2-12 Define the following: direct material costs, direct manufacturing-labor costs, manufacturing overhead costs, prime costs, and conversion costs.

2-13 Describe the overtime-premium and idle-time categories of indirect labor.

2-14 Define product cost. Describe three different purposes for computing product costs.

2-15 What are three common features of cost accounting and cost management?

MyAccountingLab

Exercises

2-16 Costs and cash expenses. When you combine costs and cash expenses, you have four possible combinations.

	Cash expenses	No Cash expenses
Costs	1	2
No costs	3	4

Give an example of each combination.

2-17 Direct, indirect, fixed, and variable costs. Wonder Bakery manufactures two types of bread, which it sells as wholesale products to various specialty retail bakeries. Each loaf of bread requires a three-step process. The first step is mixing. The mixing department combines all of the necessary ingredients to create the dough and processes it through high-speed mixers. The dough is then left to rise before baking. The second step is baking, which is an entirely automated process. The baking department molds the dough into its final shape and bakes each loaf of bread in a high-temperature oven. The final step is finishing, which is an entirely manual process. The finishing department coats each loaf of bread with a special glaze, allows the bread to cool, and then carefully packages each loaf in a specialty carton for sale in retail bakeries.

Required

1. Costs involved in the process are listed next. For each cost, indicate whether it is a direct variable, direct fixed, indirect variable, or indirect fixed cost, assuming "units of production of each kind of bread" is the cost object.

Costs:

- Yeast
- Flour
- Packaging materials
- Depreciation on ovens
- Depreciation on mixing machines
- Rent on factory building
- Fire insurance on factory building
- Factory utilities
- Finishing department hourly laborers
- Mixing department manager
- Materials handlers in each department
- Custodian in factory
- Night guard in factory
- Machinist (running the mixing machine)
- Machine maintenance personnel in each department
- Maintenance supplies for factory
- Cleaning supplies for factory

2. If the cost object were the "mixing department" rather than units of production of each kind of bread, which preceding costs would now be direct instead of indirect costs?

2-18 Classification of costs, service sector. Market Focus is a marketing research firm that organizes focus groups for consumer-product companies. Each focus group has eight individuals who are paid $60 per session to provide comments on new products. These focus groups meet in hotels and are led by a trained, independent marketing specialist hired by Market Focus. Each specialist is paid a fixed retainer to conduct a minimum number of sessions and a per session fee of $2,200. A Market Focus staff member attends each session to ensure that all the logistical aspects run smoothly.

2-17 (15 min.) **Direct, indirect, fixed, and variable costs.**

1. Yeast—direct, variable
Flour—direct, variable
Packaging materials—direct (or could be indirect if small and not traced to each unit), variable
Depreciation on ovens—indirect, fixed (unless "units of output" depreciation, which then would be variable)
Depreciation on mixing machines—indirect, fixed (unless "units of output" depreciation, which then would be variable)
Rent on factory building—indirect, fixed
Fire Insurance on factory building—indirect, fixed
Factory utilities—indirect, probably some variable and some fixed (e.g., electricity may be variable but heating costs may be fixed)
Finishing department hourly laborers—direct, variable (or fixed if the laborers are under a union contract)
Mixing department manager—indirect, fixed
Materials handlers—depends on how they are paid. If paid hourly and not under union contract, then indirect, variable. If salaried or under union contract, then indirect, fixed
Custodian in factory—indirect, fixed
Night guard in factory—indirect, fixed
Machinist (running the mixing machine)—depends on how they are paid. If paid hourly and not under union contract, then indirect, variable. If salaried or under union contract, then indirect, fixed
Machine maintenance personnel—indirect, probably fixed, if salaried, but may be variable if paid only for time worked and maintenance increases with increased production
Maintenance supplies—indirect, variable
Cleaning supplies—indirect, most likely fixed because the custodians probably do the same amount of cleaning every night

2. If the cost object is Mixing Department, then anything directly associated with the Mixing Department will be a direct cost. This will include:

- Depreciation on mixing machines
- Mixing Department manager
- Materials handlers (of the Mixing Department)
- Machinist (running the mixing machines)
- Machine Maintenance personnel (of the Mixing Department)
- Maintenance supplies (if separately identified for the Mixing Department)

Of course the yeast and flour will also be a direct cost of the Mixing Department, but it is already a direct cost of each kind of bread produced.

2-30 Cost of goods manufactured. You consider the purchase of a copier for your business. The initial investment is $15,000. After one year the copier will be replaced by a new one. In order to calculate the cost of one copy, you need to know the depreciation of the copier. The manufacturer of the copier gives you the following information:

Number of copies during the year	Salvage value after one year
10,000	$11,500
20,000	$11,000
30,000	$10,500

Required

1. What are the variable costs?
2. Calculate the fixed costs per year and the variable costs per copy.

You conclude that the depreciation per copy depends on the number of copies made:

Number of copies during the year	Cost per copy
10,000	$3,500/10,000 = $0.35
20,000	$4,000/20,000 = $0.20
30,000	$4,500/30,000 = $0.15

3. Is a changing cost per copy acceptable and or desirable? If not, what would be a solution? Show your calculations.

2-31 Flow of Inventoriable Costs. Renka's Heaters selected data for October 2014 are presented here (in millions):

Direct materials inventory 10/1/2014	$ 105
Direct materials purchased	365
Direct materials used	385
Total manufacturing overhead costs	450
Variable manufacturing overhead costs	265
Total manufacturing costs incurred during October 2014	1,610
Work-in-process inventory 10/1/2014	230
Cost of goods manufactured	1,660
Finished goods inventory 10/1/2014	130
Cost of goods sold	1,770

Calculate the following costs:

Required

1. Direct materials inventory 10/31/2014
2. Fixed manufacturing overhead costs for October 2014
3. Direct manufacturing labor costs for October 2014
4. Work-in-process inventory 10/31/2014
5. Cost of finished goods available for sale in October 2014
6. Finished goods inventory 10/31/2014

2-32 Cost of goods manufactured, income statement, manufacturing company. Consider the following account balances (in thousands) for the Peterson Company:

Peterson Company	Beginning of 2014	End of 2014
Direct materials inventory	21,000	23,000
Work-in-process inventory	26,000	25,000
Finished goods inventory	13,000	20,000
Purchases of direct materials		74,000
Direct manufacturing labor		22,000
Indirect manufacturing labor		17,000
Plant insurance		7,000
Depreciation—plant, building, and equipment		11,000
Repairs and maintenance—plant		3,000
Marketing, distribution, and customer-service costs		91,000
General and administrative costs		24,000

2-31 (20 min.) **Flow of Inventoriable Costs.**

(All numbers below are in millions).

1.

Direct materials inventory 10/1/2014	$ 105
Direct materials purchased	365
Direct materials available for production	470
Direct materials used	(385)
Direct materials inventory 10/31/2014	$ 85

2.

Total manufacturing overhead costs	$ 450
Subtract: Variable manufacturing overhead costs	(265)
Fixed manufacturing overhead costs for October 2014	$ 185

3.

Total manufacturing costs	$ 1,610
Subtract: Direct materials used (from requirement 1)	(385)
Total manufacturing overhead costs	(450)
Direct manufacturing labor costs for October 2014	$ 775

4.

Work-in-process inventory 10/1/2014	$ 230
Total manufacturing costs	1,610
Work-in-process available for production	1,840
Subtract: Cost of goods manufactured (moved into FG)	(1,660)
Work-in-process inventory 10/31/2014	$ 180

5.

Finished goods inventory 10/1/2014	$ 130
Cost of goods manufactured (moved from WIP)	1,660
Cost of finished goods available for sale in October 2014	$ 1,790

6.

Finished goods available for sale in October 2014 (from requirement 5)	$ 1,790
Subtract: Cost of goods sold	(1,770)
Finished goods inventory 10/31/2014	$ 20

1. Prepare a schedule for the cost of goods manufactured for 2014.
2. Revenues for 2014 were $310 million. Prepare the income statement for 2014.

Required

2-33 Cost of goods manufactured, income statement, manufacturing company. Consider the following account balances (in thousands) for the Shaler Corporation:

Shaler Corporation	Beginning of 2014	End of 2014
Direct materials inventory	130,000	68,000
Work-in-process inventory	166,000	144,000
Finished goods inventory	246,000	204,000
Purchases of direct materials		256,000
Direct manufacturing labor		212,000
Indirect manufacturing labor		96,000
Indirect materials		28,000
Plant insurance		4,000
Depreciation—plant, building, and equipment		42,000
Plant utilities		24,000
Repairs and maintenance—plant		16,000
Equipment leasing costs		64,000
Marketing, distribution, and customer-service costs		124,000
General and administrative costs		68,000

1. Prepare a schedule for the cost of goods manufactured for 2014.
2. Revenues (in thousands) for 2014 were $1,200,000. Prepare the income statement for 2014.

Required

2-34 Income statement and schedule of cost of goods manufactured. The Howell Corporation has the following account balances (in millions):

For Specific Date		For Year 2014	
Direct materials inventory, Jan. 1, 2014	$15	Purchases of direct materials	$325
Work-in-process inventory, Jan. 1, 2014	10	Direct manufacturing labor	100
Finished goods inventory, Jan. 1, 2014	70	Depreciation—plant and equipment	80
Direct materials inventory, Dec. 31, 2014	20	Plant supervisory salaries	5
Work-in-process inventory, Dec. 31, 2014	5	Miscellaneous plant overhead	35
Finished goods inventory, Dec. 31, 2014	55	Revenues	950
		Marketing, distribution, and customer-service costs	240
		Plant supplies used	10
		Plant utilities	30
		Indirect manufacturing labor	60

Prepare an income statement and a supporting schedule of cost of goods manufactured for the year ended December 31, 2014. (For additional questions regarding these facts, see the next problem.)

Required

2-35 Interpretation of statements (continuation of 2-34).

1. How would the answer to Problem 2-34 be modified if you were asked for a schedule of cost of goods manufactured and sold instead of a schedule of cost of goods manufactured? Be specific.
2. Would the sales manager's salary (included in marketing, distribution, and customer-service costs) be accounted for any differently if the Howell Corporation were a merchandising-sector company instead of a manufacturing-sector company? Using the flow of manufacturing costs outlined in Exhibit 2-9 (page 65), describe how the wages of an assembler in the plant would be accounted for in this manufacturing company.
3. Plant supervisory salaries are usually regarded as manufacturing overhead costs. When might some of these costs be regarded as direct manufacturing costs? Give an example.

Required

2-33 (30–40 min.) **Cost of goods manufactured, income statement, manufacturing company.**

Shaler Corporation
Schedule of Cost of Goods Manufactured
Year Ended December 31, 2014
(in thousands)

Direct materials costs		
Beginning inventory, January 1, 2014	$130,000	
Purchases of direct materials	256,000	
Cost of direct materials available for use	386,000	
Ending inventory, December 31, 2014	68,000	
Direct materials used		$318,000
Direct manufacturing labor costs		212,000
Indirect manufacturing costs		
Indirect manufacturing labor	96,000	
Indirect materials	28,000	
Plant insurance	4,000	
Depreciation—plant building & equipment	42,000	
Plant utilities	24,000	
Repairs and maintenance—plant	16,000	
Equipment lease costs	64,000	
Total indirect manufacturing costs		274,000
Manufacturing costs incurred during 2014		804,000
Add beginning work-in-process inventory, January 1, 2014		166,000
Total manufacturing costs to account for		970,000
Deduct ending work-in-process inventory, December 31, 2014		144,000
Cost of goods manufactured (to Income Statement)		$826,000

Shaler Corporation
Income Statement
Year Ended December 31, 2014
(in thousands)

Revenues		$1,200,000
Cost of goods sold:		
Beginning finished goods, January 1, 2014	$ 246,000	
Cost of goods manufactured	826,000	
Cost of goods available for sale	1,072,000	
Ending finished goods, December 31, 2014	204,000	
Cost of goods sold		868,000
Gross margin		332,000
Operating costs:		
Marketing, distribution, and customer-service costs	124,000	
General and administrative costs	68,000	
Total operating costs		192,000
Operating income		$ 140,000