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EXERCISES

Preparing a Classified Balance Sheet

E8-1
LO1
Hasbro, Inc.

The following is a list of account titles and amounts (dollars in millions) reported by Hasbro, Inc., a leading manufacturer of games, toys, and interactive entertainment software for children and families:

Buildings and improvements	$206	Goodwill	$ 464
Prepaid expenses and other current assets	212	Machinery and equipment	304
Allowance for doubtful accounts	39	Accumulated depreciation	358
Other noncurrent assets	280	Inventories	169
Accumulated amortization (other intangibles)	435	Other intangibles	1,146
Cash and cash equivalents	521	Land and improvements	18
		Accounts receivable	646
		Tools, dies, and molds	30

Required:
Prepare the asset section of the balance sheet for Hasbro, Inc., classifying the assets into Current Assets, Property, Plant, and Equipment (net), and Other Assets.

Computing and Interpreting the Fixed Asset Turnover Ratio from a Financial Analyst's Perspective

E8-2
LO1
Apple Inc.

The following data were included in a recent Apple Inc. annual report ($ in millions):

In millions	2007	2006	2005	2004
Net sales	$24,006	19,315	13,931	8,279
Net property, plant, and equipment	$ 1,832	1,281	817	707

Required:

1. Compute Apple's fixed asset turnover ratio for 2005, 2006, and 2007.
2. How might a financial analyst interpret the results?

E8-3 Computing and Recording Cost and Depreciation of Assets (Straight-Line Depreciation)
LO2, 3

KD Company bought a building for $71,000 cash and the land on which it is located for $107,000 cash. The company paid transfer costs of $3,000 ($1,000 for the building and $2,000 for the land). Renovation costs on the building were $23,000.

Required:

1. Give the journal entry to record the purchase of the property, including all expenditures. Assume that all transactions were for cash and that all purchases occurred at the start of the year.
2. Compute straight-line depreciation at the end of one year, assuming an estimated 10-year useful life and a $15,000 estimated residual value.
3. What would be the net book value of the property (land and building) at the end of year 2?

E8-4 Determining Financial Statement Effects of an Asset Acquisition and Depreciation (Straight-Line Depreciation)
LO2, 3

Kalriess Company ordered a machine on January 1, 2011, at an invoice price of $21,000. On date of delivery, January 2, 2011, the company paid $8,000 on the machine, and the balance was on credit at 10 percent interest. On January 3, 2011, it paid $1,000 for freight on the machine. On January 5, Kalreiss paid installation costs relating to the machine amounting to $1,500. On July 1, 2011, the company paid the balance due on the machine plus the interest. On December 31, 2011 (the end of the accounting period), Kalriess recorded depreciation on the machine using the straight-line method with an estimated useful life of 10 years and an estimated residual value of $3,500.

Required (round all amounts to the nearest dollar):

1. Indicate the effects (accounts, amounts, and + or −) of each transaction (on January 1, 2, 3, 5, and July 1) on the accounting equation. Use the following schedule:

Date	Assets	=	Liabilities	+	Stockholders' Equity

2. Compute the acquisition cost of the machine.
3. Compute the depreciation expense to be reported for 2011.
4. What is the impact on the cost of the machine of the interest paid on the 10 percent note? Under what circumstances can interest expense be included in acquisition cost?
5. What would be the net book value of the machine at the end of 2012?

E8-5 Recording Depreciation and Repairs (Straight-Line Depreciation)
LO2, 3

Stacey Company operates a small manufacturing facility as a supplement to its regular service activities. At the beginning of 2010, an asset account for the company showed the following balances:

Manufacturing equipment	$100,000
Accumulated depreciation through 2009	66,000

During 2010, the following expenditures were incurred for the equipment:

Routine maintenance and repairs on the equipment	$ 1,000
Major overhaul of the equipment that improved efficiency	12,000

The equipment is being depreciated on a straight-line basis over an estimated life of 15 years with a $10,000 estimated residual value. The annual accounting period ends on December 31.

Required:

1. Give the adjusting entry that was made at the end of 2009 for depreciation on the manufacturing equipment.
2. Starting at the beginning of 2010, what is the remaining estimated life?
3. Give the journal entries to record the two expenditures during 2010.

Determining Financial Statement Effects of Depreciation and Repairs (Straight-Line Depreciation) E8-6 LO2, 3

Refer to the information in E8–5.

Required:
Indicate the effects (accounts, amounts, and + or −) of the following on the accounting equation.

Date	Assets	=	Liabilities	+	Stockholders' Equity

1. The adjustment for depreciation at the end of 2009.
2. The two expenditures during 2010.

Computing Depreciation under Alternative Methods E8-7 LO3

Rita's Pita Company bought a new dough machine at the beginning of the year at a cost of $6,000. The estimated useful life was four years, and the residual value was $1,000. Assume that the estimated productive life of the machine was 9,000 hours. Actual annual usage was 3,600 hours in year 1; 2,700 hours in year 2; 1,800 hours in year 3; and 900 hours in year 4.

Required:
1. Complete a separate depreciation schedule for each of the alternative methods. Round your answers to the nearest dollar.
   a. Straight-line.
   b. Units-of-production (use four decimal places for the per unit output factor).
   c. Double-declining-balance.

Method: _____

Year	Computation	Depreciation Expense	Accumulated Depreciation	Net Book Value
At acquisition				
1				
2				
etc.				

2. Assuming that the machine was used directly in the production of one of the products that the company manufactures and sells, what factors might management consider in selecting a preferable depreciation method in conformity with the matching principle?

Computing Depreciation under Alternative Methods E8-8 LO3

Alexa Plastics Company purchased a new stamping machine at the beginning of the year at a cost of $280,000. The estimated residual value was $30,000. Assume that the estimated useful life was five years, and the estimated productive life of the machine was 250,000 units. Actual annual production was as follows:

Year	Units
1	73,000
2	62,000
3	30,000
4	43,000
5	42,000

Required:
1. Complete a separate depreciation schedule for each of the alternative methods. Round your answers to the nearest dollar.
   a. Straight-line.
   b. Units-of-production.
   c. Double-declining-balance.

Method: _____

Year	Computation	Depreciation Expense	Accumulated Depreciation	Net Book Value
At acquisition				
1				
2				
etc.				

2. Assuming that the machine was used directly in the production of one of the products that the company manufactures and sells, what factors might management consider in selecting a preferable depreciation method in conformity with the matching principle?

E8-9 Explaining Depreciation Policy

LO3

Ford Motor Company

A recent annual report for Ford Motor Company contained the following note:

> **Significant Accounting Policies**
>
> ***Depreciation and Amortization of Property, Plant, and Equipment***
>
> Property and equipment are stated at cost and depreciated primarily using the straight-line method over the estimated useful life of the asset. Special tools placed in service before January 1, 1999 are amortized using an accelerated method over the estimated life of those tools. Special tools placed in service beginning in 1999 are amortized using the units-of-production method. Maintenance, repairs, and rearrangement costs are expensed as incurred.

Required:

Why do you think the company changed its depreciation method for special tools acquired in 1999 and subsequent years?

E8-10 Interpreting Management's Choice of Different Depreciation Methods for Tax and Financial Reporting

LO3

FedEx

A recent annual report for Federal Express Corporation includes the following information:

> For financial reporting purposes, depreciation and amortization of property and equipment is provided on a straight-line basis over the asset's service life. For income tax purposes, depreciation is generally computed using accelerated methods.

Required:

Explain why Federal Express uses different methods of depreciation for financial reporting and tax purposes.

E8-11 Computing Depreciation and Book Value for Two Years Using Alternative Depreciation Methods and Interpreting the Impact on Cash Flows

LO3, 7

Daisey Company bought a machine for $66,000 cash. The estimated useful life was four years, and the estimated residual value was $6,000. Assume that the estimated useful life in productive units is 120,000. Units actually produced were 43,000 in year 1 and 45,000 in year 2.

Required:

1. Determine the appropriate amounts to complete the following schedule. Show computations, and round to the nearest dollar.

	Depreciation Expense for		Net Book Value at the End of	
Method of Depreciation	Year 1	Year 2	Year 1	Year 2
Straight-line				
Units-of-production				
Double-declining-balance				

2. Which method would result in the lowest EPS for year 1? For year 2?

3. Which method would result in the highest amount of cash outflows in year 1? Why?
4. Indicate the effects of (*a*) acquiring the machine and (*b*) recording annual depreciation on the operating and investing activities sections of the statement of cash flows (indirect method) for year 1 (assume the straight-line method).

Inferring Asset Impairment and Recording Disposal of an Asset

E8-12
LO4, 5
United Parcel Service Inc.

United Parcel Service states in a recent 10-K report, "We are the world's largest package delivery company and a leading global provider of specialized transportation and logistics services." The following note and data were reported:

> **Note 1—Summary of Accounting Policies**
>
> ***Impairment of Long-Lived Assets***
>
> We review long-lived assets for impairment when circumstances indicate the carrying amount of an asset may not be recoverable based on the undiscounted future cash flows of the asset. . . . In December (of a recent year), we permanently removed from service a number of Boeing 727 and DC-8 aircraft. As a result, we conducted an impairment evaluation, which resulted in. . . .

	Dollars in Millions
Cost of property and equipment (beginning of year)	$25,361
Cost of property and equipment (end of year)	26,915
Capital expenditures during the year	1,947
Accumulated depreciation (beginning of year)	11,749
Accumulated depreciation (end of year)	13,007
Depreciation expense during the year	1,549
Cost of property and equipment sold during the year	318
Accumulated depreciation on property sold	291
Cash received on property sold	118

Required:

1. Reconstruct the journal entry for the disposal of property and equipment during the year.
2. Compute the amount of property and equipment that United Parcel wrote off as impaired during the year. (**Hint:** Set up T-accounts.)

Recording the Disposal of an Asset at Three Different Sale Prices

E8-13
LO5
FedEx

Federal Express is the world's leading express-distribution company. In addition to the world's largest fleet of all-cargo aircraft, the company has more than 669 aircraft and 53,000 vehicles and trailers that pick up and deliver packages. Assume that Federal Express sold a small delivery truck that had been used in the business for three years. The records of the company reflected the following:

Delivery truck cost	$28,000
Accumulated depreciation	23,000

Required:

1. Give the journal entry for the disposal of the truck, assuming that the truck sold for
   a. $5,000 cash
   b. $5,600 cash
   c. $4,600 cash
2. Based on the three preceding situations, explain the effects of the disposal of an asset.

Recording the Disposal of an Asset at Three Different Sale Prices

E8-14
LO5

Trump Entertainment Resorts owns and manages three casino hotel properties, Trump Plaza Hotel and Casino, Trump Taj Mahal Casino Resort, and Trump Marina Hotel Casino, totaling over $1.5 billion in property and equipment. Assume that Trump replaced furniture in one of the hotels that had been used in the business for five years. The records of the company reflected the following regarding the sale of the existing furniture:

Furniture (cost)	$8,000,000
Accumulated depreciation	6,500,000

Required:

1. Give the journal entry for the disposal of the furniture, assuming that it was sold for
   a. $1,500,000 cash.
   b. $2,600,000 cash.
   c. $900,000 cash.
2. Based on the three preceding situations, explain the effects of the disposal of an asset.

E8-15 LO5 Inferring Asset Age and Recording Accidental Loss on a Long-Lived Asset (Straight-Line Depreciation)

On January 1, 2010, the records of Pastuf Corporation showed the following regarding a truck:

Equipment (estimated residual value, $4,000)	$18,000
Accumulated depreciation (straight-line, three years)	6,000

On December 31, 2010, the delivery truck was a total loss as the result of an accident.

Required:

1. Based on the data given, compute the estimated useful life of the truck.
2. Give all journal entries with respect to the truck on December 31, 2010. Show computations.

E8-16 LO6 Freeport-McMoRan Copper & Gold Inc. Computing the Acquisition and Depletion of a Natural Resource

Freeport-McMoRan Copper & Gold Inc. is one of the world's largest copper and gold mining and production companies with the majority of its natural resources in Indonesia. Annual revenues exceed $16 billion. Assume that in February 2011, Freeport-McMoRan paid $700,000 for a mineral deposit in Bali. During March, it spent $65,000 in preparing the deposit for exploitation. It was estimated that 900,000 total cubic yards could be extracted economically. During 2011, 60,000 cubic yards were extracted. During January 2012, the company spent another $6,000 for additional developmental work that increased the estimated productive capacity of the mineral deposit.

Required:

1. Compute the acquisition cost of the deposit in 2011.
2. Compute depletion for 2011.
3. Compute the net book value of the deposit after payment of the January 2012 developmental costs.

E8-17 LO6 Computing and Reporting the Acquisition and Amortization of Three Different Intangible Assets

Katie Company had three intangible assets at the end of 2010 (end of the accounting year):

a. A patent purchased from J. Miller on January 1, 2010, for a cash cost of $6,000. Miller had registered the patent with the U.S. Patent Office five years ago.
b. An internally developed trademark registered with the federal government for $12,000 on November 1, 2010. Management decided the trademark has an indefinite life.
c. Computer software and Web development technology purchased on January 1, 2009, for $65,000. The technology is expected to have a four-year useful life to the company.

Required:

1. Compute the acquisition cost of each intangible asset.
2. Compute the amortization of each intangible at December 31, 2010. The company does not use contra-accounts.
3. Show how these assets and any related expenses should be reported on the balance sheet and income statement for 2010.

E8-18 LO6 Computing and Reporting the Acquisition and Amortization of Three Different Intangible Assets

Cambridge Company had three intangible assets at the end of 2012 (end of the accounting year):

a. A copyright purchased on January 1, 2011 for a cash cost of $12,300. The copyright is expected to have a ten-year useful life to Cambridge.
b. Goodwill of $65,000 from the purchase of the Hartford Company on July 1, 2010.

c. A patent purchased on January 1, 2012 for $39,200 from the inventor who had registered the patent with the U.S. Patent Office on January 1, 2006.

Required:

1. Compute the acquisition cost of each intangible asset.
2. Compute the amortization of each intangible at December 31, 2012. The company does not use contra-accounts.
3. Show how these assets and any related expenses should be reported on the balance sheet and income statement for 2012. (Assume there has been no impairment of goodwill.)

Recording Leasehold Improvements and Related Amortization

E8-19
LO6
Starbucks Corporation

Starbucks Corporation is a rapidly expanding retailer of specialty coffee with thousands of stores worldwide. Assume that Starbucks planned to open a new store on Commonwealth Avenue near Boston University and obtained a 20-year lease starting January 1, 2011. The company had to renovate the facility by installing an elevator costing $275,000. Amounts spent to enhance leased property are capitalized as intangible assets called Leasehold Improvements. The elevator will be amortized over the useful life of the lease.

Required:

1. Give the journal entry to record the installation of the new elevator.
2. Give any adjusting entries required at the end of the annual accounting period on December 31, 2011, related to the new elevator. Show computations.

Finding Financial Information as a Potential Investor

E8-20
LO1, 2, 3, 4, 5, 6, 7

You are considering investing the cash gifts you received for graduation in various stocks. You have received several annual reports of major companies.

Required:

For each of the following, indicate where you would locate the information in an annual report. (**Hint**: The information may be in more than one location.)

1. The detail on major classifications of long-lived assets.
2. The accounting method(s) used for financial reporting purposes.
3. Whether the company has had any capital expenditures for the year.
4. Net amount of property, plant, and equipment.
5. Policies on amortizing intangibles.
6. Depreciation expense.
7. Any significant gains or losses on disposals of fixed assets.
8. Prior year's accumulated depreciation.
9. The amount of assets written off as impaired during the year.

(Supplement) Recording a Change in Estimate

E8-21
LO3

Refer to E8-5.

Required:

Give the adjusting entry that should be made at the end of 2010 for depreciation of the manufacturing equipment, assuming no change in the original estimated life or residual value. Show computations.

(Supplement) Recording and Explaining Depreciation, Extraordinary Repairs, and Changes in Estimated Useful Life and Residual Value (Straight-Line Depreciation)

E8-22
LO2, 3

At the end of the annual accounting period, December 31, 2011, Shafer Company's records reflected the following for Machine A:

Cost when acquired	$30,000
Accumulated depreciation	10,200

During January 2012, the machine was renovated at a cost of $14,000. As a result, the estimated life increased from five years to eight years, and the residual value increased from $4,500 to $6,500. The company uses straight-line depreciation.

Required:

1. Give the journal entry to record the renovation.
2. How old was the machine at the end of 2011?
3. Give the adjusting entry at the end of 2012 to record straight-line depreciation for the year.
4. Explain the rationale for your entries in requirements 1 and 3.

E8-23 (Supplement) Computing the Effect of a Change in Useful Life and Residual Value on Financial Statements and Cash Flows (Straight-Line Depreciation)
L03, 7

Todd Company owns the building occupied by its administrative office. The office building was reflected in the accounts at the end of last year as follows:

Cost when acquired	$330,000
Accumulated depreciation (based on straight-line depreciation, an estimated life of 30 years, and a $30,000 residual value)	130,000

During January of this year, on the basis of a careful study, management decided that the total estimated useful life should be changed to 25 years (instead of 30) and the residual value reduced to $23,000 (from $30,000). The depreciation method will not change.

Required:

1. Compute the annual depreciation expense prior to the change in estimates.
2. Compute the annual depreciation expense after the change in estimates.
3. What will be the net effect of changing estimates on the balance sheet, net income, and cash flows for the year?

EXERCISES

E8–1.

Hasbro, Inc.
Excerpts from Balance Sheet
(in millions)

ASSETS	
Current Assets	
Cash and cash equivalents	$ 521
Accounts receivable (net of allowance for doubtful accounts, $39)	607
Inventories	169
Prepaid expenses and other current assets	212
Total current assets	1,509
Property, Plant, and Equipment	
Tools, dies and molds	30
Machinery and equipment	304
Buildings and improvements	206
Land and improvements	18
Property, plant, and equipment (at cost)	558
Less: Accumulated depreciation	358
Total property, plant, and equipment (net)	200
Other Assets	
Goodwill	464
Other intangibles (net of accumulated amortization, $435)	711
Other noncurrent assets	280
Total other assets	1,455
Total Assets	$3,164

E8–2.

Req. 1

Fixed asset turnover ratio: (in millions)
Sales ÷ [(beginning net fixed assets + ending net fixed assets) ÷ 2]

2007	2006	2005
$24,006 ÷ $1,556.5	$19,315 ÷ $1,049	$13,931 ÷ $762
15.42	18.41	18.28

Computation of denominator:

2007	($1,832 + 1,281) ÷ 2	= $1,556.5
2006	($1,281 + 817) ÷ 2	= $1,049
2005	($817 + 707) ÷ 2	= $ 762

Req. 2

Apple's fixed asset turnover ratio rose slightly in 2006, then fell to 15.42 in 2007. This suggests that Apple's management became less efficient at utilizing its long-lived assets over time. The decrease in 2007 was due primarily to a large increase in fixed assets that year. Although the turnover has declined, it is possible that the build-up of fixed assets may lead to increased sales in the future, thus increasing the fixed asset turnover ratio to prior levels. An analyst can use this longitudinal analysis to observe possible trends over time. In addition, the analyst may compare Apple's ratios to those of competitors in the industry.

E8–3

Req. 1

Building (+A)	95,000	
Land (+A)	109,000	
Cash (–A)		204,000

	Building	Land
Cash paid	$71,000	$107,000
+ renovations to prepare for use	23,000	
+ share of transfer costs	1,000	2,000
	$95,000	$109,000

Req. 2

Straight-line depreciation computation:
($95,000 cost - $15,000 residual value) x 1/10 years = $8,000 depreciation expense per year
Note: Land is not depreciated.

Req. 3

Computation of the book value of the property at the end of year 2:

Building	$ 95,000	
Less: Accumulated depreciation ($8,000 x 2 years)	(16,000)	$ 79,000
Land		109,000
		$188,000

E8–4.

Req. 1

Date	Assets		Liabilities		Stockholders' Equity	
January 1	No effect		No effect		No effect	
January 2	Cash Equipment	–8,000 +21,000	Short term note payable	+13,000		
January 3	Cash Equipment	–1,000 +1,000				
January 5	Cash Equipment	–1,500 +1,500				
July 1	Cash	–13,650	Short term note payable	–13,000	Interest expense*	–650

* $13,000 principal x .10 interest rate x 6/12 of a year = $650 interest

Req. 2

Acquisition cost of the machine:

Cash paid	$ 8,000
Note payable with supplier	13,000
Freight costs	1,000
Installation costs	1,500
Acquisition cost	$23,500

Req. 3

Depreciation for 2011: ($23,500 cost - $3,500 residual value) x 1/10 years $ 2,000

Req. 4

On July 1, 2011, $650 ($13,000 x 10% x 6/12) is paid and is recorded as interest expense. The amount is not capitalized (added to the cost of the asset) because interest is capitalized only on constructed assets. This machine was purchased.

Req. 5

Equipment (cost)	$23,500
Less: Accumulated depreciation ($2,000 x 2 years)	4,000
Book value at end of 2012	$19,500

E8–5.

Req. 1

Adjusting entry for 2009:

Depreciation expense (+E, –SE)	6,000	
Accumulated depreciation, equipment (+XA, –A)		6,000

($100,000 – $10,000) x 1/15 years = $6,000

Req. 2 (beginning of 2010)

Remaining life: 15 years – ($66,000 ÷ $6,000 = 11 years used) = 4 years remaining

Req. 3 (during 2010):

Repair and maintenance expense (+E, –SE)	1,000	
Cash (–A)		1,000

(Ordinary repairs incurred.)

Equipment (+A)	12,000	
Cash (–A)		12,000

Extraordinary repairs incurred and capitalized.

E8–6.

Date	Assets	Liabilities	Stockholders' Equity
1. 2009*	Accumulated depreciation –6,000		Depreciation expense –6,000
2a. 2010	Cash –1,000		Repair and maintenance expense –1,000
2b. 2010	Cash –12,000 Equipment +12,000		

* Adjusting entry for 2009:

($100,000 cost – $10,000 residual value) x 1/15 years = $6,000.

E8–7.

Req. 1

a. Straight-line:

Year	Computation	Depreciation Expense	Accumulated Depreciation	Net Book Value
At acquisition				$6,000
1	($6,000 - $1,000) x 1/4	$1,250	$1,250	4,750
2	($6,000 - $1,000) x 1/4	1,250	2,500	3,500
3	($6,000 - $1,000) x 1/4	1,250	3,750	2,250
4	($6,000 - $1,000) x 1/4	1,250	5,000	1,000

b. Units-of-production: ($6,000 – $1,000) ÷ 9,000 = $0.5556 per hour of output

Year	Computation	Depreciation Expense	Accumulated Depreciation	Net Book Value
At acquisition				$6,000
1	$0.5556 x 3,600 hours	$2,000	$2,000	4,000
2	$0.5556 x 2,700 hours	1,500	3,500	2,500
3	$0.5556 x 1,800 hours	1,000	4,500	1,500
4	$0.5556 x 900 hours	500	5,000	1,000

E8–7 (continued)

c. Double-declining-balance:

Year	Computation	Depreciation Expense	Accumulated Depreciation	Net Book Value
At acquisition				$6,000
1	($6,000 - $0) x 2/4	$3,000	$3,000	3,000
2	($6,000 - $3,000) x 2/4	1,500	4,500	1,500
3	($6,000 - $4,500) x 2/4	~~750~~	~~5,250~~	~~750~~
		500	5,000	1,000
4		0	0	0

Too large. Net book value cannot be below residual value.

Req. 2

If the machine is used evenly throughout its life and its efficiency (economic value in use) is expected to decline steadily each period over its life, then straight-line depreciation would be preferable. If the machine is used at a consistent rate but the efficiency is expected to decline faster in the earlier years of its useful life, then an accelerated method would be appropriate [such as, double-declining-balance]. If the machine is used at different rates over its useful life and its efficiency declines with output, then the units-of-production method would be preferable because it would result in a better matching of depreciation expense with revenue earned.

For income tax purposes, accelerated methods may be advantageous, because an earlier tax deduction is preferable to a later tax deduction because of the time value of money. However, the accelerated methods may not satisfy the matching principle.

E8–8.

Req. 1

a. Straight-line:

Year	Computation	Depreciation Expense	Accumulated Depreciation	Net Book Value
At acquisition				$280,000
1	($280,000 - $30,000) x 1/5	$50,000	$50,000	230,000
2	($280,000 - $30,000) x 1/5	50,000	100,000	180,000
3	($280,000 - $30,000) x 1/5	50,000	150,000	130,000
4	($280,000 - $30,000) x 1/5	50,000	200,000	80,000
5	($280,000 - $30,000) x 1/5	50,000	250,000	30,000

b. Units-of-production: ($280,000 – $30,000) ÷ 250,000 = $1.00 per unit of output

Year	Computation	Depreciation Expense	Accumulated Depreciation	Net Book Value
At acquisition				$280,000
1	$1.00 x 73,000 units	$73,000	$73,000	207,000
2	$1.00 x 62,000 units	62,000	135,000	145,000
3	$1.00 x 30,000 units	30,000	165,000	115,000
4	$1.00 x 43,000 units	43,000	208,000	72,000
5	$1.00 x 42,000 units	42,000	250,000	30,000

E8–8. (continued)

c. Double-declining-balance:

Year	Computation	Depreciation Expense	Accumulated Depreciation	Net Book Value
At acquisition				$280,000
1	($280,000 - 0) x 2/5	$112,000	$112,000	168,000
2	($280,000 - 112,000) x 2/5	67,200	179,200	100,800
3	($280,000 - 179,200) x 2/5	40,320	219,520	60,480
4	($280,000 - 219,520) x 2/5	24,192	243,712	36,288
5	($280,000 - 243,712) x 2/5	~~14,515~~	~~258,227~~	~~21,773~~
		6,288	250,000	30,000

Too large. Net book value cannot be below residual value.

Req. 2

If the machine is used evenly throughout its life and its efficiency (economic value in use) is expected to decline steadily each period over its life, then straight-line depreciation would be preferable. If the machine is used at a consistent rate but the efficiency is expected to decline faster in the earlier years of its useful life, then an accelerated method would be appropriate [such as, double-declining-balance]. If the machine is used at different rates over its useful life and its efficiency declines with output, then the units-of-production method would be preferable because it would result in a better matching of depreciation expense with revenue earned.

For income tax purposes, accelerated methods may be advantageous, because an earlier tax deduction is preferable to a later tax deduction because of the time value of money. However, the accelerated methods may not satisfy the matching principle.

E8–9.

Management of Ford Motor Company probably anticipated that the pre-1999 tools would be more productive or efficient in the earlier part of their lives than in the later. Thus, the accelerated method would provide the best matching of expenses with revenues in the same period. In 1999, however, Ford's management may have recognized a change in the technology of the special tools such that a better matching would occur using the units-of-production method in which the amount of the depreciation expense that would be computed varies by actual production levels each period.

E8–10.

Straight-line depreciation (SL) is a simple method to use and understand. Managers often prefer SL because it results in lower depreciation expense and higher net income in the earlier years of an asset's life when compared with the accelerated methods. Because SL depreciation results in higher income, it is not desirable to use it for tax reporting purposes with the objective of lowering tax liabilities. By using SL depreciation instead of an accelerated method in the earlier years for tax purposes, a company would have to pay higher taxes. In any case, the tax code specifies that MACRS, an accelerated method, must be used for most tangible depreciable property placed in service after December 31, 1986. It is important to note, however, that, over the entire useful life of an asset, total depreciation expense is the same regardless of the method.

E8–11.

Req. 1

	Depreciation Expense		*Book Value at End of*	
Method of Depreciation	*Year 1*	*Year 2*	*Year 1*	*Year 2*
Straight-line	$15,000	$15,000	$51,000	$36,000
Units-of-production	21,500	22,500	44,500	22,000
Double-declining-balance	33,000	16,500	33,000	16,500

Computations:

Amount to be depreciated: $66,000 – $6,000 = $60,000:

Straight-line: $60,000 ÷ 4 years = $15,000 per year

Units-of-production: $60,000 ÷ 120,000 units = $.50 per unit

Year 1: 43,000 x $.50 = $21,500

Year 2: 45,000 x $.50 = $22,500

Double-declining-balance (Rate: 2 x the straight line rate of 25% (2/4) = 50%):

Year 1: $66,000 x 50% = $33,000

Year 2: ($66,000 – $33,000) x 50% = $16,500

Req. 2

The double-declining balance method would result in the lowest EPS for Year 1 because it produced the highest depreciation expense and therefore the lowest income (from Requirement 1). In Year 2, the units-of-production method would result in the lowest EPS because it produced the highest depreciation expense and therefore the lowest income in that year.

Req. 3

Depreciation is a noncash expense; that is, no cash is paid when depreciation is recognized. Ignoring income tax implications, all methods have the same impact on cash flows in year 1. Assuming a method is applied for tax determination, the straight-line method will result in the lowest expense, highest net income, highest tax liability, and therefore the highest amount of cash outflows in year 1. Companies will select methods for tax purposes that reduce tax obligations.

Req. 4

The machine acquisition would decrease cash provided by investing activities by the purchase cost of $66,000. As a noncash expense, the annual depreciation should have no overall effect on cash provided by operating activities—however, because it is originally subtracted to arrive at net income, an adjustment needs to be made to reverse this effect for cash flows. Hence, $15,000 (the annual straight-line depreciation) must be added back to net income in the operating section of the statement of cash flows.

E8–12.

Req. 1

Property, Plant, and Equipment

Beg. Bal	25,361	318	Property sold
Capital expenditures	1,947	75	Write-offs
End. Bal.	26,915		

Accumulated Depreciation

Property sold	291	11,749	Beg. bal.
		1,549	Depreciation expense
		13,007	End. bal.

Disposal of property and equipment:

Cash (+A)	118	
Accumulated depreciation (–XA, +A)	291	
Property and equipment (–A)		318
Gain on sale of property and equipment (+Gain, +SE)		91

Req. 2

Amount of property and equipment written off as impaired during the year:

Beginning balance	$25,361
+ Capital expenditures during year	1,947
- Cost of property sold during year	(318)
- Impairment loss during year	(?)
Ending balance	$26,915

Impairment loss = $75

E8–13.

Req. 1a

Cash (+A)	5,000	
Accumulated depreciation (–XA, +A)	23,000	
Delivery truck (–A)		28,000

Sale of an asset at book value; the result is no loss or gain.

Req. 1b

Cash (+A)	5,600	
Accumulated depreciation (–XA, +A)	23,000	
Gain on sale of long-lived asset (+Gain, +SE)		600
Delivery truck (–A)		28,000

Sale of an asset above book value; the result is a gain.

Req. 1c

Cash (+A)	4,600	
Accumulated depreciation (–XA, +A)	23,000	
Loss on sale of long-lived asset (+Loss, –SE)	400	
Delivery truck (–A)		28,000

Sale of an asset below book value; the result is a loss.

Req. 2 Summarization of the effects of the disposal:

1. The loss or gain on disposal of a long-lived asset is the difference between the disposal price and the book value at date of disposal.
2. When the disposal price is the same as the book value there is no loss or gain; when the price is above book value there is a gain; and when the price is below book value, there is a loss on disposal.
3. The book value does not purport to be market value, so a loss or gain on disposal of a long-lived asset normally would occur.

E8–14.

Req. 1a

Cash (+A)	1,500,000	
Accumulated depreciation (–XA, +A)	6,500,000	
Furniture (–A)		8,000,000

Sale of an asset at book value; the result is no loss or gain.

Req. 1b

Cash (+A)	2,600,000	
Accumulated depreciation (–XA, +A)	6,500,000	
Gain on sale of long-lived asset (+Gain, +SE)		1,100,000
Furniture (–A)		8,000,000

Sale of an asset above book value; the result is a gain.

Req. 1c

Cash (+A)	900,000	
Accumulated depreciation (–XA, +A)	6,500,000	
Loss on sale of long-lived asset (+Loss, –SE)	600,000	
Furniture (–A)		8,000,000

Sale of an asset below book value; the result is a loss.

Req. 2 Summarization of the effects of the disposal:

1. The loss or gain on disposal of a long-lived asset is the difference between the disposal price and the book value at date of disposal.
2. When the disposal price is the same as the book value there is no loss or gain; when the price is above book value there is a gain; and when the price is below book value, there is a loss on disposal.
3. The book value does not purport to be market value, so a loss or gain on disposal of a long-lived asset normally would occur.

E8–15.

Req. 1

Depreciation expense per year:

$6,000 accumulated depreciation ÷ 3 years of usage = $2,000 per year

Estimated useful life:

($18,000 – $4,000) x 1/? useful life = $2,000 per year

$14,000 / $2,000 = 7 year useful life

Req. 2

December 31, 2010:

Depreciation expense (+E, –SE)	2,000	
Accumulated depreciation (+XA, –A)		2,000

To bring accumulated depreciation up to the date of the accidental loss ($18,000 – $4,000) x 1/7 years = $2,000.

Accumulated depreciation ($6,000 + $2,000) (–XA, +A)	8,000	
Loss on disposal of truck (+Loss, –SE)	10,000	
Truck (–A)		18,000

To record disposal of wrecked truck.

E8–16.

Req. 1

Computation of acquisition cost of the deposit in 2011:

February 2011:	Purchase of mineral deposit	$ 700,000
March 2011:	Preparation costs	65,000
	Total acquisition cost in 2011	$ 765,000

Req. 2

Computation of depletion for 2011:

$765,000 cost ÷ 900,000 cubic yards = $.85 per cubic yard depletion rate

60,000 cubic yards in 2011 x $.85 = $51,000

Req. 3

Computation of net book value of the deposit after the developmental work:

Total acquisition cost in 2011		$ 765,000
Less: 2011 depletion		(51,000)
January 2012 developmental costs		6,000
	Net book value	$ 720,000

E8–17.

Req. 1

Acquisition cost:

Patent	$ 6,000
Trademark	12,000
Technology	65,000

Req. 2

Amortization on December 31, 2010 (straight-line method with no residual value):

Patent: $6,000 x 1/15 years remaining = $400 amortization expense

Trademark: The trademark is not amortized due to its indefinite life.

Technology: $65,000 x 1/4 years = $16,250 amortization expense

Req. 3

Income statement for 2010:

Operating expenses:

Amortization expense ($400 + $16,250) $16,650

Balance sheet at December 31, 2010:

(*under noncurrent assets*)

Intangibles:

Patent ($6,000 - $400)	$ 5,600	
Trademark	12,000 **	
Technology ($65,000 - $32,500*)	32,500	$50,100

* $16,250 amortization expense x 2 years

** Although trademarks are valuable assets, they are rarely seen on balance sheets.

E8–18.

Req. 1

Acquisition cost:

Copyright	$12,300
Goodwill	65,000
Patent	39,200

Req. 2

Amortization on December 31, 2012 (straight-line method with no residual value):

Copyright: $12,300 x 1/10 years = $1,230 amortization expense
Goodwill: The goodwill is not amortized due to its indefinite life.
Patent: $39,200 x 1/14 years remaining = $2,800 amortization expense

Req. 3

Income statement for 2012:

Operating expenses:

Amortization expense ($1,230 + $2,800)	$4,030

Balance sheet at December 31, 2012:

(*under noncurrent assets*)

Intangibles:

Copyright ($12,300 - $2,460*)	$ 9,840	
Goodwill	65,000	
Patent ($39,200 - $2,800)	36,400	$111,240

* $1,230 amortization expense x 2 years

E8–19.

Req. 1 (January 1, 2011):

Leasehold improvements (+A)	275,000	
Cash (–A)		275,000

Req. 2 (Adjusting entry on December 31, 2011):

Depreciation (or amortization) expense* (+E, –SE)	13,750	
Leasehold improvements (–A)		13,750

($275,000 x 1/20 year lease = $13,750)

* Some accountants prefer to label this Rent Expense or Amortization of Leasehold Improvements. The cost of the improvement should be allocated over the shorter of the life of the improvement or the lease term.

E8–20.

	Item		Location
1.	The detail on major classifications of long-lived assets.	(a) (b)	Balance sheet, or Notes to the financial statements
2.	The accounting method(s) used for financial reporting purposes.		Notes to the financial statements
3.	Whether the company has had any capital expenditures for the year.	(a) (b) (c)	Statement of cash flows Increase in assets on the balance sheet Notes to the financial statements
4.	Net amount of property, plant, and equipment.	(a) (b)	Balance sheet, or Notes to the financial statements
5.	Policies on amortizing intangibles.		Notes to the financial statements
6.	Depreciation expense.	(a) (b) (c)	Income statement, or Statement of cash flows, or Notes to the financial statements
7.	Any significant gains or losses on disposals of fixed assets.	(a) (b) (c)	Income statement, or Statement of cash flows, or Note to the financial statements
8.	Prior year's accumulated depreciation.	(a) (b)	Balance sheet, or Notes to the financial statements
9.	The amount of assets written off as impaired during the year.	(a) (b) (c)	Income statement, or Statement of cash flows, or Notes to the financial statements

E8–21.

December 31, 2010:
Adjusting entry for 2010 depreciation:

Depreciation expense (+E, –SE).....	9,000	
Accumulated depreciation, equipment (+XA, –A)		9,000

Depreciation 2010:
($46,000 net book value - $10,000 residual value) x 1/4 years = $9,000

Net book value computation:

$100,000	original cost
12,000	capitalized overhaul
(66,000)	accumulated depreciation through 2009
$ 46,000	net book value on January 1, 2010

Remaining life computation:

15 years	estimated life
– 11 years	used
4 years	remaining

($66,000 accumulated depreciation ÷ $6,000 expense)

E8–22.
Req. 1

Equipment (+A)	14,000	
Cash (–A)		14,000

Req. 2
Age of Machine A at December 31, 2011:
($30,000 cost – $4,500 residual value) x 1/5 years = $5,100 depreciation per year.
$10,200 accumulated depreciation ÷ $5,100 = 2 years old at December 31, 2011.

Req. 3

Depreciation expense (for 2012) (+E, –SE).....	4,550	
Accumulated depreciation, machinery (+XA, –A).....		4,550

Computations:

Cost when acquired.....	$30,000
Less: Accumulated depreciation (2 years)	10,200
Undepreciated balance.....	19,800
Add: Major renovation cost.....	14,000
Total	$33,800

Annual depreciation:
($33,800 cost - $6,500 new residual value) x 1/6 years of remaining useful life (8 years total useful life – 2 years used) = $4,550

Req. 4
Requirement (1) assumed that the major renovation and improvement cost was a capital expenditure rather than a revenue expenditure. Because capital expenditures benefit future periods, the expenditure is added to the book value of the asset and then is depreciated over the remaining life of the asset.
Requirement (3) recognized an accounting change due to a change in estimate (both estimated life and residual value). A change in estimate is not an error correction; consequently it is treated prospectively. That is, the effect is spread over the current year and the future remaining life of the asset. This approach means that the undepreciated balance at the date of the change in estimate is depreciated over the remaining life using the revised estimates.

E8–23.
Req. 1
Depreciation expense prior to the change in estimates:
($330,000 cost – $30,000 residual value) x 1/30 years = $10,000 annual depreciation

Req. 2
Depreciation expense after the change in estimates:

Step 1 – Age of the asset: $130,000 ÷ $10,000 = 13 years of depreciation to date.
The building has been depreciated over 13 years as of the beginning of the year.

Step 2 – Net book value: $330,000 cost – $130,000 accum. deprec. = $200,000

Step 3 – Computation:
(Net book value – new residual value) x 1/remaining life = Depreciation expense
($200,000 – $23,000) x 1/12 years = $14,750 depreciation expense per year
This was an accounting change due to a change in estimate (both remaining useful life and residual value). A change in estimate is not an error correction; the remaining book value is depreciated over the remaining useful life using the revised estimates.

Req. 3
The depreciation expense increases by $4,750 each year for the next 12 years. Therefore, net income will be lower by $4,750 (ignoring taxes) each year; this in turn will lower Retained Earnings on the balance sheet. Also on the balance sheet, the asset's net book value will be lowered by an additional $4,750 each year for 12 years. However, since depreciation is a noncash expense, there are no cash flow implications (again ignoring income tax considerations).