company will continue in operation for the foreseeable future. If a company does not use a going-concern assumption, then plant assets should be stated at their fair value. In that case, depreciation of these assets is not needed.

Ethics Note
When a business is acquired, proper allocation of the purchase price to various asset classes is important
since different depreciation treatments can materially affect income. For example, buildings are depreciated, but land is not.

FACTORS IN COMPUTING DEPRECIATION
Three factors affect the computation of depreciation, as shown in Illustration 10-6.

Illustration 10-6
Three factors in computing depreciation

1. **Cost.**
   Earlier, we explained the issues affecting the cost of a depreciable asset. Recall that companies record plant assets at cost, in accordance with the historical cost principle.

2. **Useful life.**
   **Useful life** is an estimate of the expected productive life, also called
service life, of the asset for its owner. Useful life may be expressed in terms of time, units of activity (such as machine hours), or units of output. Useful life is an estimate. In making the estimate, management considers such factors as the intended use of the asset, its expected repair and maintenance, and its vulnerability to obsolescence. Past experience with similar assets is often helpful in deciding on expected useful life. We might reasonably expect Rent-A-Wreck and Avis to use different estimated useful lives for their
3. **Salvage value.**

   **Salvage value** is an estimate of the asset's value at the end of its useful life. This value may be based on the asset's worth as scrap or on its expected trade-in value. Like useful life, salvage value is an estimate. In making the estimate, management considers how it plans to dispose of the asset and its experience with similar assets.

---

**Helpful Hint**

Depreciation expense is reported on the income statement. Accumulated depreciation is reported on the balance sheet as a deduction from plant assets.

**Alternative Terminology**

Another term sometimes used for salvage value is *residual value*.

---

**DEPRECIATION METHODS**

Depreciation is generally computed using one of the following methods:

1. **Straight-line**
2. **Units-of-activity**
3. Declining-balance

Each method is acceptable under generally accepted accounting principles. Management selects the method(s) it believes to be appropriate. The objective is to select the method that best measures an asset's contribution to revenue over its useful life. Once a company chooses a method, it should apply it consistently over the useful life of the asset. Consistency enhances the comparability of financial statements. Depreciation affects the balance sheet through accumulated depreciation and the income statement through depreciation expense.

We will compare the three depreciation methods using the following data for a small delivery truck purchased by Barb's Florists on January 1, 2014.

<table>
<thead>
<tr>
<th>Cost</th>
<th>$13,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expected salvage value</td>
<td>$ 1,000</td>
</tr>
<tr>
<td>Estimated useful life in years</td>
<td>5</td>
</tr>
<tr>
<td>Estimated useful life in miles</td>
<td>100,000</td>
</tr>
</tbody>
</table>

Illustration 10-7
Delivery truck data

Illustration 10-8 shows the use of the primary depreciation methods in a sample of the largest companies in the United States.

Illustration 10-8
Use of depreciation methods in large U.S. companies

STRAIGHT-LINE

Under the **straight-line method**, companies expense the same amount of depreciation for each year of the asset's useful life. It is measured solely by the passage of time.

To compute depreciation expense under the straight-line method, companies need to determine depreciable cost. **Depreciable cost** is the cost of the asset less its salvage value. It represents the total amount subject to depreciation. Under the straight-line method, to determine annual depreciation expense, we divide depreciable cost by the asset's useful life. Illustration 10-9 shows the computation of the first year's depreciation expense for Barb's Florists.
Alternatively, we also can compute an annual rate of depreciation. In this case, the rate is 20% \( (100\% \div 5 \text{ years}) \). When a company uses an annual straight-line rate, it applies the percentage rate to the depreciable cost of the asset. Illustration 10-10 shows a depreciation schedule using an annual rate.

Illustration 10-10
Straight-line depreciation schedule

Note that the depreciation expense of $2,400 is the same each year. The book value (computed as cost minus accumulated depreciation) at the end of the useful life is equal to the expected $1,000 salvage value.

What happens to these computations for an asset purchased during the year, rather than on January 1? In that case, it is necessary to prorate the annual depreciation on a time basis. If Barb's Florists had purchased the delivery truck on April 1, 2014, the company would own the truck for nine months of the first year (April-December). Thus, depreciation for 2014 would be $1,800 \( (\$ 12,000 \times 20\% \times 9 / 12 \text{ of a year}) \).

The straight-line method predominates in practice. Such large companies as Campbell Soup, Marriott, and General Mills use the straight-line method. It is simple to apply, and it matches expenses with revenues when the use of the asset is reasonably uniform throughout the service life.

UNITS-OF-ACTIVITY

Under the units-of-activity method, useful life is expressed in terms of the total units of production or use expected from the asset, rather than as a time period. The units-of-activity method is ideally suited to factory machinery. Manufacturing companies can measure production in units of output or in machine hours. This method can also be used for such assets as delivery equipment (miles driven) and airplanes (hours in use). The units-of-activity method is generally not suitable for buildings or furniture because depreciation for these assets is more a function of time than of use.

To use this method, companies estimate the total units of activity for the entire useful life, and then divide these units into depreciable cost. The resulting number represents the depreciable cost per unit. The
depreciable cost per unit is then applied to the units of activity during the year to determine the annual depreciation expense.

To illustrate, assume that Barb's Florists drives its delivery truck 15,000 miles in the first year. Illustration 10-11 shows the units-of-activity formula and the computation of the first year's depreciation expense.

\[
\text{Depreciable Cost} \div \text{Total Units of Activity} = \text{Depreciable Cost per Unit}
\]

\[
\begin{align*}
$12,000 & \div 100,000 \text{ miles} = $0.12 \\
\end{align*}
\]

\[
\text{Depreciable Cost per Unit} \times \text{Units of Activity during the Year} = \text{Annual Depreciation Expense}
\]

\[
\begin{align*}
$0.12 & \times 15,000 \text{ miles} = $1,800 \\
\end{align*}
\]

Illustration 10-11
Formula for units-of-activity method

The units-of-activity depreciation schedule, using assumed mileage, is as follows.

<table>
<thead>
<tr>
<th>Year</th>
<th>Units of Activity</th>
<th>Depreciable Cost/Unit</th>
<th>Annual Depreciation Expense</th>
<th>Accumulated Depreciation</th>
<th>Book Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>15,000</td>
<td>$0.12</td>
<td>$1,800</td>
<td>$1,800</td>
<td>$11,200*</td>
</tr>
<tr>
<td>2015</td>
<td>30,000</td>
<td>0.12</td>
<td>3,600</td>
<td>5,400</td>
<td>7,600</td>
</tr>
<tr>
<td>2016</td>
<td>20,000</td>
<td>0.12</td>
<td>2,400</td>
<td>7,800</td>
<td>5,200</td>
</tr>
<tr>
<td>2017</td>
<td>25,000</td>
<td>0.12</td>
<td>3,000</td>
<td>10,800</td>
<td>2,200</td>
</tr>
<tr>
<td>2018</td>
<td>10,000</td>
<td>0.12</td>
<td>1,200</td>
<td>12,000</td>
<td>1,000</td>
</tr>
</tbody>
</table>

*(\$13,000 – \$1,800).

Illustration 10-12
Units-of-activity depreciation schedule

This method is easy to apply for assets purchased mid-year. In such a case, the company computes the depreciation using the productivity of the asset for the partial year.

The units-of-activity method is not nearly as popular as the straight-line method (see Illustration 10-8) primarily because it is often difficult for companies to reasonably estimate total activity. However, some very large companies, such as Chevron and Boise Cascade (a forestry company), do use this method. When the productivity of an asset varies significantly from one period to another, the units-of-activity method results in the best matching of expenses with revenues.

Alternative Terminology
Another term often used is the units-of-production method.

Helpful Hint
Under any method, depreciation stops when the asset's book value equals expected salvage value.

**DECLINING-BALANCE**

The **declining-balance method** produces a decreasing annual depreciation expense over the asset's useful life. The method is so named because the periodic depreciation is based on a **declining book value** (cost less accumulated depreciation) of the asset. With this method, companies compute annual depreciation expense by multiplying the book value at the beginning of the year by the declining-balance depreciation rate. The **depreciation rate remains constant from year to year, but the book value to which the rate is applied declines each year.**

At the beginning of the first year, book value is the cost of the asset. This is because the balance in accumulated depreciation at the beginning of the asset's useful life is zero. In subsequent years, book value is the difference between cost and accumulated depreciation to date. Unlike the other depreciation methods, the declining-balance method does not use depreciable cost in computing annual depreciation expense. That is, **it ignores salvage value in determining the amount to which the declining-balance rate is applied.** Salvage value, however, does limit the total depreciation that can be taken. Depreciation stops when the asset's book value equals expected salvage value.

A common declining-balance rate is double the straight-line rate. The method is often called the **double-declining-balance method.** If Barb's Florists uses the double-declining-balance method, it uses a depreciation rate of \( \frac{2 \times \text{the straight-line rate of } 20\%}{2} = 40\% \). Illustration 10-13 shows the declining-balance formula and the computation of the first year's depreciation on the delivery truck.

<table>
<thead>
<tr>
<th>Book Value at Beginning of Year</th>
<th>Declining-Balance Rate</th>
<th>Annual Depreciation Expense</th>
</tr>
</thead>
<tbody>
<tr>
<td>$13,000</td>
<td>40%</td>
<td>$5,200</td>
</tr>
</tbody>
</table>

**Illustration 10-13**

Formula for declining-balance method

The depreciation schedule under this method is as follows.

<table>
<thead>
<tr>
<th>Year</th>
<th>Book Value Beginning of Year</th>
<th>Depreciation Rate</th>
<th>Annual Depreciation Expense</th>
<th>Accumulated Depreciation</th>
<th>Book Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>$13,000</td>
<td>40%</td>
<td>$5,200</td>
<td>$5,200</td>
<td>$7,800</td>
</tr>
<tr>
<td>2015</td>
<td>7,800</td>
<td>40%</td>
<td>3,120</td>
<td>8,320</td>
<td>4,680</td>
</tr>
<tr>
<td>2016</td>
<td>4,680</td>
<td>40%</td>
<td>1,872</td>
<td>10,192</td>
<td>2,808</td>
</tr>
<tr>
<td>2017</td>
<td>2,808</td>
<td>40%</td>
<td>1,123</td>
<td>11,315</td>
<td>1,685</td>
</tr>
<tr>
<td>2018</td>
<td>1,685</td>
<td>40%</td>
<td>685*</td>
<td>12,000</td>
<td>1,000</td>
</tr>
</tbody>
</table>

*Computation of $674 ($1,685 \times 40\%) is adjusted to $685 in order for book value to equal salvage value.

**Illustration 10-14**

Double-declining-balance depreciation schedule

The delivery equipment is 69% depreciated \( \left( \frac{8,320}{12,000} \right) \) at the end of the second year. Under the straight-line method, the truck would be depreciated 40% \( \left( \frac{4,800}{12,000} \right) \) at that time. Because the
The declining-balance method produces higher depreciation expense in the early years than in the later years, it is considered an **accelerated-depreciation method**. The declining-balance method is compatible with the expense recognition principle. It matches the higher depreciation expense in early years with the higher benefits received in these years. It also recognizes lower depreciation expense in later years, when the asset's contribution to revenue is less. Some assets lose usefulness rapidly because of obsolescence. In these cases, the declining-balance method provides the most appropriate depreciation amount.

When a company purchases an asset during the year, it must prorate the first year's declining-balance depreciation on a time basis. For example, if Barb's Florists had purchased the truck on April 1, 2014, depreciation for 2014 would become $3,900 ( ($13,000 \times 40\% \times 9 / 12$). The book value at the beginning of 2015 is then $9,100 ( $13,000 - $3,900$), and the 2015 depreciation is $3,640 ( $9,100 \times 40\%$). Subsequent computations would follow from those amounts.

> **DO IT!**

**Straight-Line Depreciation**

On January 1, 2014, Iron Mountain Ski Corporation purchased a new snow-grooming machine for $50,000. The machine is estimated to have a 10-year life with a $2,000 salvage value. What journal entry would Iron Mountain Ski Corporation make at December 31, 2014, if it uses the straight-line method of depreciation?

**Action Plan**

✓ Calculate depreciable cost \( \text{Cost} - \text{Salvage value} \).

✓ Divide the depreciable cost by the asset's estimated useful life.

**Solution**

\[
\text{Depreciation expense} = \frac{\text{Cost} - \text{Salvage value}}{\text{Useful life}} = \frac{50,000 - 2,000}{10} = 4,800
\]

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

| Dec. | Depreciation Expense | 4,800 |
Accumulated Depreciation—Equipment
(To record annual depreciation on snow-grooming machine) 4,800

Related exercise material: BE10-3, BE10-4, E10-4, and DO IT! 10-2.

**COMPARISON OF METHODS**

Illustration 10-15 compares annual and total depreciation expense under each of the three methods for Barb's Florists.

<table>
<thead>
<tr>
<th>Year</th>
<th>Straight-Line</th>
<th>Units-of-Activity</th>
<th>Declining-Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>2,400</td>
<td>1,800</td>
<td>5,200</td>
</tr>
<tr>
<td>2015</td>
<td>2,400</td>
<td>3,600</td>
<td>3,120</td>
</tr>
<tr>
<td>2016</td>
<td>2,400</td>
<td>2,400</td>
<td>1,872</td>
</tr>
<tr>
<td>2017</td>
<td>2,400</td>
<td>3,000</td>
<td>1,123</td>
</tr>
<tr>
<td>2018</td>
<td>2,400</td>
<td>1,200</td>
<td>685</td>
</tr>
<tr>
<td></td>
<td>$12,000</td>
<td>$12,000</td>
<td>$12,000</td>
</tr>
</tbody>
</table>

Illustration 10-15
Comparison of depreciation methods

Annual depreciation varies considerably among the methods, but **total depreciation expense is the same ($12,000) for the five-year period** under all three methods. Each method is acceptable in accounting because each recognizes in a rational and systematic manner the decline in service potential of the asset. Illustration 10-16 graphs the depreciation expense pattern under each method.

![Illustration 10-16](image)

**Illustration 10-16**
Patterns of depreciation

DEPRECIATION AND INCOME TAXES
The Internal Revenue Service (IRS) allows taxpayers to deduct depreciation expense when they compute taxable income. However, the IRS does not require taxpayers to use the same depreciation method on the tax return that is used in preparing financial statements.

Many corporations use straight-line in their financial statements to maximize net income. At the same time, they use a special accelerated-depreciation method on their tax returns to minimize their income taxes. Taxpayers must use on their tax returns either the straight-line method or a special accelerated-depreciation method called the **Modified Accelerated Cost Recovery System (MACRS)**.

**REVISING PERIODIC DEPRECIATION**

Depreciation is one example of the use of estimation in the accounting process. Management should periodically review annual depreciation expense. If wear and tear or obsolescence indicate that annual depreciation estimates are inadequate or excessive, the company should change the amount of depreciation expense.

When a change in an estimate is required, the company makes the change in **current and future years. It does not change depreciation in prior periods.** The rationale is that continual restatement of prior periods would adversely affect confidence in financial statements.

To determine the new annual depreciation expense, the company first computes the asset's depreciable cost at the time of the revision. It then allocates the revised depreciable cost to the remaining useful life.

To illustrate, assume that Barb's Florists decides on January 1, 2017, to extend the useful life of the truck one year (a total life of six years) and increase its salvage value to $2,200. The company has used the straight-line method to depreciate the asset to date. Depreciation per year was $2,400 \( \left[ \left( \$13,000 - \$1,000 \right) \div 5 \right] \).

Accumulated depreciation after three years (2014-2016) is $7,200 (\( \$2,400 \times 3 \)), and book value is $5,800 (\( \$13,000 - \$7,200 \)). The new annual depreciation is $1,200, computed as shown in Illustration 10-17.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Book value, 1/1/17</td>
<td>$5,800</td>
</tr>
<tr>
<td>Less: Salvage value</td>
<td>2,200</td>
</tr>
<tr>
<td>Depreciable cost</td>
<td>$3,600</td>
</tr>
<tr>
<td>Remaining useful life</td>
<td>3 years (2017–2019)</td>
</tr>
<tr>
<td><strong>Revised annual depreciation ($3,600 ÷ 3)</strong></td>
<td>$1,200</td>
</tr>
</tbody>
</table>

**Illustration 10-17**

Revised depreciation computation

Barb's Florists makes no entry for the change in estimate. On December 31, 2017, during the preparation of adjusting entries, it records depreciation expense of $1,200. Companies must describe in the financial statements significant changes in estimates.
Revised Depreciation

Chambers Corporation purchased a piece of equipment for $36,000. It estimated a 6-year life and $6,000 salvage value. Thus, straight-line depreciation was $5,000 per year

\[
\frac{(36,000 - 6,000)}{6} = 5,000
\]

At the end of year three (before the depreciation adjustment), it estimated the new total life to be 10 years and the new salvage value to be $2,000. Compute the revised depreciation.

**Action Plan**

✓ Calculate remaining depreciable cost.
✓ Divide remaining depreciable cost by new remaining life.

**Solution**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original depreciation expense</td>
<td>$(36,000 - 6,000) ÷ 6 = 5,000</td>
</tr>
<tr>
<td>Accumulated depreciation after 2 years</td>
<td>2 × 5,000 = 10,000</td>
</tr>
<tr>
<td>Book value</td>
<td>$36,000 - $10,000 = $26,000</td>
</tr>
<tr>
<td>Book value after 2 years of depreciation</td>
<td>$26,000</td>
</tr>
<tr>
<td>Less: New salvage value</td>
<td>2,000</td>
</tr>
<tr>
<td>Depreciable cost</td>
<td>$24,000</td>
</tr>
<tr>
<td>Remaining useful life</td>
<td>8 years</td>
</tr>
<tr>
<td>Revised annual depreciation (24,000 ÷ 8)</td>
<td>$3,000</td>
</tr>
</tbody>
</table>

Related exercise material: BE10-7, E10-8, and DO IT! 10-3.

Expenditures During Useful Life

**LEARNING OBJECTIVE 3**

Distinguish between revenue and capital expenditures, and explain the entries for each.

During the useful life of a plant asset, a company may incur costs for ordinary repairs, additions, or improvements. **Ordinary repairs** are expenditures to **maintain** the operating efficiency and productive life of the unit. They usually are fairly small amounts that occur frequently. Examples are motor tune-ups and oil changes, the painting of buildings, and the replacing of worn-out gears on machinery. Companies record such repairs as debits to Maintenance and Repairs Expense as they are incurred. Because they are immediately charged as an expense against revenues, these costs are often referred to as **revenue expenditures**.
In contrast, **additions and improvements** are costs incurred to **increase** the operating efficiency, productive capacity, or useful life of a plant asset. They are usually material in amount and occur infrequently. Additions and improvements increase the company's investment in productive facilities. Companies generally debit these amounts to the plant asset affected. They are often referred to as **capital expenditures**.

Companies must use good judgment in deciding between a revenue expenditure and capital expenditure. For example, assume that Rodriguez Co. purchases a number of wastepaper baskets. Although the proper accounting would appear to be to capitalize and then depreciate these wastepaper baskets over their useful life, it would be more usual for Rodriguez to expense them immediately. This practice is justified on the basis of **materiality**. Materiality refers to the impact of an item's size on a company's financial operations. The **materiality concept** states that if an item would not make a difference in decision-making, the company does not have to follow GAAP in reporting that item.

**ANATOMY OF A FRAUD**

Bernie Ebbers was the founder and CEO of the phone company **WorldCom**. The company engaged in a series of increasingly large, debt-financed acquisitions of other companies. These acquisitions made the company grow quickly, which made the stock price increase dramatically. However, because the acquired companies all had different accounting systems, WorldCom's financial records were a mess. When WorldCom's performance started to flatten out, Bernie coerced WorldCom's accountants to engage in a number of fraudulent activities to make net income look better than it really was and thus prop up the stock price. One of these frauds involved treating $7 billion of line costs as capital expenditures. The line costs, which were rental fees paid to other phone companies to use their phone lines, had always been properly expensed in previous years. Capitalization delayed expense recognition to future periods and thus boosted current-period profits.

**THE MISSING CONTROLS**

**Documentation procedures.** The company's accounting system was a disorganized collection of non-integrated systems, which resulted from a series of corporate acquisitions. Top management took advantage of this disorganization to conceal its fraudulent activities.

**Independent internal verification.** A fraud of this size should have been detected by a routine comparison of the actual physical assets with the list of physical assets shown in the accounting records.

**Plant Asset Disposals**

**LEARNING OBJECTIVE 4**

**Interactive Tutorial**

Explain how to account for the disposal of a plant asset.

Companies dispose of plant assets that are no longer useful to them. Illustration 10-18 shows the three ways in which companies make plant asset disposals.
Whatever the disposal method, the company must determine the book value of the plant asset at the disposal date to determine the gain or loss. Recall that the book value is the difference between the cost of the plant asset and the accumulated depreciation to date. If the disposal occurs at any time during the year, the company must record depreciation for the fraction of the year to the date of disposal. The company then eliminates the book value by reducing (debiting) Accumulated Depreciation for the total depreciation associated with that asset to the date of disposal and reducing (crediting) the asset account for the cost of the asset.

In this chapter, we examine the accounting for the retirement and sale of plant assets. In the appendix to the chapter, we discuss and illustrate the accounting for exchanges of plant assets.

**RETIREMENT OF PLANT ASSETS**

To illustrate the retirement of plant assets, assume that Hobart Company retires its computer printers, which cost $32,000. The accumulated depreciation on these printers is $32,000. The equipment, therefore, is fully depreciated (zero book value). The entry to record this retirement is as follows.

\[
\begin{array}{ccc}
\text{Accumulated Depreciation—Equipment} & 32,000 & +32,000 \\
\text{Equipment} & 32,000 & -32,000 \\
\text{Cash Flow} & \text{no effect} & \\
\end{array}
\]

What happens if a fully depreciated plant asset is still useful to the company? In this case, the asset and its accumulated depreciation continue to be reported on the balance sheet, without further depreciation adjustment, until the company retires the asset. Reporting the asset and related accumulated depreciation on the balance sheet informs the financial statement reader that the asset is still in use. Once fully depreciated, no additional depreciation should be taken, even if an asset is still being used. In no situation can the accumulated depreciation on a plant asset exceed its cost.

If a company retires a plant asset before it is fully depreciated and no cash is received for scrap or salvage value, a loss on disposal occurs. For example, assume that Sunset Company discards delivery equipment that cost $18,000 and has accumulated depreciation of $14,000. The entry is as follows.

\[
\begin{array}{ccc}
\text{Accumulated Depreciation—Equipment} & 14,000 & +14,000 \\
\text{Loss on Disposal of Plant Assets} & 4,000 & -4,000 \\
\text{Equipment} & 18,000 & -18,000 \\
\text{Cash Flow} & \text{no effect} & \\
\end{array}
\]

Companies report a loss on disposal of plant assets in the “Other expenses and losses” section of the income statement.
Helpful Hint
When a company disposes of a plant asset, the company must remove from the accounts all amounts related to the asset. This includes the original cost in the asset account and the total depreciation to date in the accumulated depreciation account.

SALE OF PLANT ASSETS
In a disposal by sale, the company compares the book value of the asset with the proceeds received from the sale. If the proceeds of the sale exceed the book value of the plant asset, a gain on disposal occurs. If the proceeds of the sale are less than the book value of the plant asset sold, a loss on disposal occurs.

Only by coincidence will the book value and the fair value of the asset be the same when the asset is sold. Gains and losses on sales of plant assets are therefore quite common. For example, Delta Airlines reported a $94,343,000 gain on the sale of five Boeing B727-200 aircraft and five Lockheed L-1011-1 aircraft.

GAIN ON SALE
To illustrate a gain on sale of plant assets, assume that on July 1, 2014, Wright Company sells office furniture for $16,000 cash. The office furniture originally cost $60,000. As of January 1, 2014, it had accumulated depreciation of $41,000. Depreciation for the first six months of 2014 is $8,000. Wright records depreciation expense and updates accumulated depreciation to July 1 with the following entry.

<table>
<thead>
<tr>
<th>July 1</th>
<th>Depreciation Expense</th>
<th>8,000</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Accumulated Depreciation—Equipment (To record depreciation expense for the first 6 months of 2014)</td>
<td>8,000</td>
</tr>
</tbody>
</table>

After the accumulated depreciation balance is updated, the company computes the gain or loss. The gain or loss is the difference between the proceeds from the sale and the book value at the date of disposal. Illustration 10-19 shows this computation for Wright Company, which has a gain on disposal of $5,000.

| Cost of office furniture | $60,000 |
| Less: Accumulated depreciation ($41,000 + $8,000) | 49,000 |
| Book value at date of disposal | 11,000 |
| Proceeds from sale | 16,000 |
| **Gain on disposal of plant asset** | **$ 5,000** |

**Illustration 10-19**
Computation of gain on disposal

Wright records the sale and the gain on disposal of the plant asset as follows.
Companies report a gain on disposal of plant assets in the “Other revenues and gains” section of the income statement.

**LOSS ON SALE**
Assume that instead of selling the office furniture for $16,000, Wright sells it for $9,000. In this case, Wright computes a loss of $2,000 as follows.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of office furniture</td>
<td>$60,000</td>
</tr>
<tr>
<td>Less: Accumulated depreciation</td>
<td>$49,000</td>
</tr>
<tr>
<td>Book value at date of disposal</td>
<td>$11,000</td>
</tr>
<tr>
<td>Proceeds from sale</td>
<td>$9,000</td>
</tr>
<tr>
<td><strong>Loss on disposal of plant asset</strong></td>
<td><strong>$2,000</strong></td>
</tr>
</tbody>
</table>

**Illustration 10-20**
Computation of loss on disposal
Wright records the sale and the loss on disposal of the plant asset as follows.

<table>
<thead>
<tr>
<th>July 1</th>
<th>Cash</th>
<th>9,000</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Accumulated Depreciation—Equipment</td>
<td>49,000</td>
</tr>
<tr>
<td></td>
<td>Loss on Disposal of Plant Assets</td>
<td>2,000</td>
</tr>
<tr>
<td></td>
<td>Equipment</td>
<td>60,000</td>
</tr>
</tbody>
</table>

Companies report a loss on disposal of plant assets in the “Other expenses and losses” section of the income statement.

**DO IT!**

**Plant Asset Disposal**
Overland Trucking has an old truck that cost $30,000, and it has accumulated depreciation of $16,000 on this truck. Overland has decided to sell the truck. (a) What entry would Overland Trucking make to record the sale of the truck for $17,000 cash? (b) What entry would Overland Trucking make to record the sale of the truck for $10,000 cash?

**Action Plan**
- ✓ At the time of disposal, determine the book value of the asset.
- ✓ Compare the asset's book value with the proceeds received to determine whether a gain or loss has
Solution

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

<table>
<thead>
<tr>
<th>Cash</th>
<th>17,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accumulated Depreciation—Equipment</td>
<td>16,000</td>
</tr>
<tr>
<td>Equipment</td>
<td>30,000</td>
</tr>
<tr>
<td>Gain on Disposal of Plant Assets</td>
<td>3,000</td>
</tr>
</tbody>
</table>

[ $ 17,000 – ( $ 30,000 – $ 16,000) ]

(To record sale of truck at a gain)

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

<table>
<thead>
<tr>
<th>Cash</th>
<th>10,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accumulated Depreciation—Equipment</td>
<td>16,000</td>
</tr>
<tr>
<td>Loss on Disposal of Plant Assets</td>
<td>4,000</td>
</tr>
</tbody>
</table>

[ $ 10,000 – ( $ 30,000 – $ 16,000) ]

(To record sale of truck at a loss)

Related exercise material: BE10-9, BE10-10, E10-9, E10-10, and DO IT! 10-4.

NATURAL RESOURCES

LEARNING OBJECTIVE 5

Interactive Tutorial

Compute periodic depletion of natural resources.

Natural resources consist of standing timber and underground deposits of oil, gas, and minerals. These long-lived productive assets have two distinguishing characteristics: (1) They are physically extracted in operations (such as mining, cutting, or pumping). (2) They are replaceable only by an act of nature.

The acquisition cost of a natural resource is the price needed to acquire the resource and prepare it for its intended use. For an already-discovered resource, such as an existing coal mine, cost is the price paid for the property.

Helpful Hint

On a balance sheet, natural resources may be described more specifically as timberlands, mineral deposits, oil reserves, and so on.
Depletion

The allocation of the cost of natural resources to expense in a rational and systematic manner over the resource's useful life is called **depletion**. (That is, depletion is to natural resources as depreciation is to plant assets.) **Companies generally use the units-of-activity method** (learned earlier in the chapter) **to compute depletion**. The reason is that depletion generally is a function of the units extracted during the year.

Under the units-of-activity method, companies divide the total cost of the natural resource minus salvage value by the number of units estimated to be in the resource. The result is a **depletion cost per unit of product**. They then multiply the depletion cost per unit by the number of units extracted and sold. The result is the **annual depletion expense**. Illustration 10-21 shows the formula to compute depletion expense.

![Illustration 10-21](image)

**Formula to compute depletion expense**

To illustrate, assume that Lane Coal Company invests $5 million in a mine estimated to have 10 million tons of coal and no salvage value. In the first year, Lane extracts and sells 800,000 tons of coal. Using the formulas above, Lane computes the depletion expense as follows.

\[
\frac{5,000,000}{10,000,000} = 0.50 \text{ depletion cost per ton}
\]

\[
0.50 \times 800,000 = 400,000 \text{ annual depletion expense}
\]

Lane records depletion expense for the first year of operation as follows.

<table>
<thead>
<tr>
<th>Dec. 31</th>
<th>Depletion Expense</th>
<th>400,000</th>
<th>400,000</th>
<th>( \text{Accumulated Depletion} )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \text{To record depletion expense on coal deposits} )</td>
<td>400,000</td>
<td>400,000</td>
<td>( \text{Cash Flow} )</td>
</tr>
</tbody>
</table>

**Ethics Note**

Investors were stunned at news that Royal Dutch/Shell Group had significantly overstated its reported oil reserves—and perhaps had done so intentionally.

**Presentation**

The company reports the account Depletion Expense as a part of the cost of producing the product. Accumulated Depletion is a contra asset account, similar to accumulated depreciation. It is deducted from the cost of the natural resource in the balance sheet, as Illustration 10-22 shows.
Many companies do not use an Accumulated Depletion account. In such cases, the company credits the amount of depletion directly to the natural resources account.

Sometimes, a company will extract natural resources in one accounting period but not sell them until a later period. In this case, the company does not expense the depletion until it sells the resource. It reports the amount not sold as inventory in the current assets section.

**PEOPLE, PLANET, AND PROFIT INSIGHT**

**Sustainability Report Please**

Sustainability reports identify how the company is meeting its corporate social responsibilities. Many companies, both large and small, are now issuing these reports. For example, companies such as Disney, Best Buy, Microsoft, Ford, and ConocoPhilips issue these reports. Presented below is an adapted section of BHP Billiton’s (a global mining, oil, and gas company) sustainability report on its environmental policies. These policies are to (1) take action to address the challenges of climate change, (2) set and achieve targets that reduce pollution, and (3) enhance biodiversity by assessing and considering ecological values and land-use aspects. Here is how BHP Billiton measures the success or failure of some of these policies:

<table>
<thead>
<tr>
<th>Environment</th>
<th>Result</th>
<th>Trend</th>
<th>Commentary</th>
<th>Target Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate Group target of 6% reduction in greenhouse gas emissions per unit of production</td>
<td>On track</td>
<td>Improvement</td>
<td>Our greenhouse gas emissions intensity index has reduced 7% on our FY2006 baseline year</td>
<td>30 June 2012</td>
</tr>
<tr>
<td>Aggregate Group target of 13% reduction in carbon-based energy use per unit of production</td>
<td>On track</td>
<td>Improvement</td>
<td>Our energy intensity index has reduced 6% on our FY2006 baseline year</td>
<td>30 June 2012</td>
</tr>
<tr>
<td>Aggregate Group target of a 10% improvement in the ratio of water recycled/reused to high-quality water consumed</td>
<td>On track</td>
<td>Deterioration</td>
<td>Our water use index has improved 7% on our FY2007 baseline year</td>
<td>30 June 2012</td>
</tr>
</tbody>
</table>
In addition to the environment, BHP Billiton has sections in its sustainability report which discuss people, safety, health, and community.

*Source: BHP Billiton, 2010 Sustainability Report.*

**Why do you believe companies issue sustainability reports?**

Intangible assets are rights, privileges, and competitive advantages that result from the ownership of long-lived assets that do not possess physical substance. Evidence of intangibles may exist in the form of contracts or licenses. Intangibles may arise from the following sources:

1. Government grants, such as patents, copyrights, licenses, trademarks, and trade names.
2. Acquisition of another business, in which the purchase price includes a payment for goodwill.
3. Private monopolistic arrangements arising from contractual agreements, such as franchises and leases. Some widely known intangibles are Microsoft's patents, McDonald's franchises, Apple's trade name iPod, J.K. Rowling's copyrights on the *Harry Potter* books, and the trademark Rent-A-Wreck in the Feature Story.

**Accounting for Intangible Assets**

Companies record intangible assets at cost. Intangibles are categorized as having either a limited life or an indefinite life. If an intangible has a **limited life**, the company allocates its cost over the asset's useful life using a process similar to depreciation. The process of allocating the cost of intangibles is referred to as **amortization**. The cost of intangible assets with **indefinite lives should not be amortized**.

To record amortization of an intangible asset, a company increases (debits) Amortization Expense, and decreases (credits) the specific intangible asset. (Unlike depreciation, no contra account, such as Accumulated Amortization, is usually used.)

Intangible assets are typically amortized on a straight-line basis. For example, the legal life of a patent is 20 years. Companies **amortize the cost of a patent over its 20-year life or its useful life, whichever is shorter**.

To illustrate the computation of patent amortization, assume that National Labs purchases a patent at a cost of $60,000. If National estimates the useful life of the patent to be eight years, the annual amortization expense is $7,500 ($60,000 ÷ 8). National records the annual amortization as follows.
Companies classify Amortization Expense as an operating expense in the income statement.

There is a difference between intangible assets and plant assets in determining cost. For plant assets, cost includes both the purchase price of the asset and the costs incurred in designing and constructing the asset. In contrast, the initial cost for an intangible asset includes only the purchase price. Companies expense any costs incurred in developing an intangible asset.

**Helpful Hint**

*Amortization* is to intangibles what *depreciation* is to plant assets and *depletion* is to natural resources.

**PATENTS**

A **patent** is an exclusive right issued by the U.S. Patent Office that enables the recipient to manufacture, sell, or otherwise control an invention for a period of 20 years from the date of the grant. A patent is nonrenewable. But, companies can extend the legal life of a patent by obtaining new patents for improvements or other changes in the basic design. **The initial cost of a patent is the cash or cash equivalent price paid to acquire the patent.**

The saying, “A patent is only as good as the money you're prepared to spend defending it,” is very true. Many patents are subject to litigation by competitors. Any legal costs an owner incurs in successfully defending a patent in an infringement suit are considered necessary to establish the patent's validity. **The owner adds those costs to the Patents account and amortizes them over the remaining life of the patent.**

The patent holder amortizes the cost of a patent over its 20-year legal life or its useful life, whichever is shorter. Companies consider obsolescence and inadequacy in determining useful life. These factors may cause a patent to become economically ineffective before the end of its legal life.

**COPYRIGHTS**

The federal government grants **copyrights**, which give the owner the exclusive right to reproduce and sell an artistic or published work. Copyrights extend for the life of the creator plus 70 years. The cost of a copyright is the cost of acquiring and defending it. The cost may be only the small fee paid to the U.S. Copyright Office. Or, it may amount to much more if an infringement suit is involved.

The useful life of a copyright generally is significantly shorter than its legal life. Therefore, copyrights usually are amortized over a relatively short period of time.

**TRADEMARKS AND TRADE NAMES**

A **trademark** or **trade name** is a word, phrase, jingle, or symbol that identifies a particular enterprise or product. Trade names like Wheaties, Monopoly, Big Mac, Kleenex, Coca-Cola, and Jeep create immediate product identification. They also generally enhance the sale of the product. The creator or original user may obtain exclusive legal right to the trademark or trade name by registering it with the U.S. Patent Office. Such registration provides 20 years of protection. The registration may be renewed indefinitely as long as the trademark or trade name is in use.

If a company purchases the trademark or trade name, its cost is the purchase price. If a company develops and maintains the trademark or trade name, any costs related to these activities are expensed as incurred. Because trademarks and trade names have indefinite lives, they are not amortized.
FRANCHISES
When you fill up your tank at the corner Shell station, eat lunch at Subway, or rent a car from Rent-A-Wreck, you are dealing with franchises. A franchise is a contractual arrangement between a franchisor and a franchisee. The franchisor grants the franchisee the right to sell certain products, perform specific services, or use certain trademarks or trade names, usually within a designated geographic area.

Another type of franchise is a license. A license granted by a governmental body permits a company to use public property in performing its services. Examples are the use of city streets for a bus line or taxi service, the use of public land for telephone and electric lines, and the use of airwaves for radio or TV broadcasting. In a recent license agreement, FOX, CBS, and NBC agreed to pay $27.9 billion for the right to broadcast NFL football games over an eight-year period. Franchises and licenses may be granted for a definite period of time, an indefinite period, or perpetually.

When a company can identify costs with the purchase of a franchise or license, it should recognize an intangible asset. Companies should amortize the cost of a limited-life franchise (or license) over its useful life. If the life is indefinite, the cost is not amortized. Annual payments made under a franchise agreement are recorded as operating expenses in the period in which they are incurred.

GOODWILL
Usually, the largest intangible asset that appears on a company's balance sheet is goodwill. Goodwill represents the value of all favorable attributes that relate to a company that are not attributable to any other specific asset. These include exceptional management, desirable location, good customer relations, skilled employees, high-quality products, and harmonious relations with labor unions. Goodwill is unique. Unlike assets such as investments and plant assets, which can be sold individually in the marketplace, goodwill can be identified only with the business as a whole.

If goodwill can be identified only with the business as a whole, how can its amount be determined? One could try to put a dollar value on the factors listed above (exceptional management, desirable location, and so on). But, the results would be very subjective, and such subjective valuations would not contribute to the reliability of financial statements. Therefore, companies record goodwill only when an entire business is purchased. In that case, goodwill is the excess of cost over the fair value of the net assets (assets less liabilities) acquired.

In recording the purchase of a business, the company debits (increases) the identifiable acquired assets, credits liabilities at their fair values, credits cash for the purchase price, and records the difference as goodwill. Goodwill is not amortized because it is considered to have an indefinite life. Companies report goodwill in the balance sheet under intangible assets.

INTERNATIONAL INSIGHT
Should Companies Write Up Goodwill?
**Softbank Corp.** was Japan's biggest Internet company. At one time, it boosted the profit margin of its mobile-phone unit from 3.2% to 11.2% through what appeared to some as accounting tricks. What did it do? It wrote down the value of its mobile-phone-unit assets by half. This would normally result in a huge loss. But rather than take a loss, the company wrote up goodwill by the same amount. How did this move increase earnings? The assets were being depreciated over 10 years, but the company amortizes goodwill over 20 years. (Amortization of goodwill was allowed under the accounting standards it followed at that time.) While the new treatment did not break any rules, the company was criticized by investors for not providing sufficient justification or a detailed explanation for the sudden shift in policy.


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**Research and Development Costs**

Research and development costs are expenditures that may lead to patents, copyrights, new processes, and new products. Many companies spend considerable sums of money on research and development (R&D). For example, in a recent year, IBM spent over $5.1 billion on R&D.

Research and development costs present accounting problems. For one thing, it is sometimes difficult to assign the costs to specific projects. Also, there are uncertainties in identifying the extent and timing of future benefits. As a result, companies usually record R&D costs as an expense when incurred, whether the research and development is successful or not.

To illustrate, assume that Laser Scanner Company spent $3 million on R&D that resulted in two highly successful patents. It spent $20,000 on legal fees for the patents. The company would add the lawyers' fees to
the patent account. The R&D costs, however, cannot be included in the cost of the patent. Instead, the company would record the R&D costs as an expense when incurred.

Many disagree with this accounting approach. They argue that expensing R&D costs leads to understated assets and net income. Others, however, argue that capitalizing these costs will lead to highly speculative assets on the balance sheet. Who is right is difficult to determine.

**Helpful Hint**
Research and development (R&D) costs are not intangible assets. But because they may lead to patents and copyrights, we discuss them in this section.

> **DO IT!**

**Classification Concepts**

Match the statement with the term most directly associated with it.

- Copyrights
- Depletion
- Intangible assets
- Franchises
- Research and development costs

1. ___ The allocation of the cost of a natural resource to expense in a rational and systematic manner.
2. ___ Rights, privileges, and competitive advantages that result from the ownership of long-lived assets that do not possess physical substance.
3. ___ An exclusive right granted by the federal government to reproduce and sell an artistic or published work.
4. ___ A right to sell certain products or services or to use certain trademarks or trade names within a designated geographic area.
5. ___ Costs incurred by a company that often lead to patents or new products. These costs must be expensed as incurred.

**Action Plan**

✓ Know that the accounting for intangibles often depends on whether the item has a finite or indefinite life.
✓ Recognize the many similarities and differences between the accounting for natural resources, plant assets, and intangible assets.

**Solution**

1. Depletion
2. Intangible assets
3. Copyrights
4. Franchises
5. Research and development costs

Related exercise material: BE10-11, BE10-12, E10-11, E10-12, E10-13, and DO IT! 10-5.
Indicate how plant assets, natural resources, and intangible assets are reported.

Usually, companies combine plant assets and natural resources under “Property, plant, and equipment” in the balance sheet. They show intangibles separately. Companies disclose either in the balance sheet or the notes the balances of the major classes of assets, such as land, buildings, and equipment, and accumulated depreciation by major classes or in total. In addition, they should describe the depreciation and amortization methods that were used, as well as disclose the amount of depreciation and amortization expense for the period.

Illustration 10-23 shows a typical financial statement presentation of property, plant, and equipment and intangibles for The Procter & Gamble Company (P&G) in its 2011 balance sheet. The notes to P&G's financial statements present greater details about the accounting for its long-term tangible and intangible assets.

Illustration 10-24 shows another comprehensive presentation of property, plant, and equipment from the balance sheet of Owens-Illinois. The notes to the financial statements of Owens-Illinois identify the major classes of property, plant, and equipment. They also indicate that depreciation and amortization are by the straight-line method, and depletion is by the units-of-activity method.

Illustration 10-25 shows the computation of the asset turnover for The Procter & Gamble Company. P&G's net sales for 2011 were $82,559 million. Its total ending assets were $138,354 million, and beginning assets were $128,172 million.

Analysis
Using ratios, we can analyze how efficiently a company uses its assets to generate sales. The asset turnover analyzes the productivity of a company's assets. It tells us how many dollars of sales a company generates for each dollar invested in assets. This ratio is computed by dividing net sales by average total assets for the period. Illustration 10-25 shows the computation of the asset turnover for The Procter & Gamble Company.
Illustration 10-25  
Asset turnover formula and computation  
Thus, each dollar invested in assets produced $0.62 in sales for P&G. If a company is using its assets efficiently, each dollar of assets will create a high amount of sales. This ratio varies greatly among different industries—from those that are asset-intensive (utilities) to those that are not (services).

COMPREHENSIVE DO IT! 1

DuPage Company purchases a factory machine at a cost of $18,000 on January 1, 2014. DuPage expects the machine to have a salvage value of $2,000 at the end of its 4-year useful life. During its useful life, the machine is expected to be used 160,000 hours. Actual annual hourly use was 2014, 40,000; 2015, 60,000; 2016, 35,000; and 2017, 25,000.

Instructions
Prepare depreciation schedules for the following methods: (a) straight-line, (b) units-of-activity, and (c) declining-balance using double the straight-line rate.

Action Plan
✓ Under the straight-line method, apply the depreciation rate to depreciable cost.
✓ Under the units-of-activity method, compute the depreciable cost per unit by dividing depreciable cost by total units of activity.
✓ Under the declining-balance method, apply the depreciation rate to book value at the beginning of the year.

Solution to Comprehensive DO IT!

<table>
<thead>
<tr>
<th>Year</th>
<th>Depreciable Cost</th>
<th>Depreciation Rate</th>
<th>Annual Depreciation Expense</th>
<th>Accumulated Depreciation</th>
<th>Book Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>$16,000</td>
<td>25%</td>
<td>$4,000</td>
<td>$4,000</td>
<td>$14,000**</td>
</tr>
<tr>
<td>2015</td>
<td>16,000</td>
<td>25%</td>
<td>4,000</td>
<td>8,000</td>
<td>10,000</td>
</tr>
<tr>
<td>2016</td>
<td>16,000</td>
<td>25%</td>
<td>4,000</td>
<td>12,000</td>
<td>6,000</td>
</tr>
<tr>
<td>2017</td>
<td>16,000</td>
<td>25%</td>
<td>4,000</td>
<td>16,000</td>
<td>2,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Units of Activity</th>
<th>Depreciable Cost/Unit</th>
<th>Annual Depreciation Expense</th>
<th>Accumulated Depreciation</th>
<th>Book Value</th>
</tr>
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<tbody>
<tr>
<td>2014</td>
<td>40,000</td>
<td>$0.10^*</td>
<td>$4,000</td>
<td>$4,000</td>
<td>$14,000</td>
</tr>
<tr>
<td>2015</td>
<td>60,000</td>
<td>0.10</td>
<td>6,000</td>
<td>10,000</td>
<td>8,000</td>
</tr>
<tr>
<td>2016</td>
<td>35,000</td>
<td>0.10</td>
<td>3,500</td>
<td>13,500</td>
<td>4,500</td>
</tr>
<tr>
<td>2017</td>
<td>25,000</td>
<td>0.10</td>
<td>2,500</td>
<td>16,000</td>
<td>2,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Depreciable Cost</th>
<th>Depreciation Rate</th>
<th>Annual Depreciation Expense</th>
<th>Accumulated Depreciation</th>
<th>Book Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>$16,000</td>
<td>25%</td>
<td>$4,000</td>
<td>$4,000</td>
<td>$14,000**</td>
</tr>
<tr>
<td>2015</td>
<td>16,000</td>
<td>25%</td>
<td>4,000</td>
<td>8,000</td>
<td>10,000</td>
</tr>
<tr>
<td>2016</td>
<td>16,000</td>
<td>25%</td>
<td>4,000</td>
<td>12,000</td>
<td>6,000</td>
</tr>
<tr>
<td>2017</td>
<td>16,000</td>
<td>25%</td>
<td>4,000</td>
<td>16,000</td>
<td>2,000</td>
</tr>
<tr>
<td>Year</td>
<td>Book Value Beginning of Year</td>
<td>Depreciation Rate</td>
<td>Depreciation Expense</td>
<td>Accumulated Depreciation</td>
<td>Book Value</td>
</tr>
<tr>
<td>------</td>
<td>-----------------------------</td>
<td>-------------------</td>
<td>----------------------</td>
<td>--------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>2014</td>
<td>$18,000</td>
<td>50%</td>
<td>$9,000</td>
<td>$9,000</td>
<td>$9,000</td>
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<tr>
<td>2015</td>
<td>9,000</td>
<td>50%</td>
<td>4,500</td>
<td>13,500</td>
<td>4,500</td>
</tr>
<tr>
<td>2016</td>
<td>4,500</td>
<td>50%</td>
<td>2,250</td>
<td>15,750</td>
<td>2,250</td>
</tr>
<tr>
<td>2017</td>
<td>2,250</td>
<td>50%</td>
<td>250**</td>
<td>16,000</td>
<td>2,000</td>
</tr>
</tbody>
</table>

COMPREHENSIVE DO IT! 2

On January 1, 2014, Skyline Limousine Co. purchased a limo at an acquisition cost of $28,000. The vehicle has been depreciated by the straight-line method using a 4-year service life and a $4,000 salvage value. The company's fiscal year ends on December 31.

Instructions
Prepare the journal entry or entries to record the disposal of the limousine assuming that it was:

(a) Retired and scrapped with no salvage value on January 1, 2018.
(b) Sold for $5,000 on July 1, 2017.

Action Plan
✓ At the time of disposal, determine the book value of the asset.
✓ Recognize any gain or loss from disposal of the asset.
✓ Remove the book value of the asset from the records by debiting Accumulated Depreciation for the total depreciation to date of disposal and crediting the asset account for the cost of the asset.

Solution to Comprehensive DO IT! 2

(a) 1/1/18
Accumulated Depreciation—Equipment 24,000
Loss on Disposal of Plant Assets 4,000
Equipment (To record retirement of limousine) 28,000

(b) 7/1/17
Depreciation Expense 3,000
Accumulated Depreciation—Equipment (To record depreciation to date of disposal) 3,000
Cash 5,000
Accumulated Depreciation—Equipment 21,000
Loss on Disposal of Plant Assets 2,000
Equipment (To record sale of limousine) 28,000
10-1. (LO 1)

Erin Danielle Company purchased equipment and incurred the following costs.

<table>
<thead>
<tr>
<th>Cost</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash price</td>
<td>$24,000</td>
</tr>
<tr>
<td>Sales taxes</td>
<td>1,200</td>
</tr>
<tr>
<td>Insurance during transit</td>
<td>200</td>
</tr>
<tr>
<td>Installation and testing</td>
<td>400</td>
</tr>
<tr>
<td>Total costs</td>
<td>$25,800</td>
</tr>
</tbody>
</table>

What amount should be recorded as the cost of the equipment?

(a) $24,000.
(b) $25,200.
(c) $25,400.
(d) $25,800.

10-2. (LO 2)

Depreciation is a process of:

(a) valuation.
(b) cost allocation.
(c) cash accumulation.
(d) appraisal.

10-3. (LO 2)

Micah Bartlett Company purchased equipment on January 1, 2013, at a total invoice cost of $400,000. The equipment has an estimated salvage value of $10,000 and an estimated useful life of 5 years. The amount of accumulated depreciation at December 31, 2014, if the straight-line method of depreciation is used, is:

(a) $80,000.
(b) $160,000.
(c) $78,000.
(d) $156,000.

10-4. (LO 2)

Ann Torbert purchased a truck for $11,000 on January 1, 2013. The truck will have an estimated salvage
value of $1,000 at the end of 5 years. Using the units-of-activity method, the balance in accumulated depreciation at December 31, 2014, can be computed by the following formula:

(a) \( \frac{\$11,000}{\text{Total estimated activity}} \times \text{Units of activity for 2014} \)
(b) \( \frac{\$10,000}{\text{Total estimated activity}} \times \text{Units of activity for 2014} \)
(c) \( \frac{\$11,000}{\text{Total estimated activity}} \times \text{Units of activity for 2013 and 2014} \)
(d) \( \frac{\$10,000}{\text{Total estimated activity}} \times \text{Units of activity for 2013 and 2014} \)

10-5.

(LO 2)

Jefferson Company purchased a piece of equipment on January 1, 2014. The equipment cost $60,000 and has an estimated life of 8 years and a salvage value of $8,000. What was the depreciation expense for the asset for 2015 under the double-declining-balance method?

(a) $6,500.
(b) $11,250.
(c) $15,000.
(d) $6,562.

10-6.

(LO 2)

When there is a change in estimated depreciation:

(a) previous depreciation should be corrected.
(b) current and future years' depreciation should be revised.
(c) only future years' depreciation should be revised.
(d) None of the above.

10-7.

(LO 2)

Able Towing Company purchased a tow truck for $60,000 on January 1, 2012. It was originally depreciated on a straight-line basis over 10 years with an assumed salvage value of $12,000. On December 31, 2014, before adjusting entries had been made, the company decided to change the remaining estimated life to 4 years (including 2014) and the salvage value to $2,000. What was the depreciation expense for 2014?

(a) $6,000.
(b) $4,800.
(c) $15,000.
(d) $12,100.

10-8.

(LO 3)
Additions to plant assets are:

(a) revenue expenditures.
(b) debited to the Maintenance and Repairs Expense account.
(c) debited to the Purchases account.
(d) capital expenditures.

10-9.  (LO 4)

Bennie Razor Company has decided to sell one of its old manufacturing machines on June 30, 2014. The machine was purchased for $80,000 on January 1, 2010, and was depreciated on a straight-line basis for 10 years assuming no salvage value. If the machine was sold for $26,000, what was the amount of the gain or loss recorded at the time of the sale?

(a) $18,000.
(b) $54,000.
(c) $22,000.
(d) $46,000.

10-10.  (LO 5)

Maggie Sharrer Company expects to extract 20 million tons of coal from a mine that cost $12 million. If no salvage value is expected and 2 million tons are mined and sold in the first year, the entry to record depletion will include a:

(a) debit to Accumulated Depletion of $2,000,000.
(b) credit to Depletion Expense of $1,200,000.
(c) debit to Depletion Expense of $1,200,000.
(d) credit to Accumulated Depletion of $2,000,000.

10-11.  (LO 6)

Which of the following statements is false?

(a) If an intangible asset has a finite life, it should be amortized.
(b) The amortization period of an intangible asset can exceed 20 years.
(c) Goodwill is recorded only when a business is purchased.
(d) Research and development costs are expensed when incurred, except when the research and development expenditures result in a successful patent.
10-12.  (LO 6)
Martha Beyerlein Company incurred $150,000 of research and development costs in its laboratory to develop a patent granted on January 2, 2014. On July 31, 2014, Beyerlein paid $35,000 for legal fees in a successful defense of the patent. The total amount debited to Patents through July 31, 2014, should be:
(a) $150,000.
(b) $35,000.
(c) $185,000.
(d) $170,000.

ANSWER +

10-13.  (LO 7)
Indicate which of the following statements is true.
(a) Since intangible assets lack physical substance, they need be disclosed only in the notes to the financial statements.
(b) Goodwill should be reported as a contra account in the owner's equity section.
(c) Totals of major classes of assets can be shown in the balance sheet, with asset details disclosed in the notes to the financial statements.
(d) Intangible assets are typically combined with plant assets and natural resources and shown in the property, plant, and equipment section.

ANSWER +

10-14.  (LO 7)
Lake Coffee Company reported net sales of $180,000, net income of $54,000, beginning total assets of $200,000, and ending total assets of $300,000. What was the company's asset turnover?
(a) 0.90.
(b) 0.20.
(c) 0.72.
(d) 1.39.

ANSWER +

10-15.  *
(LO 8)
Schopenhauer Company exchanged an old machine, with a book value of $39,000 and a fair value of $35,000, and paid $10,000 cash for a similar new machine. The transaction has commercial substance. At what amount should the machine acquired in the exchange be recorded on Schopenhauer's books?
(a) $45,000.
(b) $46,000.
(c) $49,000.
(d) $50,000.
10-16. * 

(LO 8) 

In exchanges of assets in which the exchange has commercial substance:

(a) neither gains nor losses are recognized immediately.  
(b) gains, but not losses, are recognized immediately.  
(c) losses, but not gains, are recognized immediately.  
(d) both gains and losses are recognized immediately.

EXERCISES, EXERCISES: SET B, AND CHALLENGE EXERCISES

E10-1.  

Determine cost of plant acquisitions.  

(LO 1)  

The following expenditures relating to plant assets were made by Prather Company during the first 2 months of 2014. 

1. Paid $5,000 of accrued taxes at time plant site was acquired. 
2. Paid $200 insurance to cover possible accident loss on new factory machinery while the machinery was in transit. 
3. Paid $850 sales taxes on new delivery truck. 
4. Paid $17,500 for parking lots and driveways on new plant site. 
5. Paid $250 to have company name and advertising slogan painted on new delivery truck. 
6. Paid $8,000 for installation of new factory machinery. 
7. Paid $900 for one-year accident insurance policy on new delivery truck. 
8. Paid $75 motor vehicle license fee on the new truck. 

Instructions  

(a) Explain the application of the historical cost principle in determining the acquisition cost of plant assets.  
(b) List the numbers of the foregoing transactions, and opposite each indicate the account title to which each expenditure should be debited. 

E10-2.  

Determine property, plant, and equipment costs.
(LO 1)

Benedict Company incurred the following costs.

1. Sales tax on factory machinery purchased $ 5,000
2. Painting of and lettering on truck immediately upon purchase 700
3. Installation and testing of factory machinery 2,000
4. Real estate broker's commission on land purchased 3,500
5. Insurance premium paid for first year's insurance on new truck 880
6. Cost of landscaping on property purchased 7,200
7. Cost of paving parking lot for new building constructed 17,900
8. Cost of clearing, draining, and filling land 13,300
9. Architect's fees on self-constructed building 10,000

Instructions
Indicate to which account Benedict would debit each of the costs.

E10-3. Determine acquisition costs of land.

(LO 1)

On March 1, 2014, Westmorlan Company acquired real estate on which it planned to construct a small office building. The company paid $75,000 in cash. An old warehouse on the property was razed at a cost of $8,600; the salvaged materials were sold for $1,700. Additional expenditures before construction began included $1,100 attorney's fee for work concerning the land purchase, $5,000 real estate broker's fee, $7,800 architect's fee, and $14,000 to put in driveways and a parking lot.

Instructions
(a) Determine the amount to be reported as the cost of the land.
(b) For each cost not used in part (a), indicate the account to be debited.

E10-4. Understand depreciation concepts.

(LO 2)

Tom Parkey has prepared the following list of statements about depreciation.

1. Depreciation is a process of asset valuation, not cost allocation.
2. Depreciation provides for the proper matching of expenses with revenues.
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. The revenue-producing ability of a depreciable asset will decline due to wear and tear and to obsolescence.
7. Recognizing depreciation on an asset results in an accumulation of cash for replacement of the asset.
8. The balance in accumulated depreciation represents the total cost that has been charged to expense.
9. Depreciation expense and accumulated depreciation are reported on the income statement.
10. Four factors affect the computation of depreciation: cost, useful life, salvage value, and
residual value.

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

**E10-5.**

*Compute depreciation under units-of-activity method.*

(LO 2)

Yello Bus Lines uses the units-of-activity method in depreciating its buses. One bus was purchased on January 1, 2014, at a cost of $148,000. Over its 4-year useful life, the bus is expected to be driven 100,000 miles. Salvage value is expected to be $8,000.

**Instructions**

(a) Compute the depreciable cost per unit.

(b) Prepare a depreciation schedule assuming actual mileage was: 2014, 26,000; 2015, 32,000; 2016, 25,000; and 2017, 17,000.

**E10-6.**

*Determine depreciation for partial periods.*

(LO 2)

Rottino Company purchased a new machine on October 1, 2014, at a cost of $150,000. The company estimated that the machine will have a salvage value of $12,000. The machine is expected to be used for 10,000 working hours during its 5-year life.

**Instructions**
Compute the depreciation expense under the following methods for the year indicated.

(a) Straight-line for 2014.

(b) Units-of-activity for 2014, assuming machine usage was 1,700 hours.

(c) Declining-balance using double the straight-line rate for 2014 and 2015.

**E10-7.**

*Compute depreciation using different methods.*

(LO 2)

Linton Company purchased a delivery truck for $34,000 on January 1, 2014. The truck has an expected salvage value of $2,000, and is expected to be driven 100,000 miles over its estimated useful life of 8 years. Actual miles driven were 15,000 in 2014 and 12,000 in 2015.

**Instructions**

(a) Compute depreciation expense for 2014 and 2015 using (1) the straight-line method, (2) the units-of-activity method, and (3) the double-declining-balance method.

(b) Assume that Linton uses the straight-line method.

1. Prepare the journal entry to record 2014 depreciation.

2. Show how the truck would be reported in the December 31, 2014, balance sheet.

**E10-8.**

*Compute revised annual
depreciation.
(LO 2)

Terry Wade, the new controller of Hellickson Company, has reviewed the expected useful lives and salvage values of selected depreciable assets at the beginning of 2014. His findings are as follows.

All assets are depreciated by the straight-line method. Hellickson Company uses a calendar year in preparing annual financial statements. After discussion, management has agreed to accept Terry's proposed changes.

Instructions
(a) Compute the revised annual depreciation on each asset in 2014. (Show computations.)
(b) Prepare the entry (or entries) to record depreciation on the building in 2014.

(LO 4)

Presented below are selected transactions at Ridge Company for 2014.

   Jan. 1    Retired a piece of machinery that was purchased on January 1, 2004. The machine cost $62,000 on that date. It had a useful life of 10 years with no salvage value.
   June 30   Sold a computer that was purchased on January 1, 2011. The computer cost $45,000. It had a useful life of 5 years with no salvage value. The computer was sold for $14,000.
   Dec. 31   Discarded a delivery truck that was purchased on January 1, 2010. The truck cost $33,000. It was depreciated based on a 6-year useful life with a $3,000 salvage value.

Instructions
Journalize all entries required on the above dates, including entries to update depreciation, where applicable, on assets disposed of. Ridge Company uses straight-line depreciation. (Assume depreciation is up to date as of December 31, 2013.)

E10-10. Journalize entries for disposal of equipment.
(LO 4)

Pryce Company owns equipment that cost $65,000 when purchased on January 1, 2011. It has been depreciated using the straight-line method based on estimated salvage value of $5,000 and an estimated useful life of 5 years.

Instructions
Prepare Pryce Company’s journal entries to record the sale of the equipment in these four independent situations.
   (a) Sold for $31,000 on January 1, 2014.
   (b) Sold for $31,000 on May 1, 2014.
   (c) Sold for $11,000 on January 1, 2014.
   (d) Sold for $11,000 on October 1, 2014.

E10-11. Journalize entries for natural resources depletion.
On July 1, 2014, Friedman Inc. invested $720,000 in a mine estimated to have 900,000 tons of ore of uniform grade. During the last 6 months of 2014, 100,000 tons of ore were mined and sold.

**Instructions**

(a) Prepare the journal entry to record depletion expense.

(b) Assume that the 100,000 tons of ore were mined, but only 80,000 units were sold. How are the costs applicable to the 20,000 unsold units reported?

**E10-12.**

Prepare adjusting entries for amortization.

The following are selected 2014 transactions of Pedigo Corporation.

Jan. 1 Purchased a small company and recorded goodwill of $150,000. Its useful life is indefinite.

May 1 Purchased for $75,000 a patent with an estimated useful life of 5 years and a legal life of 20 years.

**Instructions**

Prepare necessary adjusting entries at December 31 to record amortization required by the events above.

**E10-13.**

Prepare entries to set up appropriate accounts for different intangibles; amortize intangible assets.

Gill Company, organized in 2014, has the following transactions related to intangible assets.

1/2/14 Purchased patent (7-year life) $595,000

4/1/14 Goodwill purchased (indefinite life) 360,000

7/1/14 10-year franchise; expiration date 7/1/2024 480,000

9/1/14 Research and development costs 185,000

**Instructions**

Prepare the necessary entries to record these intangibles. All costs incurred were for cash. Make the adjusting entries as of December 31, 2014, recording any necessary amortization and reflecting all balances accurately as of that date.

**E10-14.**

Calculate asset turnover.

During 2014 Paola Corporation reported net sales of $3,500,000 and net income of $1,500,000. Its balance sheet reported average total assets of $1,400,000.

**Instructions**

Calculate the asset turnover.

**E10-15.**

Journalize entries for exchanges.
Presented below are two independent transactions. Both transactions have commercial substance.

1. Mercy Co. exchanged old trucks (cost $64,000 less $22,000 accumulated depreciation) plus cash of $17,000 for new trucks. The old trucks had a fair value of $38,000.

2. Pence Inc. trades its used machine (cost $12,000 less $4,000 accumulated depreciation) for a new machine. In addition to exchanging the old machine (which had a fair value of $11,000), Pence also paid cash of $3,000.

Instructions
(a) Prepare the entry to record the exchange of assets by Mercy Co.
(b) Prepare the entry to record the exchange of assets by Pence Inc.

E10-16. *

Journalize entries for the exchange of plant assets.
(LO 8)

Rizzo's Delivery Company and Overland's Express Delivery exchanged delivery trucks on January 1, 2014. Rizzo's truck cost $22,000. It has accumulated depreciation of $15,000 and a fair value of $3,000. Overland's truck cost $10,000. It has accumulated depreciation of $8,000 and a fair value of $3,000. The transaction has commercial substance.

Instructions
(a) Journalize the exchange for Rizzo's Delivery Company.
(b) Journalize the exchange for Overland's Express Delivery.

Exercises: Set B and Challenge Exercises
Visit the book's companion website, at www.wiley.com/college/weygandt, and choose the Student Companion site to access Exercise Set B and Challenge Exercises.

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PROBLEMS: SET A, PROBLEMS: SET B, AND PROBLEMS: SET C

PROBLEMS: SET A

P10-1A

Determine acquisition costs of land and building.
(LO 1)

Venable Company was organized on January 1. During the first year of operations, the following plant asset expenditures and receipts were recorded in random order.
Instructions
Analyze the foregoing transactions using the following column headings. Insert the number of each transaction in the Item space, and insert the amounts in the appropriate columns. For amounts entered in the Other Accounts column, also indicate the account titles.

<table>
<thead>
<tr>
<th>Item</th>
<th>Land</th>
<th>Buildings</th>
<th>Other Accounts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Totals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land</td>
<td>$172,500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buildings</td>
<td>$735,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

P10-2A

Compute depreciation under different methods.

(LO 2)

In recent years, Avery Transportation purchased three used buses. Because of frequent turnover in the accounting department, a different accountant selected the depreciation method for each bus, and various methods were selected. Information concerning the buses is summarized as follows.

<table>
<thead>
<tr>
<th>Bus</th>
<th>Acquired</th>
<th>Cost</th>
<th>Salvage Value</th>
<th>Useful Life in Years</th>
<th>Depreciation Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1/1/12</td>
<td>$96,000</td>
<td>$6,000</td>
<td>5</td>
<td>Straight-line</td>
</tr>
<tr>
<td>2</td>
<td>1/1/12</td>
<td>110,000</td>
<td>10,000</td>
<td>4</td>
<td>Declining-balance</td>
</tr>
<tr>
<td>3</td>
<td>1/1/13</td>
<td>92,000</td>
<td>8,000</td>
<td>5</td>
<td>Units-of-activity</td>
</tr>
</tbody>
</table>

For the declining-balance method, the company uses the double-declining rate. For the units-of-activity method, total miles are expected to be 120,000. Actual miles of use in the first 3 years were 2013, 24,000; 2014, 34,000; and 2015, 30,000.

Instructions

(a) Compute the amount of accumulated depreciation on each bus at December 31, 2014.

Bus 2, 2013, $82,500

(b) If Bus 2 was purchased on April 1 instead of January 1, what is the depreciation expense for this bus in (1) 2012 and (2) 2013?

P10-3A

Compute depreciation under different methods.

(LO 2)

On January 1, 2014, Evers Company purchased the following two machines for use in its production process.

Instructions

(a) Prepare the following for Machine A.

1. The journal entry to record its purchase on January 1, 2014.

2. The journal entry to record annual depreciation at December 31, 2014.

(b) Calculate the amount of depreciation expense that Evers should record for Machine B each year of its useful life under the following assumptions.
1. Evers uses the straight-line method of depreciation.

2. Evers uses the declining-balance method. The rate used is twice the straight-line rate.

3. Evers uses the units-of-activity method and estimates that the useful life of the machine is 125,000 units. Actual usage is as follows: 2014, 45,000 units; 2015, 35,000 units; 2016, 25,000 units; 2017, 20,000 units.

(2) 2014 DDB depreciation $90,000

(c) Which method used to calculate depreciation on Machine B reports the highest amount of depreciation expense in year 1 (2014)? The highest amount in year 4 (2017)? The highest total amount over the 4-year period?

P10-4A

Calculate revisions to depreciation expense.

(LO 2)

At the beginning of 2012, Mazzaro Company acquired equipment costing $120,000. It was estimated that this equipment would have a useful life of 6 years and a salvage value of $12,000 at that time. The straight-line method of depreciation was considered the most appropriate to use with this type of equipment. Depreciation is to be recorded at the end of each year.

During 2014 (the third year of the equipment's life), the company's engineers reconsidered their expectations, and estimated that the equipment's useful life would probably be 7 years (in total) instead of 6 years. The estimated salvage value was not changed at that time. However, during 2017 the estimated salvage value was reduced to $5,000.

Instructions

Indicate how much depreciation expense should be recorded each year for this equipment, by completing the following table.

<table>
<thead>
<tr>
<th>Year</th>
<th>Depreciation Expense</th>
<th>Accumulated Depreciation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2018 depreciation expense, $17,900

P10-5A

Journalize a series of equipment transactions related to purchase, sale, retirement, and depreciation.

(LO 2, 4, 7)

At December 31, 2014, Grand Company reported the following as plant assets.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land</td>
<td>$4,000,000</td>
</tr>
<tr>
<td>Buildings</td>
<td>$28,500,000</td>
</tr>
<tr>
<td>Less: Accumulated depreciation—buildings</td>
<td>12,100,000</td>
</tr>
</tbody>
</table>
Equipment 48,000,000
Less: Accumulated depreciation—equipment 5,000,000 43,000,000
Total plant assets $63,400,000

During 2015, the following selected cash transactions occurred.

April 1 Purchased land for $2,130,000.
May 1 Sold equipment that cost $750,000 when purchased on January 1, 2011. The equipment was sold for $450,000.
June 1 Sold land purchased on June 1, 2005 for $1,500,000. The land cost $400,000.
July 1 Purchased equipment for $2,500,000.
Dec. 31 Retired equipment that cost $500,000 when purchased on December 31, 2005. No salvage value was received.

Instructions
(a) Journalize the above transactions. The company uses straight-line depreciation for buildings and equipment. The buildings are estimated to have a 50-year life and no salvage value. The equipment is estimated to have a 10-year useful life and no salvage value. Update depreciation on assets disposed of at the time of sale or retirement.
(b) Record adjusting entries for depreciation for 2015.
   Depreciation Expense—Buildings $570,000; Equipment $4,800,000
(c) Prepare the plant assets section of Grand’s balance sheet at December 31, 2015.
   Total plant assets $61,760,000

P10-6A

Record disposals.
(LO 4)

Ceda Co. has equipment that cost $80,000 and that has been depreciated $50,000.

Instructions
Record the disposal under the following assumptions.
(a) It was scrapped as having no value.
(b) It was sold for $21,000.
   $9,000 loss
(c) It was sold for $31,000.

P10-7A

Prepare entries to record transactions related to acquisition and amortization of intangibles; prepare the intangible assets section.
(LO 6, 7)

The intangible assets section of Sappelt Company at December 31, 2014, is presented below.

<table>
<thead>
<tr>
<th>Intangible Asset</th>
<th>Cost</th>
<th>Amortization</th>
<th>Book Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patents</td>
<td>$70,000</td>
<td>$7,000</td>
<td>$63,000</td>
</tr>
<tr>
<td>Franchises</td>
<td>$48,000</td>
<td>$19,200</td>
<td>28,800</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>$91,800</td>
</tr>
</tbody>
</table>

The patent was acquired in January 2014 and has a useful life of 10 years. The franchise was acquired in January 2011 and also has a useful life of 10 years. The following cash transactions may have
affected intangible assets during 2015.

**Instructions**

(a) Prepare journal entries to record the transactions above.
(b) Prepare journal entries to record the 2015 amortization expense.
   
   | Amortization Expense (patents) $10,000 |
   | Amortization Expense (franchises) $5,500 |

(c) Prepare the intangible assets section of the balance sheet at December 31, 2015.
   
   Total intangible assets $243,300

P10-8A

Prepare entries to correct errors made in recording and amortizing intangible assets.

(LO 6)

Due to rapid turnover in the accounting department, a number of transactions involving intangible assets were improperly recorded by the Goins Company in 2014.

1. Goins developed a new manufacturing process, incurring research and development costs of $136,000. The company also purchased a patent for $60,000. In early January, Goins capitalized $196,000 as the cost of the patents. Patent amortization expense of $19,600 was recorded based on a 10-year useful life.

2. On July 1, 2014, Goins purchased a small company and as a result acquired goodwill of $92,000. Goins recorded a half-year's amortization in 2014, based on a 50-year life ($920 amortization). The goodwill has an indefinite life.

**Instructions**

Prepare all journal entries necessary to correct any errors made during 2014. Assume the books have not yet been closed for 2014.

1. R&D Exp. $136,000

P10-9A

Calculate and comment on asset turnover.

(LO 7)

LaPorta Company and Lott Corporation, 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.

**Instructions**

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

PROBLEMS: SET B

P10-1B

Determine acquisition costs of land and building.
Russo 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. Accrued real estate taxes paid at time of purchase of real estate $5,000
2. Real estate taxes on land paid for the current year 7,500
3. Full payment to building contractor 490,000
4. Excavation costs for new building 19,000
5. Cost of real estate purchased as a plant site (land $75,000 and building $25,000) 100,000
6. Cost of parking lots and driveways 18,000
7. Architect’s fees on building plans 9,000
8. Installation cost of fences around property 6,000
9. Cost of demolishing building to make land suitable for construction of new building 27,000
10. Proceeds from salvage of demolished building $3,500

**Credit**

Totals $681,500

**Instructions**

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

<table>
<thead>
<tr>
<th>Item</th>
<th>Land</th>
<th>Buildings</th>
<th>Other Accounts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Totals</td>
<td>$128,500</td>
<td>$518,000</td>
<td></td>
</tr>
</tbody>
</table>

P10-2B Compute depreciation under different methods.

(LO 2)

In recent years, Darnell Company purchased three machines. Because of heavy turnover in the accounting department, a different accountant was in charge of selecting the depreciation method for each machine, and each selected a different method. Information concerning the machines is summarized below.

<table>
<thead>
<tr>
<th>Machine</th>
<th>Acquired</th>
<th>Cost</th>
<th>Salvage Value</th>
<th>Useful Life in Years</th>
<th>Depreciation Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1/1/11</td>
<td>$105,000</td>
<td>$5,000</td>
<td>10</td>
<td>Straight-line</td>
</tr>
<tr>
<td>2</td>
<td>1/1/12</td>
<td>$180,000</td>
<td></td>
<td>8</td>
<td>Declining-balance</td>
</tr>
<tr>
<td>3</td>
<td>11/1/14</td>
<td>$125,000</td>
<td>$15,000</td>
<td>6</td>
<td>Units-of-activity</td>
</tr>
</tbody>
</table>

For the declining-balance method, the company uses the double-declining rate. For the units-of-activity method, total machine hours are expected to be 25,000. Actual hours of use in the first 3 years were 2014, 2,000; 2015, 4,500; and 2016, 5,500.

**Instructions**

(a) Compute the amount of accumulated depreciation on each machine at December 31, 2014.
Machine 2, 2013, $78,750

(b) If Machine 2 had been purchased on May 1 instead of January 1, what would be the depreciation expense for this machine in (1) 2012 and (2) 2013?

P10-3B

*Compute depreciation under different methods.*

(LO 2)

On January 1, 2014, Bourgeois Company purchased the following two machines for use in its production process.

**Machine A:** The cash price of this machine was $58,000. Related expenditures included: sales tax $2,750, shipping costs $100, insurance during shipping $75, installation and testing costs $75, and $90 of oil and lubricants to be used with the machinery during its first year of operation. Bourgeois estimates that the useful life of the machine is 4 years with a $5,000 salvage value remaining at the end of that time period.

**Machine B:** The recorded cost of this machine was $120,000. Bourgeois estimates that the useful life of the machine is 4 years with a $10,000 salvage value remaining at the end of that time period.

**Instructions**

(a) Prepare the following for Machine A.

1. The journal entry to record its purchase on January 1, 2014.
2. The journal entry to record annual depreciation at December 31, 2014, assuming the straight-line method of depreciation is used.

(2) $14,000

(b) Calculate the amount of depreciation expense that Bourgeois should record for Machine B each year of its useful life under the following assumption.

1. Bourgeois uses the straight-line method of depreciation.
2. Bourgeois uses the declining-balance method. The rate used is twice the straight-line rate.
3. Bourgeois uses the units-of-activity method and estimates the useful life of the machine is 25,000 units. Actual usage is as follows: 2014, 5,500 units; 2015, 7,000 units; 2016, 8,000 units; 2017, 4,500 units.

(c) Which method used to calculate depreciation on Machine B reports the lowest amount of depreciation expense in year 1 (2014)? The lowest amount in year 4 (2017)? The lowest total amount over the 4-year period?

P10-4B

*Calculate revisions to depreciation expense.*

(LO 2)

At the beginning of 2012, Sullivan Company acquired equipment costing $300,000. It was estimated that this equipment would have a useful life of 6 years and a salvage value of $30,000 at that time. The straight-line method of depreciation was considered the most appropriate to use with this type of equipment. Depreciation is to be recorded at the end of each year.

During 2014 (the third year of the equipment's life), the company's engineers reconsidered their expectations, and estimated that the equipment's useful life would probably be 7 years (in total)
instead of 6 years. The estimated salvage value was not changed at that time. However, during 2017 the estimated salvage value was reduced to $5,000.

**Instructions**

Indicate how much depreciation expense should be recorded for this equipment each year by completing the following table.

<table>
<thead>
<tr>
<th>Year</th>
<th>Depreciation Expense</th>
<th>Accumulated Depreciation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2018 depreciation expense, $48,500

**Journalize a series of equipment transactions related to purchase, sale, retirement, and depreciation.**

(LO 2, 4, 7)

At December 31, 2014, Torrealba Company reported the following as plant assets.

<table>
<thead>
<tr>
<th>Asset</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land</td>
<td>$2,000,000</td>
</tr>
<tr>
<td>Buildings</td>
<td>$20,000,000</td>
</tr>
<tr>
<td>Less: Accumulated depreciation—buildings</td>
<td>8,000,000</td>
</tr>
<tr>
<td>Equipment</td>
<td>$30,000,000</td>
</tr>
<tr>
<td>Less: Accumulated depreciation—equipment</td>
<td>4,000,000</td>
</tr>
<tr>
<td>Total plant assets</td>
<td>$40,000,000</td>
</tr>
</tbody>
</table>

During 2015, the following selected cash transactions occurred.

- April 1: Purchased land for $1,200,000.
- May 1: Sold equipment that cost $450,000 when purchased on January 1, 2011. The equipment was sold for $260,000.
- June 1: Sold land purchased on June 1, 2005, for $1,000,000. The land cost $340,000.
- July 1: Purchased equipment for $1,500,000.
- Dec. 31: Retired equipment that cost $300,000 when purchased on December 31, 2005. No salvage value was received.

**Instructions**

(a) Journalize the above transactions. Torrealba uses straight-line depreciation for buildings and equipment. The buildings are estimated to have a 50-year useful life and no salvage value. The equipment is estimated to have a 10-year useful life and no salvage value. Update depreciation on assets disposed of at the time of sale or retirement.

(b) Record adjusting entries for depreciation for 2015.

Depreciation Expense—Buildings $400,000; Equipment $3,000,000
(c) Prepare the plant assets section of Torrealba's balance sheet at December 31, 2015.

Total plant assets $38,660,000

P10-6B

Record disposals.

(LO 4)

Dickey's has equipment that cost $45,000 and that has been depreciated $26,000.

Instructions

Record the disposal under the following assumptions.

(a) It was scrapped as having no value.
(b) It was sold for $29,000.
10,000 gain
(c) It was sold for $10,000.

P10-7B

Prepare entries to record transactions related to acquisition and amortization of intangibles; prepare the intangible assets section.

(LO 6, 7)

The intangible assets section of Willingham Company at December 31, 2014, is presented below.

| Patents ($100,000 cost less $10,000 amortization) | $ 90,000 |
| Copyrights ($60,000 cost less $24,000 amortization) | 36,000 |
| Total | $126,000 |

The patent was acquired in January 2014 and has a useful life of 10 years. The copyright was acquired in January 2011 and also has a useful life of 10 years. The following cash transactions may have affected intangible assets during 2015.

Instructions

(a) Prepare journal entries to record the transactions above.
(b) Prepare journal entries to record the 2015 amortization expense for intangible assets.

Amortization Expense (patents) $14,000; Amortization Expense (copyrights) $7,500
(c) Prepare the intangible assets section of the balance sheet at December 31, 2015.

Total intangible assets, $440,500
(d) Prepare the note to the financials on Willingham's intangibles as of December 31, 2015.

P10-8B

Prepare entries to correct errors made in recording and amortizing intangible assets.

(LO 6)

Due to rapid turnover in the accounting department, a number of transactions involving intangible assets were improperly recorded by Farnsworth Company in 2014.

1. Farnsworth developed a new manufacturing process, incurring research and development costs of $110,000. The company also purchased a patent for $50,000. In early January, Farnsworth capitalized $160,000 as the cost of the patents. Patent amortization expense of $16,000 was
recorded based on a 10-year useful life.

2. On July 1, 2014, Farnsworth purchased a small company and as a result acquired goodwill of $200,000. Farnsworth recorded a half-year's amortization in 2014, based on a 50-year life ($2,000 amortization). The goodwill has an indefinite life.

Instructions
Prepare all journal entries necessary to correct any errors made during 2014. Assume the books have not yet been closed for 2014.

R&D Exp. $110,000

P10-9B

Calculate and comment on asset turnover.

(LO 7)

Auer Corporation and Marte Corporation, two corporations of roughly the same size, are both involved in the manufacture of canoes and sea kayaks. Each company depreciates its plant assets using the straight-line approach. An investigation of their financial statements reveals the following information.

<table>
<thead>
<tr>
<th></th>
<th>Auer Corp.</th>
<th>Marte Corp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net income</td>
<td>$ 300,000</td>
<td>$ 325,000</td>
</tr>
<tr>
<td>Sales revenue</td>
<td>1,050,000</td>
<td>945,000</td>
</tr>
<tr>
<td>Average total assets</td>
<td>1,000,000</td>
<td>1,050,000</td>
</tr>
<tr>
<td>Average plant assets</td>
<td>750,000</td>
<td>770,000</td>
</tr>
</tbody>
</table>

Instructions
(a) For each company, calculate the asset turnover.

(b) Based on your calculations in part (a), comment on the relative effectiveness of the two companies in using their assets to generate sales and produce net income.

QUESTIONS

10-1.
Sid Watney is uncertain about the applicability of the historical cost principle to plant assets. Explain the principle to Sid.

10-2.
What are some examples of land improvements?

10-3.
Lynn Company acquires the land and building owned by Noble Company. What types of costs may be incurred to make the asset ready for its intended use if Lynn Company wants to use (a) only the land, and (b) both the land and the building?

10-4.

In a recent newspaper release, the president of Downs Company asserted that something has to be done about depreciation. The president said, “Depreciation does not come close to accumulating the cash needed to replace the asset at the end of its useful life.” What is your response to the president?

10-5.

Andrew is studying for the next accounting examination. He asks your help on two questions: (a) What is salvage value? (b) Is salvage value used in determining periodic depreciation under each depreciation method? Answer Andrew's questions.

10-6.

Contrast the straight-line method and the units-of-activity method as to (a) useful life, and (b) the pattern of periodic depreciation over useful life.

10-7.

Contrast the effects of the three depreciation methods on annual depreciation expense.

10-8.

In the fourth year of an asset's 5-year useful life, the company decides that the asset will have a 6-year service life. How should the revision of depreciation be recorded? Why?

10-9.

Distinguish between revenue expenditures and capital expenditures during useful life.

10-10.

How is a gain or loss on the sale of a plant asset computed?

10-11.

Romero Corporation owns a machine that is fully depreciated but is still being used. How should Romero account for this asset and report it in the financial statements?

10-12.

What are natural resources, and what are their distinguishing characteristics?

10-13.

Explain what depletion is and how it is computed.

10-14.

What are the similarities and differences between the terms depreciation, depletion, and amortization?

10-15.

Rowand Company hires an accounting intern who says that intangible assets should always be amortized over their legal lives. Is the intern correct? Explain.

10-16.

Goodwill has been defined as the value of all favorable attributes that relate to a business. What types of attributes could result in goodwill?

10-17.

Jimmy West, a business major, is working on a case problem for one of his classes. In the case problem, the company needs to raise cash to market a new product it developed. Ron Thayer, an engineering major, takes one look at the company's balance sheet and says, “This company has an awful lot of goodwill. Why don't you recommend that they sell some of it to raise cash?” How should Jimmy respond to Ron?

10-18.

Under what conditions is goodwill recorded?

10-19.

Often, research and development costs provide companies with benefits that last a number of years. (For example, these costs can lead to the development of a patent that will increase the company's income for many years.) However, generally accepted accounting principles require that such costs be recorded as an expense when incurred. Why?

10-20.

McDonald's Corporation reports total average assets of $28.9 billion and net sales of $20.5 billion.
What is the company's asset turnover?

10-21. Stark Corporation and Zuber Corporation operate in the same industry. Stark uses the straight-line method to account for depreciation; Zuber uses an accelerated method. Explain what complications might arise in trying to compare the results of these two companies.

10-22. Gomez Corporation uses straight-line depreciation for financial reporting purposes but an accelerated method for tax purposes. Is it acceptable to use different methods for the two purposes? What is Gomez's motivation for doing this?

10-23. You are comparing two companies in the same industry. You have determined that Ace Corp. depreciates its plant assets over a 40-year life, whereas Liu Corp. depreciates its plant assets over a 20-year life. Discuss the implications this has for comparing the results of the two companies.

10-24. Sosa Company is doing significant work to revitalize its warehouses. It is not sure whether it should capitalize these costs or expense them. What are the implications for current-year net income and future net income of expensing versus capitalizing these costs?

10-25. When assets are exchanged in a transaction involving commercial substance, how is the gain or loss on disposal of plant assets computed?

10-26. Unruh Refrigeration Company trades in an old machine on a new model when the fair value of the old machine is greater than its book value. The transaction has commercial substance. Should Unruh recognize a gain on disposal of plant assets? If the fair value of the old machine is less than its book value, should Unruh recognize a loss on disposal of plant assets?