Chapter 2

Building Blocks of Managerial Accounting

Quick Check Questions

Answers:

QC2-1. c	QC2-3. a	QC2-5. c	QC2-7. b	QC2-9. a
QC2-2. b	QC2-4. c	QC2-6. d	QC2-8. c	QC2-10. C

Short Exercises

(5 min.) S2-1

Flash Co. is a *manufacturer*, because it has three kinds of inventory: Raw Materials Inventory, Work in Process Inventory, and Finished Goods Inventory.

Zippy Co. is a *merchandiser*, because it has a single inventory account.

Woody Co. is a *service* company, because it has no inventory.

(10 min.) S2-2

a. *Service companies* typically do not have an inventory account.

b. Honda Motors converts raw materials inventory into finished products.

c. An insurance company, a health care provider, and a bank are all examples of service companies.

d. *Wholesalers* buy products in build from producers, mark them up, and resell them to retailers.

e. *Manufacturing companies* report three types of inventory on a balance sheet.

f. *Inventory (merchandise)* for a company such as Staples includes all of the costs necessary to purchase products and get them onto the store shelves.

g. Most for-profit organizations can be described as being in one (or more) of three categories: *merchandising*, *service*, and *manufacturing*.

h. *Work in process inventory* is composed of goods partially through the manufacturing process (not finished yet).

i. Land's End, Sears Roebuck & Co., and LL Bean are all examples of *merchandising companies*.

(5-10 min.) S2-3

a. Marketing
b. Design
c. Production
d. Distribution
e. Distribution
f. Customer service
g. Production
h. Production
i. Research and Development (R&D)

(5-10 min.) S2-4

Cost	Direct or Indirect cost?
a. Depreciation of the building	Indirect
b. Cost of costume jewelry on the mannequins in the Juniors department	Direct
c. Cost of bags used to package customer purchases at the main registers for the store	Indirect
d. The Medina Kohl's store manager's salary	Indirect
e. Cost of security staff at the Medina store	Indirect
f. Manager of Juniors department	Direct
g. Juniors department sales clerks	Direct
h. Cost of Juniors clothing	Direct
i. Cost of hangers used to display the clothing in the store	Indirect
j. Electricity for the building	Indirect
k. Cost of radio advertising for the store	Indirect
l. Juniors clothing buyers' salaries (these buyers buy for all Juniors departments of Kohl's stores)	Indirect

(10 min.) S2-5

a. *Indirect costs* cannot be directly traced to a(n) *cost object* .

b. *Total costs* include the costs of all resources used throughout the value chain.

c. GAAP requires companies to use only *inventoriable product costs* for external financial reporting.

d. Company-paid *fringe benefits* may include health insurance, retirement plan contributions, payroll taxes, and paid vacations.

e. When manufacturing companies sell their finished products, the costs of those finished products are removed from inventory and expensed as *cost of goods sold*.

f. *Conversion costs* are the costs of transforming direct materials into finished goods.

g. *Period costs* include R&D, marketing, distribution, and customer service costs.

h. Direct material plus direct labor equals prime costs.

i. Steel, tires, engines, upholstery, carpet, and dashboard instruments are used in the assembly of a car. Since the manufacturer can trace the cost of these materials (including freight-in and import duties) to specific units or batches of vehicles, they are considered *direct costs* of the vehicles.

j. Costs that can be traced directly to a(n) *cost object* are called *direct costs* .

k. *Inventoriable product costs* are initially treated as assets on the balance sheet.

l. The allocation process results into a less precise cost figure being *assigned* to the *cost objects*.

(5-10 min.) S2-6

a. Period cost
b. Inventoriable product cost
c. Period cost
d. Inventoriable product cost
e. Period cost
f. Inventoriable product cost
g. Period cost
h. Inventoriable product cost
i. Inventoriable product cost

(5-10 min.) S2-7

COST	Period Cost or Inventoriable Product Cost?	If an Inventoriable Product Cost: Is it DM, DL, or MOH?
a. Standard packaging materials used to package individual units of product for sale (*e.g.*, cereal boxes in which cereal is packaged)	Product	DM
b. Lease payment on administrative headquarters	Period	
c. Telephone bills relating to customer service call center	Period	
d. Property insurance – 40% of building is used for sales and administration; 60% of building is used for manufacturing	40% Period; 60% Product	— MOH
e. Wages and benefits paid to assembly-line workers in the manufacturing plant	Product	DL
f. Depreciation on automated production equipment	Product	MOH
g. Salaries paid to quality control inspectors in the plant	Product	MOH
h. Repairs and maintenance on factory equipment	Product	MOH

(5-10 min.) S2-8

COST	Period Cost or Inventoriable Product Cost?	If an Inventoriable Product Cost: Is it DM, DL, or MOH?
1. Cost of milk purchased from dairy farmers	Product	DM
2. Depreciation on Marketing Department's computers	Period (marketing element of value chain)	
3. Property tax on dairy processing plant	Product	MOH
4. Gasoline used to operate refrigerated trucks used to deliver finished dairy products to grocery stores	Period (distribution element of value chain)	
5. Company president's annual bonus	Period	
6. Depreciation on refrigerated trucks used to collect raw milk from dairy farms	Product	MOH (part of the cost of acquiring DM)
7. Plastic gallon containers in which milk is packaged	Product	DM
8. Research and Development on improving milk pasteurization process	Period (R&D element of value chain)	
9. Television advertisements for DairyPlains' products	Period	
10. Lubricants used in running bottling machines	Product	MOH
11. Wages and salaries paid to machine operators at dairy processing plant	Product	DL

(5 min.) S2-9

Frame Place	
Computation of Total Manufacturing Overhead	
Manufacturing overhead:	
Plant depreciation expense	$ 10,000
Plant supervisor's salary	4,500
Plant janitor's salary	1,200
Glue for picture frames*	200
Oil for manufacturing equipment	35
Total manufacturing overhead	$15,935

*Assuming that it is not cost-effective to trace the low-cost glue to individual frames.

The following explanation is provided for instructional purposes, but it is not required.

Depreciation on company cars used by the sales force is a marketing expense, interest expense is a financing expense, and the company president's salary is an administrative expense. None of these expenses is incurred in the manufacturing plant, so they are not part of manufacturing overhead.

The wood for frames is a direct material, not part of manufacturing overhead.

(5 min.) S2-10

Calculation of Cost of Goods Sold		
Beginning inventory		$ 3,600
Purchases	$45,000	
Import duties	700	
Freight-in	3,300	49,000
Cost of goods available for sale		52,600
Less: Ending inventory		(5,500)
Cost of goods sold		$47,100

(5-10 min.) S2-11

Simply Hair		
Income Statement		
For the Year Ended		
Sales revenue		$39,225,000
Cost of goods sold:		
Beginning inventory	$ 2,500,000	
Purchases	21,400,000	
Cost of goods available for sale	23,900,000	
Less: Ending inventory	(3,245,000)	
Less: Cost of goods sold		(20,655,000)
Gross profit		18,570,000
Less: Operating expenses		(6,850,000)
Operating income		$ 11,720,000

(5 min.) S2-12

Thomas Bikes		
Calculation of Direct Materials Used		
Beginning raw materials inventory		$ 4,100
Purchases of direct materials	$16,400	
Import duties	1,300	
Freight-in	200	17,900
Direct materials available for use		22,000
Less: Ending raw materials inventory		(1,900)
Direct materials used		$20,100

(10 min.) S2-13

Hansen Manufacturing		
Schedule of Cost of Goods Manufactured		
Beginning work in process inventory		$ 79,500
Plus: manufacturing costs incurred:		
Direct materials used	$515,500	
Direct labor	226,700	
Manufacturing overhead	774,800	1,517,000
Total manufacturing costs to account for		1,596,500
Less: Ending work in process inventory		(86,500)
Cost of goods manufactured		$1,510,000

(10 min.) S2-14

Relevant quantitative information might include:

- Difference in benefits
- Difference in costs of food
- Difference in salaries
- Difference in costs of transportation
- Difference in costs of housing

Relevant qualitative information might include:

- Difference in job description
- Difference in lifestyle
- Difference in future career development opportunities
- Proximity to family and friends
- Difference in weather

Relevant information always pertains to the future and differs between alternatives.

Student responses may vary.

(10 min.) S2-15

a. Costs that differ between alternatives are called *differential costs*.

b. In the long-run, most costs are *controllable*, meaning that management is able to influence or change the amount of the cost.

c. *Sunk costs* are costs that have already been incurred.

d. A *marginal cost* is the cost of making one more unit.

e. Gasoline is one of many *variable costs* in the operation of a motor vehicle.

f. A product's *fixed costs* and *variable costs*, not the product's *average cost*, should be used to forecast total costs at different production volumes.

g. Within the relevant range, *fixed costs* do not change in total with changes in product volume.

h. The *average cost* per unit declines as a production facility produces more units.

(10 min.) S2-16

COST	Variable or Fixed
a. Cost of coffee used at a Starbucks store	Variable
b. Hourly wages paid to sales clerks at Best Buy	Variable
c. Monthly flower costs for a florist	Variable
d. Cost of fuel used for a national trucking company	Variable
e. Shipping costs for Amazon.com	Variable
f. Monthly rent for a nail salon	Fixed
g. Sales commissions at a car dealership	Variable
h. Monthly insurance costs for the home office of a company	Fixed
i. Monthly depreciation of equipment for a customer service office	Fixed
j. Cost of fabric used at a clothing manufacturer	Variable
k. Cost of fruit sold at a grocery store	Variable
l. Monthly office lease costs for a CPA firm	Fixed
m. Monthly cost of French fries at a McDonald's restaurant	Variable
n. Property taxes for a restaurant	Fixed
o. Depreciation of exercise equipment at the YMCA	Fixed

(5 min.) S2-17

1.	Chris overhears a subordinate at a mutual friend's party tell others about a confidential deal with a supplier to get raw materials for a price lower than market price. Chris does not do anything about the subordinate's indiscrete conversation.	Confidentiality - Keep information confidential except when disclosure is authorized or legally required.
2.	Maxwell pays a Mexican official a bribe of $50,000 to allow the company to locate a factory in that jurisdiction so that the company can take advantage of the cheaper labor costs. Without the bribe, the factory cannot be located in that location.	Integrity - Refrain from engaging in any conduct that would prejudice carrying out duties ethically.
3.	There is a failure in the company's backup systems after a system crash. Month end reports will be delayed. Mark, the manager of the division with the system failure, does not report this upcoming delay to anyone since he does not want to be the bearer of bad news.	Credibility - Disclose delays or deficiencies in information, timeliness, processing, or internal controls in conformance with organization policy and/or applicable law.
4.	To reduce the company's tax bill, Jillian uses total cost to value inventory instead of using product cost as required by law.	Competence - Perform professional duties in accordance with relevant laws, regulations, and technical standards.
5.	Since Michael works in the accounting department, he is aware that profits are going to fall short of analysts' projections. He tells his father to sell stock in the company before the earnings release date.	Confidentiality - Refrain from using confidential information for unethical or illegal advantage.

Exercises (Group A)

(10-15 min.) E2-18A

Reqs. 1 and 2

Value Chain Cost Classification						
	R & D	Design	Purchases	Marketing	Distribution	Customer Service
Newspaper advertisements				$5,100		
Payment to consultant for advice on location of new store	2,900					
Purchases of merchandise			$38,000			
Freight-in			3,100			
Salespersons' salaries				4,800		
Depreciation expense on delivery trucks					$1,000	
Research on selling satellite radio service	$ 300					
Customer complaint department						$500
Rearranging store layout		$850				
Total	$3,200	$850	$41,100	$9,900	$1,000	$500

Req. 3

The total inventoriable product costs are $41,100.

(15 min.) E2-19A

Reqs. 1, 2, and 3

Value Chain Cost Classification								
			Production					
	R & D	Design	Direct Materials	Direct Labor	Manufacturing Overhead	Marketing	Distribution	Customer Service
Delivery expense							$7	
Salaries of salespeople						$ 4		
Chip set			$56					
Exterior case for phone			$ 9					
Assembly-line workers' wages				$10				
Technical support hotline								$3
Depreciation on plant and equipment					$60			
Rearrange production process		$ 2						
1-800 (toll-free) line for customer orders						5		
Scientists' salaries	$11							
	-							
Total costs	$11	$ 2	$65	$10	$60	$ 9	$ 7	$ 3

Req. 4

Total inventoriable product costs:

Direct materials……	$ 65
Direct labor……	10
Manufacturing overhead……	60
Total inventoriable product cost…….	$135

Req. 5

The total prime cost is:

Direct materials……	$ 65
Direct labor……	10
	$ 75

Req. 6

The total conversion cost is:

Direct labor……	$ 10
Manufacturing overhead……	60
	$ 70

(5-10 min.) E2-20A

a. Design
b. Research and Development (R&D)
c. Distribution
d. Purchasing
e. Marketing
f. Customer Service

(15-20 min.) E2-21A

Req. 1

		DM	DL	IM	IL	Other MOH	Period
a.	Airplane seats	$260					
b.	Production supervisors' salaries				$140		
c.	Depreciation on forklifts					$80	
d.	Machine lubricants			$45			
e.	Factory janitors' wages				$20		
f.	Assembly workers' wages		$660				
g.	Property tax on corporate marketing offices						$30
h.	Plant utilities					$130	
i.	Cost of warranty repairs						$225
j.	Machine operators' health insurance		$40				
k.	Depreciation on administrative offices						$70
l.	Cost of designing new plant layout						$195
m.	Jet engines	$1,400					
	TOTAL	$1,660	$700	$45	$160	$210	$520

Req. 2	Total manufacturing overhead costs	=	IM + IL + Other MOH
		=	$45 + 160 + 210 = $415
Req. 3	Total inventoriable product costs	=	DM + DL + MOH
		=	$1,660 + 700 + 415 = $2,775
Req. 4	Total prime costs	=	DM + DL
		=	$1,660 + 700 = $2,360
Req. 5	Total conversion costs	=	DL + MOH
		=	$700 + 415 = $1,115
Req. 6	Total period costs	=	$520

(10 min.) E2-22A

Current Assets		
Current assets:		
Cash		$ 15,200
Accounts receivable		75,000
Inventories:		
Raw materials inventory	$9,700	
Work in process inventory	35,000	
Finished goods inventory	59,000	
Total inventories		103,700
Prepaid expenses		5,500
Total current assets		$199,400

The company must be a *manufacturer*, because it has three kinds of inventory: raw materials, work in process, and finished goods.

(10-15 min.) E2-23A

Cost of goods sold calculation:	
Beginning inventory	$ 18,000
Plus: Purchases and freight-in*	659,500
Cost of goods available for sale	677,500
Less: Ending inventory	(12,800)
Cost of goods sold	$ 664,700

Pampered Pets		
Income Statement		
For Last Year		
Sales revenue		$ 986,000
Less: Cost of goods sold		(664,700)
Gross profit		321,300
Less operating expenses:		
Website expenses	$ 58,500	
Marketing expenses	30,700	
Freight-out expenses	28,500	
Total operating expenses		(117,700)
Operating income		$ 203,600

*purchases of $640,000 + freight-in of $19,500 = $659,500

(5-10 min.) E2-24A

Calculation of Direct Materials Used		
Beginning Raw Materials Inventory	$	17,000
Plus: Purchases of direct materials, freight-in, and import duties		63,000
Materials available for use	$	80,000
Less: Ending Raw Material Inventory		(15,000)
Direct materials used	$	65,000
Schedule of Cost of Goods Manufactured		
Beginning Work in Process Inventory	$	26,000
Plus: Manufacturing costs incurred		
Direct materials used (from previous schedule)		65,000
Direct labor		123,000
Manufacturing overhead		148,000
Total manufacturing costs to account for	$	362,000
Less: Ending Work in Process Inventory		(19,000)
Cost of goods manufactured	$	343,000

(15-20 min.) E2-25A

Calculation of Direct Materials Used		
Beginning Raw Materials Inventory	$	27,000
Plus: Purchases of direct materials		79,000
Materials available for use	$	106,000
Less: Ending Raw Material Inventory		(31,000)
Direct materials used	$	75,000
Schedule of Cost of Goods Manufactured		
Beginning Work in Process Inventory	$	43,000
Plus: Manufacturing costs incurred		
Direct materials used (from previous schedule)		75,000
Direct labor		83,000
Manufacturing overhead (46,000 + 8,000 + 12,700 + 4,100)		70,800
Total manufacturing costs to account for	$	271,800
Less: Ending Work in Process Inventory		(28,000)
Cost of goods manufactured	$	243,800
Calculation of Cost of Goods Sold		
Beginning Finished Goods Inventory	$	16,000
Plus: Cost of goods manufactured (from previous schedule)		243,800
Cost of goods available for sale	$	259,800
Less: Ending Finished Goods Inventory		(29,000)
Cost of goods sold	$	230,800

(15-20 min.) E2-26A

Blue Sea Company **Income Statement** **For Current Year**		
Sales revenue (39,000 units x $10)	$	390,000
Less: Cost of goods sold (from previous exercise)		230,800
Gross profit	$	159,200
Less operating expenses:		
Marketing expenses		76,000
General and administrative expenses		27,500
Total operating expenses	$	103,500
Operating income	$	55,700

Students may simply use the $230,800 cost of goods sold computation from E2-25A, rather than repeating the details of the computation of cost of goods sold here.

(25 min.) E2-27A

Instructional note: This is a fairly challenging exercise that requires students to work backwards through financial statement elements.

a.

Revenues	$27,700
Less: Cost of goods sold	15,600
Gross profit	$12,100

b.

To determine beginning raw materials inventory, start with the materials used computation and work backwards:

Beginning raw materials inventory	$ 2,700
Plus: Purchases of direct materials	9,500
Available for use	12,200
Less: Ending raw materials inventory	(3,600)
Direct materials used	$ 8,600

c.

To determine ending finished goods inventory, start by computing the cost of goods manufactured:

Beginning work in process inventory		$ 0
Plus: Manufacturing costs incurred		
Direct materials used	$8,600	
Direct labor	3,400	
Manufacturing overhead	6,100	18,100
Total manufacturing costs to account for		18,100
Less: Ending work in process inventory		(1,100)
Cost of goods manufactured		$17,000

Now use the cost of goods sold computation to determine ending finished goods inventory:

Beginning finished goods inventory	$ 4,500
Plus: Cost of goods manufactured (from above)	17,000
Cost of goods available for sale	21,500
Less: Ending finished goods inventory	(5,900)
Cost of goods sold (from part A)	$15,600

(15-20 min.) E2-28A

a. The interest rate paid on invested funds, when deciding how much inventory to keep on-hand.	Relevant – funds tied up in inventory cannot earn interest. The higher the interest rate, the more likely the company will want to decrease inventory levels and invest the extra funds.
b. Cost of computers purchased 6 months ago, when deciding whether to upgrade to computers with faster processing speed.	Irrelevant – the cost of the computers, which were purchased in the past, is a sunk cost.
c. The property tax rates in different locales, when deciding where to locate the company's headquarters.	Relevant – the company will incur different property taxes depending on where they locate.
d. The type of fuel (gas or diesel) used by delivery vans, when deciding which make and model of van to purchase for the company's delivery van fleet.	Relevant – the type of gas used by the delivery vans will affect the cost of operating the vans in the future.
e. Cost of operating automated production machinery versus the cost of direct labor, when deciding whether to automate production.	Relevant – the cost of employing labor versus automating production will likely differ.
f. The fair market value of old manufacturing equipment when deciding whether or not to replace it with newer equipment.	Relevant – the fair market value is the amount of money the company could expect to receive from selling the old equipment if they decide to replace it with newer equipment.
g. Cost of purchasing packaging materials from an outside vendor, when deciding whether to continue manufacturing the packaging materials in-house.	Relevant – the cost is relevant if it differs between outsourcing and making the materials in-house.
h. Depreciation expense on old manufacturing equipment when deciding whether or not to replace it with newer equipment.	Irrelevant – depreciation expense is simply the paper write-off (expensing) of a sunk cost. Also, the remaining net book value of the equipment will need to be expensed regardless of whether the equipment is replaced.
i. The total amount of the restaurant's fixed costs, when deciding whether to add additional items to the menu.	Most likely irrelevant – unless the additional items will require the restaurant to purchase additional kitchen equipment, the total fixed cost will probably not change.
j. The cost of land purchased 3 years ago, when deciding whether to build on the land now or wait two more years before building.	Irrelevant – the cost of the land is a sunk cost whether the company builds on the land now, or in the future.

(10 min.) E2-29A

1)	Variable costs	=	($1 x 25,000,000)	=	$25,000,000
	+ Fixed costs			=	6,000,000
	= Total costs			=	$31,000,000
2)	$31,000,000	÷	25,000,000 units	=	$1.24 per unit
3)	$ 6,000,000	÷	25,000,000 units	=	$0.24 per unit
4)	Variable costs	=	($1 x 30,000,000)	=	$30,000,000
	+ Fixed costs			=	6,000,000
	= Total costs			=	$36,000,000
5)	$36,000,000	÷	30,000,000 units	=	$1.20 per unit
6)	$ 6,000,000	÷	30,000,000 units	=	$0.20 per unit

7) The average product cost decreases as production volume increases because the company is spreading its fixed costs over 5 million more units. The company will be operating more efficiently, so the average cost of making each unit decreases.

Exercises (Group B)

(10-15 min.) E2-30B

Reqs. 1 and 2

Value Chain Cost Classification						
	R & D	Design	Purchases	Marketing	Distribution	Customer Service
Newspaper advertisements				$5,700		
Payment to consultant for advice on location of new store	2,200					
Purchases of merchandise			$32,000			
Freight-in			3,700			
Salespersons' salaries				4,900		
Depreciation expense on delivery trucks					$1,800	
Research on selling satellite radio service	$500					
Customer complaint department						$600
Rearranging store layout		$750				
Total	$2,700	$750	$35,700	$10,600	$1,800	$600

Req. 3

The total inventoriable product costs are the $32,000 of purchases plus the $3,700 freight-in = $35,700.

(15 min.) E2-31B

Reqs. 1, 2, and 3

Cost Classification								
			Production					
	R & D	Design	Direct Materials	Direct Labor	Manufacturing Overhead	Marketing	Distribution	Customer Service
Delivery expense							$ 6	
Salaries of salespeople						$ 4		
Chip set			$62					
Exterior case for phone			$ 7					
Assembly-line workers' wages				$8				
Technical support hotline								$ 9
Depreciation on plant and equipment					$75			
Rearrange production process		$5						
1-800 (toll-free) line for customer orders						$ 2		
Scientists' salaries	$12							
	-							
Total costs	$12	$ 5	$69	$8	$75	$ 6	$ 6	$ 9

Req. 4

Total inventoriable product costs:

Direct materials	$ 69
Direct labor	8
Manufacturing overhead	75
Total inventoriable product cost	$152

Req. 5

The total prime cost is:

Direct materials	$ 69
Direct labor	8
	$ 77

Req. 6

The total conversion cost is:

Direct labor	$ 8
Manufacturing overhead	75
	$ 83

(5-10 min.) E2-32B

a. Distribution
b. Design
c. Research and Development
d. Customer Service
e. Marketing
f. Purchases

(15-20 min.) E2-33B

Req. 1

		DM	DL	IM	IL	Other MOH	Period
a.	Airplane seats	$260					
b.	Production supervisors' salaries				$190		
c.	Depreciation on forklifts					$90	
d.	Machine lubricants			$20			
e.	Factory janitors' wages				$10		
f.	Assembly workers' wages		$610				
g.	Property tax on corporate marketing offices						$15
h.	Plant utilities					$120	
i.	Cost of warranty repairs						$215
j.	Machine operators' health insurance		$80				
k.	Depreciation on admin offices						$70
l.	Cost of designing new plant layout						$170
m.	Jet engines	$1,000					
	TOTAL	$1,260	$690	$20	$200	$210	$470

Req. 2 Total manufacturing overhead costs = IM + IL + Other MOH
= $20 + 200 + 210 = $430

Req. 3 Total inventoriable product costs = DM + DL + MOH
= $1,260 + 690 + 430 = $2,380

Req. 4 Total prime costs = DM + DL
= $1,260 + 690 = $1,950

Req. 5 Total conversion costs = DL + MOH
= $690 + 430 = $1,120

Req. 6 Total period costs = $470

(10 min.) E2-34B

Current Assets		
Current assets:		
Cash		$ 15,200
Accounts receivable		84,000
Inventories:		
Raw materials inventory	$ 10,200	
Work in process inventory	37,000	
Finished goods inventory	66,000	
Total inventories		113,200
Prepaid expenses		5,800
Total current assets		$218,200

The company must be a *manufacturer*, because it has three kinds of inventory: raw materials, work in process, and finished goods.

(10-15 min.) E2-35B

Cost of goods sold calculation:	
Beginning inventory	$ 18,000
Plus: Purchases and freight-in*	658,000
Cost of goods available for sale	676,000
Less: Ending inventory	(16,000)
Cost of goods sold	$ 660,000

Pretty Pets		
Income Statement		
For Current Year		
Sales revenue		$ 1,125,000
Less: Cost of goods sold		(660,000)
Gross profit		465,000
Less operating expenses:		
Web site expenses	$ 58,000	
Marketing expenses	32,500	
Freight-out expenses	28,500	
Total operating expenses		(119,000)
Operating income		$ 346,000

*purchases of $636,000 + freight-in of $22,000 = $658,000

(5-10 min.) E2-36B

Calculation of Direct Materials Used		
Beginning Raw Materials Inventory	$	18,000
Plus: Purchases of direct materials, freight-in, and import duties		62,000
Materials available for use	$	80,000
Less: Ending Raw Material Inventory		(20,000)
Direct materials used	$	60,000

Schedule of Cost of Goods Manufactured		
Beginning Work in Process Inventory	$	30,000
Plus: Manufacturing costs incurred		
Direct materials used (from previous schedule)		60,000
Direct labor		129,000
Manufacturing overhead		145,000
Total manufacturing costs to account for	$	364,000
Less: Ending Work in Process Inventory		(16,000)
Cost of goods manufactured	$	348,000

(15-20 min.) E2-37B

Calculation of Direct Materials Used		
Beginning Raw Materials Inventory	$	21,000
Plus: Purchases of direct materials		70,000
Materials available for use	$	91,000
Less: Ending Raw Material Inventory		(30,000)
Direct materials used	$	61,000
Schedule of Cost of Goods Manufactured		
Beginning Work in Process Inventory	$	41,000
Plus: Manufacturing costs incurred		
Direct materials used (from previous schedule)		61,000
Direct labor		87,000
Manufacturing overhead (43,000 + 8,500 + 13,300 + 3,700)		68,500
Total manufacturing costs to account for	$	257,500
Less: Ending Work in Process Inventory		(34,000)
Cost of goods manufactured	$	223,500
Calculation of Cost of Goods Sold		
Beginning Finished Goods Inventory	$	15,000
Plus: Cost of goods manufactured (from previous schedule)		223,500
Cost of goods available for sale	$	238,500
Less: Ending Finished Goods Inventory		(28,000)
Cost of goods sold	$	210,500

(15-20 min.) E2-38B

Striker Company **Income Statement** **For Current Year**		
Sales revenue (35,000 x $13)	$	455,000
Less: Cost of goods sold (from previous exercise)		210,500
Gross profit	$	244,500
Less: operating expenses:		
Marketing expenses		77,000
General and administrative expenses		30,500
Total operating expenses	$	107,500
Operating income	$	137,000

Students may simply use the $210,500 cost of goods sold computation from E2-42B, rather than repeating the details of the computation here.

(25 min.) E2-39B

Instructional note: This is a fairly challenging exercise that requires students to work backwards through financial statement elements.

a.

Revenues	$27,200
Less: Cost of goods sold	14,900
Gross profit	$12,300

b. To determine beginning raw materials inventory, start with the materials used computation and work backwards:

Beginning raw materials inventory	$ 2,100
Plus: Purchases of direct materials	9,700
Available for use	11,800
Less: Ending raw materials inventory	(3,600)
Direct materials used	$ 8,200

c. To determine ending finished goods inventory, start by computing the cost of goods manufactured:

Beginning work in process inventory		$ 0
Plus: Manufacturing costs incurred:		
Direct materials used	$8,200	
Direct labor	3,500	
Manufacturing overhead	6,300	18,000
Total manufacturing costs to account for		18,000
Less: Ending work in process inventory		(1,600)
Cost of goods manufactured		$16,400

Now use the cost of goods sold computation to determine ending finished goods inventory:

Beginning finished goods inventory	$ 4,900
Plus: Cost of goods manufactured (from above)	16,400
Cost of goods available for sale	21,300
Less: Ending finished goods inventory	(6,400)
Cost of goods sold (from part A)	$14,900

(15-20 min.) E2-40B

a. The purchase price of the old computer when replacing it with a new computer with improved features	Irrelevant
b. The cost of renovations when deciding whether to build a new office building or to renovate the existing office building	Relevant
c. The original cost of the current stove when selecting a new, more efficient stove for a restaurant	Irrelevant
d. Local tax incentives when selecting the location of a new office complex for a company's headquarters	Relevant
e. The fair market value (trade-in value) of the existing forklift when deciding whether to replace it with a new, more efficient model	Relevant
f. Fuel economy when purchasing new trucks for the delivery fleet	Relevant.
g. The cost of production when determining whether to continue to manufacture the screen for a smartphone or to purchase it from an outside supplier	Relevant
h. The cost of land when determining where to build a new call center	Relevant
i. The average cost of vehicle operation when purchasing a new delivery van	Relevant
j. Real estate property tax rates when selecting the location for a new order processing center	Relevant

(10 min.) E2-41B

1)	Variable costs	=	20,000,000 units × $1 / unit	=	$20,000,000
	+ Fixed costs			=	3,000,000
	= Total costs			=	$23,000,000
2)	$23,000,000	÷	20,000,000 units	=	$1.15 per unit
3)	$ 3,000,000	÷	20,000,000 units	=	$0.15 per unit
4)	Variable costs	=	30,000,000 units × $1 / unit	=	$30,000,000
	+ Fixed costs			=	3,000,000
	= Total costs			=	$33,000,000
5)	$33,000,000	÷	30,000,000 units	=	$1.10 per unit
6)	$ 3,000,000	÷	30,000,000 units	=	$0.10 per unit

7) The average product cost increases as production volume increases because the company is spreading its fixed costs over 10 million more units. The company will be operating more efficiently, so the average cost of making each unit decreases.

Problems (Group A)

(30 min.) P2-42A

Reqs. 1, 2, and 3

Rootstown Cola Value Chain Cost Classification *(In thousands)*								
			Production					
Cost	R&D	Design	Direct Materials	Direct Labor	Manufacturing Overhead	Marketing	Distribution	Customer Service
Plant janitors' wages					950			
Truck drivers' wages							$285	
Payment for new recipe	$1,090							
Depreciation on delivery trucks							300	
Plant utilities					$ 850			
Lime flavoring			$1,080					
Rearranging plant layout		$1,300						
Bottles			$1,390					
Salt*					30			
Sales commissions						400		
Production costs of "cents-off" store coupons for customers						$ 670		
Lemon syrup			$17,000					
Replace products with expired dates								$ 35
Depreciation on plant and equipment					3,200			
Wages of workers who mix syrup				$8,200				
Customer hotline								200
Freight-in			1,600					
Total costs	$1,090	$1,300	$21,070*	$8,200	$5,030	$1,070	$585	$235

*Salt's low value makes it likely treated as indirect materials. However, some students may classify salt as direct materials.

Req. 4

Total inventoriable product costs:

Direct materials.....	$21,070
Direct labor.....	8,200
Manufacturing overhead.....	5,030
Total inventoriable product costs.....	$34,300

P2-42A (continued)

Req. 5

The managers of R&D and Design are likely to cut their costs. This can increase costs of later value-chain elements. For example, if the recipe is not adjusted to consumer tastes, more marketing may be required and/or sales may decline. If the recipe is not designed so the soda is easy to produce, or if the production process is not well laid-out, production costs will be higher than they need to be. If cutting R&D and Design costs leads to lower quality soda, customer service costs such as returns may also increase.

(30 min.) P2-43A

Req. 1

The ending inventory costs derived from the following schedule are: Raw materials $53,000, Work in process $287,000, and Finished goods $65,000.

Inventory Reconstruction Schedule					
Raw materials inventory		Work in Process Inventory		Finished Goods Inventory	
Beginning inventory	$85,000 (G)	Beginning Inventory	$ 206,000 (G)	Beginning inventory	$ 187,000 (G)
+ Purchases	541,000 (G)	+ Direct Materials Used	573,000[e]	+ Cost of goods manufactured	1,228,000[c]
		+ Direct labor	523,000 (G)		
		+ Manufacturing Overhead	213,000 (G)		
= Direct Materials available for use	626,000	= Total manufacturing costs to account for	1,515,000 (G)	= Cost of goods available for sale	1,415,000 (G)
− Ending inventory	53,000[f]	− Ending inventory	287,000[d]	− Ending inventory	65,000[b]
= Direct Materials used	$573,000[e]	= Cost of goods manufactured	$1,228,000[c]	= Cost of goods Sold	$1,350,000[a]

(G) = Amount given in the case.

[a]Cost of goods sold:

Sales	×	(1 − Gross profit %)	=	Cost of goods sold
$1,800,000	×	75%	=	$1,350,000

[b]Ending finished goods inventory:

Cost of goods available for sale	−	Ending finished goods inventory	=	Cost of goods sold
$1,415,000	−	Ending finished goods inventory	=	$1,350,000
		Ending finished goods inventory	=	$ 65,000

[c]Cost of goods manufactured:

Beginning finished goods inventory	+	Cost of goods manufactured	=	Cost of goods available for sale
$187,000	+	Cost of goods manufactured	=	$1,415,000
		Cost of goods manufactured	=	$1,228,000

P2-43A (continued)

[d]Ending work in process inventory:

Total manufacturing costs to account for	−	Ending work in process inventory	=	Cost of goods manufactured
$1,515,000	−	Ending work in process inventory	=	$1,228,000
		Ending work in process inventory	=	$ 287,000

[e]Direct materials used:

Beginning work in process inventory	+	Direct material used	+	Direct labor	+	Manufacturing overhead	= Total manufacturing costs to account for
$206,000	+	Direct materials used	+	$523,000	+	$213,000	= $1,515,000
		Direct materials used					= $ 573,000

[f]Ending direct materials inventory:

Direct materials available for use	−	Ending direct materials inventory	=	Direct materials used
$626,000	−	Ending direct materials inventory	=	$573,000
		Ending direct materials inventory	=	$53,000

(45-55 min.) P2-44A

Part One:

Cost of goods sold calculation:	
Beginning inventory	$ 12,700
Plus: Purchases and freight-in*	37,000
Cost of goods available for sale	49,700
Less: Ending inventory	(9,600)
Cost of goods sold	$ 40,100

Penny's Posies		
Income Statement		
Year Ended December 31, 2013		
Sales revenue		$53,000
Less: Cost of goods sold		40,100
Gross profit		12,900
Less operating expenses:		
Utilities expense	$ 1,400	
Rent expense	4,600	
Sales commission expense	4,900	10,900
Operating income		$2,000

P2-44A (continued)

Part Two:

Req. 1

Calculation of Direct Materials Used		
Beginning Raw Materials Inventory	$	11,000
Plus: Purchases of direct materials, freight-in, and import duties		34,000
Materials available for use	$	45,000
Less: Ending Raw Material Inventory		(6,500)
Direct materials used	$	38,500

Schedule of Cost of Goods Manufactured		
Beginning Work in Process Inventory	$	-
Plus: Manufacturing costs incurred		
Direct materials used (from previous schedule)		38,500
Direct labor		20,000
Manufacturing overhead ($4,300 + $1,550 + $9,600)		15,450
Total manufacturing costs to account for	$	73,950
Less: Ending Work in Process Inventory		(3,500)
Cost of goods manufactured	$	70,450

Calculation of Cost of Goods Sold		
Beginning Finished Goods Inventory	$	-
Plus: Cost of goods manufactured (from previous schedule)		70,450
Cost of goods available for sale	$	70,450
Less: Ending Finished Goods Inventory		(4,000)
Cost of goods sold	$	66,450

Req. 2

Floral Manufacturing
Income Statement
For Year Ended December 31, 2014

Sales revenue	$	109,000
Less: Cost of goods sold (from previous schedule)		66,450
Gross profit	$	42,550
Less operating expenses:		
Delivery expense		2,500
Sales salaries expense		4,400
Customer service hotline		1,700
Total operating expenses	$	8,600
Operating income	$	33,950

Req. 3

A manufacturer's cost of goods sold is based on its *cost of goods manufactured*. In contrast, a merchandiser's cost of goods sold is based on its merchandise *purchases*.

P2-44A (continued)

Part Three: ***Reqs. 1 and 2***

Penny's Posies Floral Partial Balance Sheet December 31, 2013		Floral Manufacturing Partial Balance Sheet December 31, 2014	
Inventory.....	$9,600	Raw materials inventory.....	$ 6,500
		Work in process inventory..	3,500
		Finished goods inventory…	4,000
		Total inventory.....	$14,000

(10 min.) P2-45A

1) As shown below, the quantitative data suggests you would net $6,800 more by taking Job #1 and living at home.

Attributes:	Take Job #1 and live at home	Take Job #2 and rent an apartment
Salary	**$45,000**	**$50,000**
Rent	**0**	**(9,000)**
Food	**0**	**(2,000)**
Cable and Internet	**0**	**(800)**
Salary, net of living expenses	**$45,000**	**$38,200**

Net Difference = $45,000 – $38,200 = $6,800

2) The costs of doing laundry, operating the car, and paying for cell phone service are irrelevant because they do not differ between the two alternatives.

3) You might consider whether you would like to live with your parents again or not! Even though you would benefit by $6,800 if you live at home, you may decide it isn't worth it!

4) If you want Job #2 and you want to live at home, you will benefit by the higher salary and the lower living expenses. However, you'll need to factor in the higher costs of commuting to work via car (gas, tolls, service) or train (fare). Qualitatively, you will want to consider whether the time spent commuting is worth the extra money you will be netting from living at home.

(15-20 min.) P2-46A

Req. 1

Monthly pizza volume	5,000	8,000	10,000
Total fixed costs	$ 10,000	$ 10,000	$ 10,000
Total variable costs	7,250	11,600	14,500
Total costs	$ 17,250	$21,600	$24,500
Fixed cost per pizza	$ 2.00	$ 1.25	$ 1.00
Variable cost per pizza	1.45	1.45	1.45
Average cost per pizza	$ 3.45	$ 2.70	$ 2.45
Selling price per pizza	$ 6.25	$ 6.25	$ 6.25
Average profit per pizza	$ 2.80	$ 3.55	$ 3.80

Req. 2

Companies want to operate near or at full capacity to better utilize the resources they spend on fixed costs. The more units they produce, the lower the average fixed cost per unit.

Req. 3

At the current volume, the restaurant's monthly profit is $16,500 calculated as follows

Total Sales Revenue	− Total Costs	= Monthly Profit
($6.25 per pizza × 8,000 pizzas)	− $21,600	= $28,400

If the owner decreases the sales price to increase volume, the new monthly profit will be:

Total Sales Revenue at the new price and volume	− Total Costs at the new volume	= New Monthly Profit
($5.75 per pizza × 10,000 pizzas)	− $24,500	= $33,000

Since the restaurant will generate an additional $4,600 of profit the owner should decrease the sales price to increase the volume.

Problems (Group B)

(30 min.) P2-47B

Reqs. 1, 2, and 3

Jazzy Cola Value Chain Cost Classification *(In thousands)*								
			Production					
Cost	R&D	Design	Direct Materials	Direct Labor	Manufacturing Overhead	Marketing	Distribution	Customer Service
Truck drivers' wages							$265	
Lemon syrup			$20,000					
Depreciation on trucks							100	
Lime flavoring			920					
Payment for new recipe	$1,190							
Customer hotline								190
Sales commissions						400		
Production costs of "cents-off" store coupons for customers						$ 470		
Rearranging plant layout		$1,500						
Freight-in			1,700					
Depreciation on plant and equipment					2,900			
Bottles			1,210					
Salt*					30			
Plant utilities					$ 850			
Wages of workers who mix syrup				$7,900				
Plant janitors' wages					1,050			
Replace products with expired dates								$ 60
Total costs	$1,090	$1,300	$21,070*	$8,200	$5,030	$1,070	$585	$235

*Salt's low value makes it likely treated as indirect materials. However, some students may classify salt as direct materials.

Req. 4

Total inventoriable product costs:

Direct materials.....	**$23,830**
Direct labor.....	**7,900**
Manufacturing overhead.....	**4,830**
Total inventoriable product costs.....	**$36,560**

(continued) P2-47B

Req. 5

The managers of R&D and Design are likely to cut their costs. This can increase costs of later value-chain elements. For example, if the recipe is not adjusted to consumer tastes, more marketing may be required and/or sales may decline. If the recipe is not designed so the soda is easy to produce, or if the production process is not well laid out, production costs will be higher than they need to be. If cutting R&D and Design costs leads to lower quality soda, customer service costs such as returns may also increase.

(30 min.) P2-48B

Req. 1

The ending inventory costs derived from the following schedule are: Raw materials $143,000, Work in process $239,000, and Finished goods $150,000.

Inventory Reconstruction Schedule					
Raw materials inventory		Work in Process Inventory		Finished Goods Inventory	
Beginning inventory	$113,000 (G)	Beginning Inventory	$ 229,000 (G)	Beginning inventory	$ 154,000 (G)
+ Purchases	476,000 (G)	+ Direct Materials Used	446,000[e]	+ Cost of goods manufactured	1,186,000[c]
		+ Direct labor	505,000 (G)		
		+ Manufacturing Overhead	245,000 (G)		
= Direct Materials available for use	589,000	= Total manufacturing costs to account for	1,425,000 (G)	= Cost of goods available for sale	1,340,000 (G)
− Ending inventory	143,000[f]	− Ending inventory	239,000[d]	− Ending inventory	150,000[b]
= Direct Materials used	$446,000[e]	= Cost of goods manufactured	$1,186,000[c]	= Cost of goods Sold	$1,190,000[a]

(G) = Amount given in the case.

[a]Cost of good sold:

Sales	×	(1 − Gross profit %)	=	Cost of goods sold
$1,700,000	×	70%	=	$1,190,000

[b]Ending finished goods inventory:

Cost of goods available for sale	− Ending finished goods inventory	= Cost of goods sold	
$1,340,000	− Ending finished goods inventory	=	$1,190,000
	Ending finished goods inventory	=	$ 150,000

[c]Cost of goods manufactured:

Beginning finished goods inventory	+ Cost of goods manufactured	= Cost of goods available for sale	
$154,000	+ Cost of goods manufactured	=	$1,340,000
	Cost of goods manufactured	=	$1,186,000

(continued) P2-48B

[d]Ending work in process inventory:

Total manufacturing costs to account for	−	Ending work in process inventory	=	Cost of goods manufactured
$1,425,000	−	Ending work in process inventory	=	$1,186,000
		Ending work in process inventory	=	$ 239,000

[e]Direct materials used:

Beginning work in process inventory	+	Direct material used	+	Direct labor	+	Manufacturing overhead	= Total manufacturing costs to account for
$229,000	+	Direct materials used	+	$505,000	+	$245,000	= $1,425,000
		Direct materials used					= $ 446,000

[f]Ending direct materials inventory:

Direct materials available for use	−	Ending direct materials inventory	=	Direct materials used
$589,000	−	Ending direct materials inventory	=	$446,000
		Ending direct materials inventory	=	$143,000

(45-55 min.) P2-49B

Part One:

Cost of goods sold calculation:	
Beginning inventory	$ 12,000
Plus: Purchases and freight-in*	34,000
Cost of goods available for sale	46,000
Less: Ending inventory	(9,900)
Cost of goods sold	$ 36,100

Robin's Roses		
Income Statement		
Year Ended December 31, 2013		
Sales revenue		$59,000
Less: Cost of goods sold		36,100
Gross profit		22,900
Less operating expenses:		
Utilities expense	$ 1,200	
Rent expense	3,600	
Sales commission expense	4,600	9,400
Operating income		$13,500

(continued) P2-49B

Part Two:

Req. 1

Calculation of Direct Materials Used	
Beginning Raw Materials Inventory	14,000
Plus: Purchases of direct materials, freight-in, and import duties	35,000
Materials available for use	49,000
Less: Ending Raw Material Inventory	(10,500)
Direct materials used	38,500

Schedule of Cost of Goods Manufactured	
Beginning Work in Process Inventory	-
Plus: Manufacturing costs incurred	
Direct materials used (from previous schedule)	38,500
Direct labor	21,000
Manufacturing overhead ($4,400 + $1,050 + $8,600)	14,050
Total manufacturing costs to account for	73,550
Less: Ending Work in Process Inventory	(3,500)
Cost of goods manufactured	70,050

Calculation of Cost of Goods Sold	
Beginning Finished Goods Inventory	-
Plus: Cost of goods manufactured (from previous schedule)	70,050
Cost of goods available for sale	70,050
Less: Ending Finished Goods Inventory	(6,500)
Cost of goods sold	63,550

Req. 2

Floral Manufacturing
Income Statement
For Year Ended December 31, 2014

Sales revenue	102,000
Less: Cost of goods sold (from previous schedule)	63,550
Gross profit	38,450
Less operating expenses:	
Delivery expense	2,000
Sales salaries expense	4,700
Customer service hotline	1,100
Total operating expenses	7,800
Operating income	30,650

(continued) P2-49B

Req. 3

A manufacturer's cost of goods sold is based on its *cost of goods manufactured*. In contrast, a merchandiser's cost of goods sold is based on its merchandise *purchases*.

Part Three: *Reqs. 1 and 2*

Robin's Roses Partial Balance Sheet December 31, 2013		Floral Manufacturing Partial Balance Sheet December 31, 2014	
Inventory.....	$9,900	Raw materials inventory.....	$ 10,500
		Work in process inventory..	3,500
		Finished goods inventory…	6,500
		Total inventory.....	$20,500

(10 min.) P2-50B

1) As shown below, the quantitative data suggests you would net $9,700 more by taking Job #1 and living at home.

Attributes:	Take Job #1 and live at home	Take Job #2 and rent an apartment
Salary	$50,000	$55,000
Rent	0	(12,000)
Food	0	(2,000)
Cable and Internet	0	(700)
Salary, net of living expenses	$50,000	$40,300

Net Difference = $50,000 − $40,300 = $9,700

2) The costs of doing laundry, operating the car, and paying for cell phone service are irrelevant because they do not differ between the two alternatives.

3) You might consider whether you would like to live with your parents again or not! Even though you would benefit by $9,700 if you live at home, you may decide it isn't worth it!

4) If you want Job #2 and you want to live at home, you will benefit by the higher salary and the lower living expenses. However, you'll need to factor in the higher costs of commuting to work via car (gas, tolls, service) or train (fare). Qualitatively, you will want to consider whether the time spent commuting is worth the extra money you will be netting from living at home.

(15-20 min.) P2-51B

Req. 1

Monthly pizza volume	3,000	4,000	6,000
Total fixed costs	$ 6,000	$ 6,000	$ 6,000
Total variable costs	3,750	5,000	7,500
Total costs	$9,750	$11,000	$13,500
Fixed cost per pizza	$ 2.00	$ 1.50	$ 1.00
Variable cost per pizza	1.25	1.25	1.25
Average cost per pizza	$ 3.25	$ 2.75	$ 2.25
Sales price per pizza	$6.00	$6.00	$6.00
Average profit per pizza	$ 2.75	$ 3.25	$ 3.75

Req. 2

Companies want to operate near or at full capacity to better utilize the resources they spend on fixed costs. The more units they produce, the lower the average fixed cost per unit.

Req. 3

At the current volume, the restaurant's monthly profit is $20,100 calculated as follows

Total Sales Revenue	− Total Costs	= Monthly Profit
($6.00 per pizza × 4,000 pizzas)	− $11,000	= $13,000

If the owner decreases the sales price to increase volume, the new monthly profit will be:

Total Sales Revenue at the new price and volume	− Total Costs at the new volume	= New Monthly Profit
($5.50 per pizza × 6,000 pizzas)	− $13,500	= $19,500

Since the restaurant will generate an additional $6,500 of profit ($19,500 − $13,000), the owner should decrease the sales price to increase the volume.

Discussion & Analysis

A2-52

1. **Briefly describe a service company, a merchandising company, and a manufacturing company. Give an example of each type of company, but do not use the same examples as given in the chapter.**

   Service companies are in business to sell intangible services. Merchandising companies are in business to sell tangible products they buy from manufacturers. Manufacturing companies use labor, plant, and equipment to convert raw materials into new finished products. An accounting firm is an example of a service company; Barnes & Noble is an example of a merchandising company; and Johnson & Johnson is an example of a manufacturer.

2. **How do service, merchandising, and manufacturing companies differ from each other? How are service, merchandising, and manufacturing companies similar to each other? List as many similarities and differences as you can identify.**

   Differ:
   - Inventories
   - Primary output
   - Customers

   Student answers will vary

   Similar:
   - Profit motivated
   - Marketing
   - GAAP

   Student answers will vary

3. **What is the value chain? What are the six types of business activities found in the value chain? Which type(s) of business activities in the value chain generate costs that go directly to the income statement once incurred? What type(s) of business activities in the value chain generate costs that flow into inventory on the balance sheet?**
   The value chain is the activities that add value to a firm's products and services. The six types of business activities in the value chair are R&D, design, production or purchases, marketing, distribution, and customer service. All costs along the value chain for service companies, all except for purchases for merchandisers, and all except for production for manufacturers. Purchases flow into inventory for a merchandiser and production flows into inventories for a manufacturer.

4. **Compare direct costs to indirect costs. Give an example of a cost at a company that could be a direct cost at one level of the organization but would be considered an indirect cost at a different level of that organization. Explain why this same cost could be both direct and indirect (at different levels).**

   A direct cost can be traced to a cost object whereas an indirect cost relates to the cost object but cannot be traced to it. The salary of a car sales manager is a direct cost to the sales department, but an indirect cost of the car itself. The salary of a sales manager is directly traceable to the sales department because that is the only place the manager works in the company. The salary is an indirect cost of the car because it is impossible to determine how much of it belongs to a specific car. In other words, the sales manager's salary affects the cost of all cars sold, but is not traceable to individual cars.

5. What is meant by the term "inventoriable product costs"? What is meant by the term "period costs"? Why does it matter whether a cost is an inventoriable product cost or a period cost?

Inventoriable product costs are all costs of a product that GAAP requires companies to treat as an asset (inventory) for external financial reporting. These costs are not expensed until the product is sold. Period costs are costs that are expensed in the period in which they are incurred; often called Operating Expenses, or Selling, General, and Administrative Expenses. An inventoriable product cost is treated as an asset until the product is sold; it will benefit a future period. A period cost is expensed when it is incurred as it has no future value.

6. Compare inventoriable product costs to period costs. Using a product of your choice, give examples of inventoriable product costs and period costs. Explain why you categorized your costs as you did.

Levi Strauss makes jeans. The inventoriable product costs would include denim, thread, zippers, labor, and factory overhead. All of these costs are related to the production of the jeans and are therefore inventoriable. The costs of advertising the jeans in magazines, commissions paid to employees who sell the jeans to merchandisers, and the cost of shipping the jeans to buyers are all period costs because they are incurred once the jeans have been produced and have no future value to the company.

7. Describe how the income statement of a merchandising company differs from the income statement of a manufacturing company. Also comment on how the income statement from a merchandising company is similar to the income statement of a manufacturing company.

The Cost of goods sold section of the income statement is different for a merchandiser and a manufacturer because a merchandiser buys finished goods whereas a manufacturer produces finished goods. The merchandiser uses the cost of purchases in the computation of Cost of goods sold, where the manufacturer uses the Cost of goods manufactured in the computation of Cost of goods sold. The rest of the income statement is the same for both merchandisers and manufacturers. It includes Sales revenue, Gross profit, Operating expenses, and Operating income.

8. How are the cost of goods manufactured, the cost of goods sold, the income statement, and the balance sheet related for a manufacturing company? What specific items flow from one statement or schedule to the next? Describe the flow of costs between the cost of goods manufactured, the cost of goods sold, the income statement, and the balance sheet for a manufacturing company.

The Cost of goods manufactured includes all the costs of production, direct material, direct labor, and manufacturing overhead. This amount is used in the preparation of the income statement in the computation of Cost of goods sold where it is added to beginning Finished goods inventory to determine Cost of goods available for sale. The remaining Finished goods that have not been sold is shown on the balance sheet as Inventory.

9. What makes a cost relevant or irrelevant when making a decision? Suppose a company is evaluating whether to use its warehouse for storage of its own inventory or whether to rent it out to a local theater group for housing props. Describe what information might be relevant when making that decision.

When making a decision, a cost is considered relevant or irrelevant depending on whether it changes between the alternatives in the decision. Some relevant costs to consider in the evaluation of whether to use the warehouse for storage or whether to rent it would be the cost of storage elsewhere, how much rent could be charged for the warehouse, insurance costs, and so forth.

10. Explain why "differential cost" and "variable cost" do not have the same meaning. Give an example of a situation in which there is a cost that is a differential cost but not a variable cost.

A differential cost is the difference in cost between two alternative courses of action whereas a variable cost is a cost that changes in total in direct proportion to changes in volume. If a company was deciding between renting office space downtown (more expensive) or in the suburbs (less expensive), the cost of rent would be an example of a differential cost that is not a variable cost. Rent is a fixed cost.

Student answers may vary.

11. Greenwashing, the practice of overstating a company's commitment to sustainability, has been in the news over the past few years. Perform an Internet search of the term "greenwashing." What examples of greenwashing can you find?

Student answers may vary.

12. In the chapter, Ricoh was mentioned as a company that has designed its copiers so that at the end of the copier's life, Ricoh will collect and dismantle the product for usable parts, shred the metal casing, and use the parts and shredded material to build new copiers. This product design can be called "cradle to cradle" design. Are there any other products you are aware of that have a "cradle to cradle" design? Perform an Internet search for "cradle to cradle design" or a related term if you need ideas.

Student answers may vary.

Application & Analysis

A2-53

Basic Discussion Questions

1. **Describe the product that is being produced and the company that produces it.**

   The product is jeans and the company is Levi Strauss & Co.

2. **Describe the six value chain business activities that this product would pass through from its inception to its ultimate delivery to the customer.**

   The six value chain business activities are
   - R&D
   - Design
   - Production
   - Marketing
   - Distribution
   - Customer Service

3. **List at least three costs that would be incurred in each of the six business activities in the value chain.**
   - R&D – investigating new fabrics, customer needs surveys, innovation
   - Design – style, quality, durability
   - Production – material, labor, overhead
   - Marketing – advertisements, sponsorships, Internet presence
   - Distribution – shipping, administrative costs, storage
   - Customer Service – warranties, call center, customer email support

4. **Classify each cost you identified in the value chain as either being an inventoriable product cost or a period cost. Explain your justification.**

   All the costs, with the exception of production costs, are period costs. Only the production costs are inventoriable.

5. **A cost object can be anything for which managers want a separate measurement of cost. List three different potential cost objects other than the product itself for the company you have selected.**

   - Advertising
   - Internal control
   - Environmental sustainability

6. **List a direct cost and an indirect cost for each of the three different cost objects in #5. Explain why each cost would be direct or indirect.**

   - Advertising
     - Direct – cost of advertising 501 brand jeans
     - Indirect – cost of advertising Levi Strauss & Co.
   - Internal Control
     - Direct – cost of separating duties within a department
     - Indirect – Audit Committee costs for the company
   - Environmental Sustainability
     - Direct – Zero waste within a department
     - Indirect – Companywide energy efficiency

Student answers will vary.

Ethics Mini-Case

1. If Joe were to increase income by adding sales commission costs and advertising costs to product costs, the following ethical principles would be violated:
   a. Competence: Perform professional duties in accordance with relevant laws, regulations, and technical standards. By adding in period costs to product costs, Joe would be violating technical standards.
   b. Competence: Provide decision support information that is accurate and clear. Adding in period costs would not be accurate or clear.
   c. Credibility - Disclose all relevant information that could reasonably be expected to influence an intended user's understanding of the reports. Since these period costs would be buried in product costs, the user's understanding would be lessened.
   d. Integrity - Abstain from engaging in or supporting any activity that might discredit the profession. By manipulating the accounting numbers to serve his own purpose, Joe would be violating the integrity principle.
2. If Joe were to make the Company loan to Mike, it is not clear whether ethical principles would be violated. Making the loan would be highly questionable. If Joe does pursue this action, he should go to his own supervisor or the board of directors with the request. Otherwise, the loan would seem to be unethical.
3. Perhaps a third course of action would be to think of other alternatives, such as:
   a. Refer Mike to a credit counseling service or to an employee assistance program
   b. Talk with the board about the temporary downturn and persuade them that bonuses might be a good strategic option

Student responses may vary; the above answers are only a starting point for class discussion.

Real Life Mini-Case

1. Starbucks could be considered both a service company and a merchandiser. The café part of Starbucks would be considered primarily service-oriented, while the sale of Starbucks coffee, mugs, teas, and merchandise would be primarily merchandiser-oriented.
2. A typical value chain is composed of the following phases. Potential costs for a cup of coffee's value chain are included with each phase:
   a. Research & Development: Performing research on the proper roasting methods for coffee beans and on the various types of coffee beans that might be used
   b. Design: Designing the coffee brewing machines to be used in the cafes for brewing the cup of coffee; designing store layouts; designing the cup and sleeve
   c. Production or Purchases: Brewing the coffee would include the coffee beans, the water, any milk or sugar used. Other costs at this point of the value chain would be the labor of the employees brewing and serving the coffee.
   d. Marketing: Starbucks does a variety of marketing of its coffee, including print and web advertisements.
   e. Distribution: Distribution costs would be the cost of shipping the coffee beans, the cups, the sleeves, and other supplies to the café where the coffee is served.
   f. Customer Service: If a customer is unhappy with the cup of coffee, he or she can contact Starbucks for some resolution. The costs of providing customers with complimentary coffee to compensate for a less-than-perfect store visit would be in this part of the value chain. In addition, the cost of administering Starbucks' loyalty program would be part of the customer service value chain.
3. Starbucks cup of coffee served in Fairlawn, Ohio, café:
   a. What costs:
      i. Direct material: Coffee beans, water, cup, cup sleeve, milk, sugar
      ii. Direct labor: Store barista who serves the cup of coffee
      iii. Overhead: Store lighting, store rent, depreciation on equipment, store manager salary, insurance on the store, and other similar costs
   b. Direct costs assuming Fairlawn store is cost object would be coffee in the cup, water in the cup, and possibly milk. Indirect costs would be the cost to light the store, the insurance on the store, and others.
   c. Direct costs of the cup of coffee assuming Starbucks Corporation is the cost object: Almost all costs would be direct, including advertising, corporate employees, depreciation, and other costs of the corporation.
4. Starbucks café in Fairlawn, Ohio, and a pound of packaged coffee assuming coffee is ground at time of purchase
   a. Costs of that pound of coffee
      i. Direct material
      ii. Direct labor
      iii. Overhead
   b. Direct costs assuming Fairlawn store is cost object would be coffee beans, the packaging, and the labor of the employees who processed the packaged coffee. Indirect costs would be the cost to light the store, the insurance on the store, and other similar costs.
   c. Direct costs of the pound of coffee assuming Starbucks Corporation is the cost object: Almost all costs would be direct, including advertising, corporate employees, depreciation, and other costs of the corporation.
5. Starbucks management would state that its retail stores "have more tools to absorb the increase because of other costs included in the cost of a cup of coffee" because the coffee goes through several more steps in the store, thereby allowing more costs to be allocated to the cup. Also, coffee sold packaged in stores is more likely more price sensitive since it is sold side by side with other competing coffees. These costs in the cup of coffee include the costs as outlined previously.

Student responses may vary; the above answers are only a starting point for class discussion.