Chapter 2

Building Blocks of Managerial Accounting

Quick Check Questions

Answers:

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

Short Exercises

(10 min.) S2-1

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

b. *Inventory (merchandise)* for a company such as Best Buy (consumer electronics) includes all the costs necessary to purchase products and get them onto the store shelves.

c. Most for-profit organizations can be described as belonging to one (or more) of three categories: *merchandising companies*, *service companies*, and *manufacturing companies*.

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

e. Forever 21, Target, and Kohl's are all examples of *merchandising companies*.

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

g. Johnson & Johnson, a personal care products manufacturer, converts raw materials inventory into finished products.

h. A law office, an advertising agency, and a hospital are all examples of service companies

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

(5 min.) S2-2

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

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

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

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

(10 min.) S2-5

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

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

c. Direct material plus direct labor equals *prime costs*.

d. Steel, tires, engines, upholstery, carpet, and dashboard instruments are used in the assembly of a car. Because 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.

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

f. *Product costs* are initially treated as *assets* on the balance sheet.

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

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

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

j. U.S. GAAP requires companies to use only *product costs* for inventory reported on external financial statements.

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

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

(5-10 min.) S2-6

1. Product cost, Product cost
2. Product cost
3. Product cost, Product cost
4. Period cost, Period cost
5. Period cost, Period cost
6. Period cost, Period cost

(5-10 min.) S2-7

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

(5-10 min.) S2-8

COST	Period Cost or Product Cost?	If a Product Cost: Is it DM, DL, or MOH?
a. Property taxes – 30% of building is used for sales, marketing, and administrative offices; 70% of building is used for manufacturing	30% Period; 70% Product	-- MOH
b. Wages and benefits paid to assembly-line workers in the manufacturing plant	Product	DL
c. Depreciation on automated production equipment	Product	MOH
d. Salaries paid to quality control inspectors in the plant	Product	MOH
e. Repairs and maintenance on factory equipment	Product	MOH
f. Standard packaging materials used to package individual units of product for sale (*e.g.*, cereal boxes in which cereal is packaged)	Product	DM
g. Lease payment on administrative headquarters	Period	
h. Telecommunications costs for the customer service call center	Period	

(5-10 min.) S2-9

COST	Period Cost or Product Cost?	If a Product Cost: Is it DM, DL, or MOH?
1. Television advertisements for Bailey's products	Period	
2. Lubricants used in running bottling machines	Product	MOH
3. Research and Development related to elimination of antibiotic residues in milk	Period	
4. Gasoline used to operate refrigerated trucks delivering finished dairy products to grocery stores	Period	
5. Company president's annual bonus	Period	
6. Depreciation on refrigerated trucks used to collect raw milk from dairy farmers	Product	MOH
7. Plastic gallon containers in which milk is packaged	Product	DM
8. Property insurance on dairy processing plant	Product	MOH
9. Cost of milk purchased from local dairy farmers	Product	DM
10. Depreciation on tablets used by sales staff	Period	
11. Wages and salaries paid to machine operators at dairy processing plant	Product	DL

(5 min.) S2-10

McKay Frames	
Computation of Total Manufacturing Overhead	
Manufacturing overhead:	
Plant depreciation expense	$ 6,000
Plant supervisor's salary	3,100
Plant janitor's salary	1,800
Glue for picture frames*	400
Oil for manufacturing equipment	250
Total manufacturing overhead	$11,550

*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.

(5-10 min.) S2-11

Salon Hair		
Income Statement		
For the Year Ended		
Sales revenue		$38,850,000
Cost of goods sold:		
Beginning inventory	$ 3,500,000	
Purchases	23,975,000	
Cost of goods available for sale	27,475,000	
Less: Ending inventory	(4,445,000)	
Less: Cost of goods sold		(23,030,000)
Gross profit		15,820,000
Less: Operating expenses		(7,100,000)
Operating income		$ 8,720,000

(5 min.) S2-12

Calculation of Cost of Goods Sold		
Beginning inventory		$ 3,800
Purchases	$40,000	
Import duties	1,300	
Freight-in	3,700	45,000
Cost of goods available for sale		48,800
Less: Ending inventory		(5,900)
Cost of goods sold		$42,900

(5 min.) S2-13

Mason Bikes		
Calculation of Direct Materials Used		
Beginning raw materials inventory		$ 4,700
Purchases of direct materials	$16,000	
Import duties	1,300	
Freight-in	400	17,700
Materials available for use		22,400
Less: Ending raw materials inventory		(1,200)
Direct materials used		$21,200

(10 min.) S2-14

Robinson Manufacturing		
Schedule of Cost of Goods Manufactured		
Beginning work in process inventory		$ 72,400
Plus: Manufacturing costs incurred:		
Direct materials used	$519,800	
Direct labor	223,500	
Manufacturing overhead	775,115	1,518,415
Total manufacturing costs to account for		1,590,815
Less: Ending work in process inventory		(87,600)
Cost of goods manufactured		$1,503,215

(10 min.) S2-15

a. A(n) *marginal cost* is the cost of making one more unit.

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

c. 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.

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

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

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

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

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

*or fixed cost

(10 min.) S2-16

COST	Variable or Fixed
a. Cost of French fries used at a McDonald's restaurant	Variable
b. Hourly wages paid to cashiers at The Home Depot	Variable
c. Monthly sugar costs for The Hershey Company	Variable
d. Cost of fuel used by Old Dominion Freight Line, a national trucking company	Variable
e. Shipping costs at Amazon.com	Variable
f. Monthly rent for Onyx Nail Bar, a nail salon in Dallas, Texas	Fixed
g. Sales commissions at Tampa Honda in Florida	Variable
h. Monthly insurance costs for the building housing the administrative offices of Panera Bread in St. Louis, Missouri	Fixed
i. Monthly depreciation of equipment used in the customer service department at Klaben Ford Lincoln, a car dealership in Kent, Ohio	Fixed
j. Cost of rubber used to manufacture L.L. Bean boots	Variable
k. Cost of oranges sold at a Kroger's grocery store	Variable
l. Monthly office lease costs for the Portland office of E&Y, a global audit firm	Fixed
m. Monthly cost of coffee at a Dunkin' Donuts store	Variable
n. Property taxes for an Applebees' Neighborhood Grill & Bar	Fixed
o. Depreciation of exercise equipment at an LA Fitness club	Fixed

(5 min.) S2-17

1.	To reduce the company's tax bill, Jack 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.
2.	Because Emilie works in the accounting department, she is aware that profits are going to fall short of analysts' projections. She tells her aunt to sell stock in the company before the earnings release date.	Confidentiality — Refrain from using confidential information for unethical or illegal advantage.
3.	Veronica 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.
4.	There is a failure in the company's backup systems after a system crash. Month end reports will be delayed. Kayla, the manager of the division experiencing the system failure, does not report this upcoming delay to anyone because she 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.
5.	Taylor 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. Taylor does not do anything about the subordinate's indiscreet conversation.	Confidentiality — Keep information confidential except when disclosure is authorized or legally required.

Exercises (Group A)

(10-15 min.) E2-18A

Reqs. 1–2

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	$2,700					
Purchases of merchandise			$37,000			
Freight-in			$3,700			
Salespeople's salaries				$4,600		
Depreciation expense on delivery trucks					$1,500	
Research on selling satellite radio service	$ 250					
Customer Complaint Department						$550
Rearranging store layout		$650				
Total	$2,950	$650	$40,700	$9,700	$1,500	$550

Req. 3

The total product costs are $40,700.

(15 min.) E2-19A

Reqs. 1–3

Value Chain Cost Classification								
			Production					
	R & D	Design	Direct Materials	Direct Labor	Mfg. Overhead	Marketing	Distribution	Customer Service
Delivery expense							$9	
Salaries of salespeople						$4		
Chipset			$56					
Exterior case for phone			$6					
Assembly-line workers' wages				$8				
Technical customer support hotline								$5
Depreciation on plant and equipment					$60			
Rearrange production process		$3						
1-800 (toll-free) line for customer orders						$1		
Scientists' salaries	$10							
Total costs	$10	$ 3	$62	$8	$60	$5	$9	$5

Req. 4

Total product costs:

Direct materials……	$ 62
Direct labor……	8
Manufacturing overhead……	60
Total product cost…….	$130

Req. 5

The total prime cost is:

Direct materials……	$ 62
Direct labor……	8
	$ 70

Req. 6

The total conversion cost is:

Direct labor……	$ 8
Manufacturing overhead……	60
	$ 68

(5-10 min.) E2-20A

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

(15-20 min.) E2-21A

Req. 1

		DM	DL	IM	IL	Other MOH	Period
a.	Airplane seats	$240					
b.	Production supervisors' salaries				$100		
c.	Depreciation on forklifts in factory					$40	
d.	Machine lubricants			$35			
e.	Factory janitors' wages				$15		
f.	Assembly workers' wages		$620				
g.	Property tax on corporate marketing office						$30
h.	Plant utilities					$120	
i.	Cost of warranty repairs						$260
j.	Machine operators' health insurance		$10				
k.	Depreciation on administrative offices						$60
l.	Cost of designing new plant layout						$170
m.	Jet engines	$1,400					
	TOTAL	$1,640	$630	$35	$115	$160	$520

Req. 2 Total manufacturing overhead costs = IM + IL + Other MOH
= $35 + 115 + 160 = $310

Req. 3 Total product costs = DM + DL + MOH
= $1,640 + 630 + 310 = $2,580

Req. 4 Total prime costs = DM + DL
= $1,640 + 630 = $2,270

Req. 5 Total conversion costs = DL + MOH
= $630 + 310 = $940

Req. 6 Total period costs = $520

(10-15 min.) E2-22A

Outdoor Amenities		
Income Statement		
For the Year Ended December 31		
Sales revenue		$255,000
Cost of goods sold:		
Wood	$ 57,800	
Stain	12,700	
Labor costs	36,900	
Indirect labor costs	21,300	
Utility costs	11,200	
Other manufacturing overhead	9,800	
Less: **Cost of goods sold**		**149,700**
Gross profit		**105,300**
Less: Operating expenses		
Salaries and wages	$37,400	
Rent and utilities	12,000	
Marketing costs	17,300	
Total operating expenses		**66,700**
Operating income		**$ 38,600**

Note: For this exercise, the student is not required to prepare an income statement, but the income statement is presented here to show the calculations for each item in the exercise requirements.

(25 min.) E2-23A

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

a.

Revenues	$27,600
Less: **Cost of goods sold**	**14,800**
Gross profit	$12,800

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

Beginning raw materials inventory	$ **2,600**
Plus: Purchases of direct materials	9,200
Materials available for use	11,800
Less: Ending raw materials inventory	(3,200)
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	6,300	18,300
Total manufacturing costs to account for		18,300
Less: Ending work in process inventory		(1,700)
Cost of goods manufactured		$16,600

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)	16,600
Cost of goods available for sale	21,500
Less: **Ending finished goods inventory**	(**6,700**)
Cost of goods sold (from part A)	$14,800

(10-15 min.) E2-24A

Cost of goods sold calculation:	
Beginning inventory	$ 16,250
Plus: Purchases and freight-in*	657,500
Cost of goods available for sale	673,750
Less: Ending inventory	(16,000)
Cost of goods sold	$ 657,750

Prestigious Pugs		
Income Statement		
For Last Year		
Sales revenue		$ 1,105,000
Less: Cost of goods sold		(657,750)
Gross profit		447,250
Less operating expenses:		
Website expenses	$ 55,000	
Marketing expenses	30,500	
Freight-out expenses	29,500	
Total operating expenses		(115,000)
Operating income		$ 332,250

*purchases of $638,000 + freight-in of $19,500 = $657,500

(5-10 min.) E2-25A

Calculation of direct materials used		
Beginning raw materials inventory	$	17,000
Plus: Purchases of direct materials		55,000
Materials available for use	$	72,000
Less: Ending raw materials inventory		(12,000)
Direct materials used	$	60,000

Schedule of cost of goods manufactured		
Beginning work in process inventory	$	22,000
Plus: Manufacturing costs incurred		
Direct materials used (from previous schedule)		60,000
Direct labor		121,000
Manufacturing overhead		151,000
Total manufacturing costs to account for	$	354,000
Less: Ending work in process inventory		(21,000)
Cost of goods manufactured	$	333,000

(15-20 min.) E2-26A

Calculation of direct materials used	
Beginning raw materials inventory	$ 23,000
Plus: Purchases of direct materials	74,000
Materials available for use	$ 97,000
Less: Ending raw materials inventory	(25,000)
Direct materials used	$ 72,000

Schedule of cost of goods manufactured	
Beginning work in process inventory	$ 35,000
Plus: Manufacturing costs incurred	
Direct materials used (from previous schedule)	72,000
Direct labor	86,000
Manufacturing overhead (42,000 + 11,500 + 13,400 + 3,700)	70,600
Total manufacturing costs to account for	$ 263,600
Less: Ending work in process inventory	(31,000)
Cost of goods manufactured	**$ 232,600**

Calculation of cost of goods sold	
Beginning finished goods inventory	$ 20,000
Plus: Cost of goods manufactured (from previous schedule)	232,600
Cost of goods available for sale	$ 252,600
Less: Ending finished goods inventory	(22,000)
Cost of goods sold	**$ 230,600**

(15-20 min.) E2-27A

West Nautical Company

Income Statement

For Current Year

Sales revenue (34,000 units x $12)	$	408,000
Less: Cost of goods sold (from previous exercise)		230,600
Gross profit	$	177,400
Less operating expenses:		
Marketing expenses		77,000
General and administrative expenses		28,500
Total operating expenses	$	105,500
Operating income	$	71,900

Students may simply use the $230,600 cost of goods sold computation from E2-26A, rather than repeating the details of the computation of cost of goods sold here.

(15-20 min.) E2-28A

a. The fair market value of old manufacturing equipment when deciding whether or not to replace it with new 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.
b. 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.
c. 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.
d. 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.
e. 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.
f. The interest rate received 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 to earn additional interest.
g. 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.
h. 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.
i. 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 because gas and diesel do not cost the same amount.
j. 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.

(10 min.) E2-29A

1)	Variable costs	=	($2 x 25,000,000)	=	$50,000,000
	+ Fixed costs			=	7,000,000
	= Total costs			=	$57,000,000
2)	$57,000,000	÷	25,000,000 units	=	$2.28 per unit
3)	$ 7,000,000	÷	25,000,000 units	=	$0.28 per unit
4)	Variable costs	=	($2 x 35,000,000)	=	$70,000,000
	+ Fixed costs			=	7,000,000
	= Total costs			=	$77,000,000
5)	$77,000,000	÷	35,000,000 units	=	$2.20 per unit
6)	$ 7,000,000	÷	35,000,000 units	=	$0.20 per unit

7) The average product cost decreases as production volume increases because the company is *spreading its fixed costs* over 10 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. 1–2

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	$2,100					
Purchases of merchandise			$36,000			
Freight-in			$3,500			
Salespeople's salaries				$4,100		
Depreciation expense on delivery trucks					$1,100	
Research on selling satellite radio service	$500					
Customer complaint department						$550
Rearranging store layout		$900				
Total	$2,600	$900	$39,500	$9,800	$1,100	$550

Req. 3

The total product costs are the $36,000 of purchases plus the $3,500 freight-in = $39,500.

(15 min.) E2-31B

Reqs. 1–3

Cost Classification								
			Production					
	R & D	Design	Direct Materials	Direct Labor	Mfg. Overhead	Marketing	Distribution	Customer Service
Delivery expense							$10	
Salaries of salespeople						$6		
Chipset			$60					
Exterior case for phone			$4					
Assembly-line workers' wages				$12				
Technical customer support hotline								$5
Depreciation on plant and equipment					$65			
Rearrange production process		$1						
1-800 (toll-free) line for customer orders						$3		
Scientists' salaries	$11							
	-							
Total costs	$11	$1	$64	$12	$65	$9	$10	$5

Req. 4

Total product costs:

Direct materials	$ 64
Direct labor	12
Manufacturing overhead	65
Total product cost	$141

Req. 5

The total prime cost is:

Direct materials	$ 64
Direct labor	12
	$ 76

Req. 6

The total conversion cost is:

Direct labor	$ 12
Manufacturing overhead	65
	$ 77

(5-10 min.) E2-32B

a. Customer Service
b. Marketing
c. Purchasing/Producing
d. Distribution
e. Design
f. Research and Development

(15-20 min.) E2-33B

Req. 1

		DM	DL	IM	IL	Other MOH	Period
a.	Airplane seats	$300					
b.	Production supervisors' salaries				$110		
c.	Depreciation on forklifts in factory					$90	
d.	Machine lubricants			$30			
e.	Factory janitors' wages				$50		
f.	Assembly workers' wages		$630				
g.	Property tax on corporate marketing offices						$20
h.	Plant utilities					$140	
i.	Cost of warranty repairs						$230
j.	Machine operators' health insurance		$40				
k.	Depreciation on admin offices						$100
l.	Cost of designing new plant layout						$160
m.	Jet engines	$1,400					
	TOTAL	$1,700	$670	$30	$160	$230	$510

Req. 2 Total manufacturing overhead costs = IM + IL + Other MOH
= $30 + 160 + 230 = $420

Req. 3 Total product costs = DM + DL + MOH
= $1,700 + 670 + 420 = $2,790

Req. 4 Total prime costs = DM + DL
= $1,700 + 670 = $2,370

Req. 5 Total conversion costs = DL + MOH
= $670 + 420 = $1,090

Req. 6 Total period costs = $510

(15 min.) E2-34B

Backyard Amenities		
Income Statement		
For the Year Ended December 31		
Sales revenue		$267,000
Cost of goods sold:		
Wood	$ 59,100	
Stain	14,500	
Labor costs	33,700	
Indirect labor costs	23,700	
Utility costs	12,100	
Other manufacturing overhead	11,300	
Less: **Cost of goods sold**		**154,400**
Gross profit		**112,600**
Less: Operating expenses		
Salaries and wages	$38,100	
Rent and utilities	13,200	
Marketing costs	15,200	
Total operating expenses		**66,500**
Operating income		**$ 46,100**

Note: For this exercise, the student is not required to prepare an income statement, but the income statement is presented here to show the calculations for each item in the exercise requirements.

(25 min.) E2-35B

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

a.

Revenues	$27,500
Less: **Cost of goods sold**	**14,800**
Gross profit	$12,700

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

Beginning raw materials inventory	**$ 2,300**
Plus: Purchases of direct materials	9,700
Materials available for use	12,000
Less: Ending raw materials inventory	(3,200)
Direct materials used	$ 8,800

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	$8,800	
Direct labor	3,300	
Manufacturing overhead	6,300	18,400
Total manufacturing costs to account for		18,400
Less: Ending work in process inventory		(1,900)
Cost of goods manufactured		$16,500

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

Beginning finished goods inventory	$ 4,300
Plus: Cost of goods manufactured (from above)	16,500
Cost of goods available for sale	20,800
Less: **Ending finished goods inventory**	**(6,000)**
Cost of goods sold (from part A)	$14,800

(10-15 min.) E2-36B

Cost of goods sold calculation:	
Beginning inventory	$ 19,800
Plus: Purchases and freight-in*	655,500
Cost of goods available for sale	675,300
Less: Ending inventory	(13,100)
Cost of goods sold	$ 662,200

Charismatic Cats		
Income Statement		
For Current Year		
Sales revenue		$ 1,060,000
Less: Cost of goods sold		(662,200)
Gross profit		397,800
Less operating expenses:		
Website expenses	$ 53,000	
Marketing expenses	33,200	
Freight-out expenses	28,500	
Total operating expenses		(114,700)
Operating income		$ 283,100

*purchases of $636,000 + freight-in of $19,500 = $655,500

(5-10 min.) E2-37B

Calculation of direct materials used		
Beginning raw materials inventory	$	14,000
Plus: Purchases of direct materials		63,000
Materials available for use	$	77,000
Less: Ending raw materials inventory		(19,000)
Direct materials used	$	58,000

Schedule of cost of goods manufactured		
Beginning work in process inventory	$	25,000
Plus: Manufacturing costs incurred		
Direct materials used (from previous schedule)		58,000
Direct labor		133,000
Manufacturing overhead		162,000
Total manufacturing costs to account for	$	378,000
Less: Ending work in process inventory		(24,000)
Cost of goods manufactured	$	354,000

(15-20 min.) E2-38B

Calculation of direct materials used	
Beginning raw materials inventory	$ 25,000
Plus: Purchases of direct materials	79,000
Materials available for use	$ 104,000
Less: Ending raw materials inventory	(33,000)
Direct materials used	$ 71,000

Schedule of cost of goods manufactured	
Beginning work in process inventory	$ 42,000
Plus: Manufacturing costs incurred	
Direct materials used (from previous schedule)	71,000
Direct labor	84,000
Manufacturing overhead (46,000 + 7,500 + 13,100 + 4,400)	71,000
Total manufacturing costs to account for	$ 268,000
Less: Ending work in process inventory	(36,000)
Cost of goods manufactured	**$ 232,000**

Calculation of cost of goods sold	
Beginning finished goods inventory	$ 21,000
Plus: Cost of goods manufactured (from previous schedule)	232,000
Cost of goods available for sale	$ 253,000
Less: Ending finished goods inventory	(28,000)
Cost of goods sold	**$ 225,000**

(15-20 min.) E2-39B

Golden Bay Company
Income Statement
For Current Year

Sales revenue (39,000 x $15)	$ 585,000
Less: Cost of goods sold (from previous exercise)	225,000
Gross profit	$ 360,000
Less: operating expenses:	
Marketing expenses	76,000
General and administrative expenses	26,500
Total operating expenses	$ 102,500
Operating income	$ 257,500

Students may simply use the $225,000 cost of goods sold computation from E2-38B, rather than repeating the details of the computation here.

(15-20 min.) E2-40B

a. 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 – the cost is relevant if it differs between outsourcing and making the materials in-house.
b. The cost of land when determining where to build a new call center	Relevant – the company will incur different land cost depending on where they locate.
c. The average cost of vehicle operation when purchasing a new delivery van	Relevant – the average cost of vehicle operation will differ depending on which van is purchased.
d. Real estate property tax rates when selecting the location for a new order processing center	Relevant – the company will incur different property taxes depending on where they locate.
e. The purchase price of the old computer when replacing it with a new computer with improved features	Irrelevant – the cost of the computer, which was purchased in the past, is a sunk cost.
f. The cost of renovations when deciding whether to build a new office building or to renovate the existing office building	Relevant – the cost of renovating the existing building versus building a new one will likely differ.
g. The original cost of the current stove when selecting a new, more efficient stove for a restaurant	Irrelevant – the cost of the current stove, which was purchased in the past, is a sunk cost.
h. Local tax incentives when selecting the location of a new office complex for a company's headquarters	Relevant – the company will incur different tax incentives depending on where they locate.
i. The fair market value (trade-in value) of the existing forklift when deciding whether to replace it with a new, more efficient model	Relevant – the fair market value is the amount of money the company could expect to receive from selling the existing forklift if they decide to replace it with a newer model.

j. Fuel economy when purchasing new trucks for the delivery fleet	Relevant – the average cost of fuel (fuel economy) will differ depending on which delivery vehicle is purchased.

(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 decreases 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. 1–3

Ravenna Cola								
Value Chain Cost Classification								
(In thousands)								
			Production					
Cost	R&D	Design	Direct Materials	Direct Labor	Mfg. Overhead	Marketing	Distribution	Customer Service
Plant janitors' wages					$1,100			
Truck drivers' wages							$305	
Payment for new recipe	$1,260							
Depreciation on delivery trucks							$250	
Plant utilities					$ 450			
Lime flavoring			$820					
Rearranging plant layout		$1,600						
Bottles			$1,040					
Salt*					$50			
Sales commissions						$425		
Production costs of "cents-off" store coupons for customers						$800		
Lemon syrup			$18,000					
Replace products with expired dates								$30
Depreciation on plant and equipment					$3,400			
Wages of workers who mix syrup				$8,300				
Customer hotline								$210
Freight-in			$1,100					
Total costs	$1,260	$1,600	$20,960*	$8,300	$5,000	$1,225	$555	$240

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

Req. 4

Total product costs:

Direct materials.....	$20,960
Direct labor.....	8,300
Manufacturing overhead.....	5,000
Total product costs.....	$34,260

(continued) P2-42A

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 $112,000, Work in process $89,000, and Finished goods $355,000.

Inventory Reconstruction Schedule					
Raw Materials Inventory		Work in Process Inventory		Finished Goods Inventory	
Beginning inventory	$75,000 (G)	Beginning inventory	$ 226,000 (G)	Beginning inventory	$ 213,000 (G)
+ Purchases	533,000 (G)	+ Direct materials used	496,000[e]	+ Cost of goods manufactured	1,402,000[c]
		+ Direct labor	551,000 (G)		
		+ Manufacturing overhead	218,000 (G)		
= Materials available for use	608,000	= Total manufacturing costs to account for	1,491,000 (G)	= Cost of goods available for sale	1,615,000 (G)
− Ending inventory	112,000[f]	− Ending inventory	89,000[d]	− Ending inventory	355,000[b]
= Direct Materials used	$496,000[e]	= Cost of goods manufactured	$1,402,000[c]	= Cost of goods sold	$1,260,000[a]

(G) = Amount given in the case.

[a] Cost of goods sold:

Sales	×	(1 − Gross profit %)	=	Cost of goods sold
$1,800,000	×	70%	=	$1,260,000

[b] Ending finished goods inventory:

Cost of goods available for sale	−	Ending finished goods inventory	=	Cost of goods sold
$1,615,000	−	Ending finished goods inventory	=	$1,260,000
		Ending finished goods inventory	=	$ 355,000

[c] Cost of goods manufactured:

Beginning finished goods inventory	+	Cost of goods manufactured	=	Cost of goods available for sale
$213,000	+	Cost of goods manufactured	=	$1,615,000
		Cost of goods manufactured	=	$1,402,000

(continued) P2-43A

[d] Ending work in process inventory:

Total manufacturing costs to account for	−	Ending work in process inventory	=	Cost of goods manufactured
$1,491,000	−	Ending work in process inventory	=	$1,402,000
		Ending work in process inventory	=	$ 89,000

[e] Direct materials used:

Beginning work in process inventory	+	Direct material used	+	Direct labor	+	Manufacturing overhead	= Total manufacturing costs to account for
$226,000	+	Direct materials used	+	$551,000	+	$218,000	= $1,491,000
		Direct materials used					= $ 496,000

[f] Ending raw materials inventory:

Materials available for use	−	Ending raw materials inventory	=	Direct materials used
$608,000	−	Ending raw materials inventory	=	$496,000
		Ending raw materials inventory	=	$112,000

(45-55 min.) P2-44A

Part One:

Cost of goods sold calculation:	
Beginning inventory	$ 12,000
Plus: Purchases	36,000
Cost of goods available for sale	48,000
Less: Ending inventory	(9,100)
Cost of goods sold	$ 38,900

Patsy's Posies		
Income Statement		
Year Ended December 31, 2016		
Sales revenue		$53,000
Less: Cost of goods sold		38,900
Gross profit		14,100
Less operating expenses:		
Utilities expense	$ 1,100	
Rent expense	4,600	
Sales commission expense	4,000	9,700
Operating income		$4,400

(continued) P2-44A

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		30,000
Materials available for use	$	44,000
Less: Ending raw materials inventory		(8,000)
Direct materials used	$	36,000

Schedule of cost of goods manufactured		
Beginning work in process inventory	$	-
Plus: Manufacturing costs incurred		
Direct materials used (from previous schedule)		36,000
Direct labor		23,000
Manufacturing overhead ($4,900 + $1,350 + $9,600)		15,850
Total manufacturing costs to account for	$	74,850
Less: Ending work in process inventory		(5,000)
Cost of goods manufactured	$	69,850

Calculation of cost of goods sold		
Beginning finished goods inventory	$	–
Plus: Cost of goods manufactured (from previous schedule)		69,850
Cost of goods available for sale	$	69,850
Less: Ending finished goods inventory		(2,500)
Cost of goods sold	$	67,350

Req. 2

Floral City Manufacturing

Income Statement

For Year Ended December 31, 2017

Sales revenue	$	104,000
Less: Cost of goods sold (from previous schedule)		67,350
Gross profit	$	36,650
Less operating expenses:		
Delivery expense		1,500
Sales salaries expense		4,300
Customer service hotline		1,400

Total operating expenses	$ 7,200
Operating income	$ 29,450

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*.

(continued) P2-44A

Part Three: *Reqs. 1–2*

Patsy's Posies Partial Balance Sheet December 31, 2016		Floral City Manufacturing Partial Balance Sheet December 31, 2017	
Inventory.....	$9,100	Raw materials inventory.....	$ 8,000
		Work in process inventory..	5,000
		Finished goods inventory…	2,500
		Total inventory.....	$15,500

(10 min.) P2-45A

1) As shown below, the quantitative data suggests you would net $7,400 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	**$49,000**	**$54,000**
Rent	**0**	**(8,500)**
Food	**0**	**(3,250)**
Cable and internet	**0**	**(650)**
Salary, net of living expenses	**$49,000**	**$41,600**

Net difference = $49,000 – $41,600 = $7,400

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 $7,400 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	6,000	7,500	10,000
Total fixed costs	$ 12,000	$ 12,000	$ 12,000
Total variable costs	9,300	11,625	15,500
Total costs	$ 21,300	$23,625	$27,500
Fixed cost per pizza	$ 2.00	$ 1.60	$ 1.20
Variable cost per pizza	1.55	1.55	1.55
Average cost per pizza	$ 3.55	$ 3.15	$ 2.75
Selling price per pizza	$ 6.25	$ 6.25	$ 6.25
Average profit per pizza	$ 2.70	$ 3.10	$ 3.50

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 $23,250 calculated as follows

Total Sales Revenue	− Total Costs	= Monthly Profit
($6.25 per pizza × 7,500 pizzas)	− $23,625	= $23,250

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)	− $27,500	= $30,000

Because the restaurant will generate an additional profit of $6,750, the owner should decrease the sales price to increase the volume.

Problems (Group B)

(30 min.) P2-47B

Reqs. 1–3

Crystal Cola Value Chain Cost Classification *(In thousands)*								
			Production					
Cost	R&D	Design	Direct Materials	Direct Labor	Mfg. Overhead	Marketing	Distribution	Customer Service
Truck drivers' wages							$285	
Lemon syrup			$16,000					
Depreciation on trucks							$175	
Lime flavoring			$1,020					
Payment for new recipe	$1,090							
Customer hotline								$220
Sales commissions						$450		
Production costs of "cents-off" store coupons for customers						$630		
Rearranging plant layout		$1,200						
Freight-in			$1,300					
Depreciation on plant and equipment					$2,900			
Bottles			$1,490					
Salt*					$15			
Plant utilities					$1,250			
Wages of workers who mix syrup				$7,900				
Plant janitors' wages					$1,000			
Replace products with expired dates								$40
Total costs	$1,090	$1,200	$19,810*	$7,900	$5,165	$1,080	$460	$260

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

Req. 4

Total product costs:

Direct materials.....	**$19,810**
Direct labor.....	**7,900**
Manufacturing overhead.....	**5,165**
Total product costs.....	**$32,875**

(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 $51,000, Work in process $102,000, and Finished goods $255,000.

Inventory Reconstruction Schedule					
Raw Materials Inventory		Work in Process Inventory		Finished Goods Inventory	
Beginning inventory	$85,000 (G)	Beginning inventory	$ 187,000 (G)	Beginning inventory	$ 209,000 (G)
+ Purchases	524,000 (G)	+ Direct materials used	558,000[e]	+ Cost of goods manufactured	1,406,000[c]
		+ Direct labor	545,000 (G)		
		+ Manufacturing overhead	218,000 (G)		
= Materials available for use	609,000	= Total manufacturing costs to account for	1,508,000 (G)	= Cost of goods available for sale	1,615,000 (G)
− Ending inventory	51,000[f]	− Ending inventory	102,000[d]	− Ending inventory	255,000[b]
= Direct materials used	$558,000[e]	= Cost of goods manufactured	$1,406,000[c]	= Cost of goods Sold	$1,360,000[a]

(G) = Amount given in the case.

[a] Cost of good sold:

Sales	×	(1 − Gross profit %)	=	Cost of goods sold
$1,600,000	×	85%	=	$1,360,000

[b] Ending finished goods inventory:

Cost of goods available for sale	− Ending finished goods inventory	= Cost of goods sold	
$1,615,000	− Ending finished goods inventory	=	$1,360,000
	Ending finished goods inventory	=	$ 255,000

[c] Cost of goods manufactured:

Beginning finished goods inventory	+ Cost of goods manufactured	= Cost of goods available for sale	
$209,000	+ Cost of goods manufactured	=	$1,615,000
	Cost of goods manufactured	=	$1,406,000

(continued) P2-48B

[d] Ending work in process inventory:

Total manufacturing costs to account for	−	Ending work in process inventory	=	Cost of goods manufactured
$1,508,000	−	Ending work in process inventory	=	$1,406,000
		Ending work in process inventory	=	$ 102,000

[e] Direct materials used:

Beginning work in process inventory	+	Direct material used	+	Direct labor	+	Manufacturing overhead	= Total manufacturing costs to account for
$187,000	+	Direct materials used	+	$545,000	+	$218,000	= $1,508,000
		Direct materials used					= $ 558,000

[f] Ending raw materials inventory:

Materials available for use	−	Ending raw materials inventory	=	Direct materials used
$609,000	−	Ending raw materials inventory	=	$558,000
		Ending raw materials inventory	=	$51,000

(45-55 min.) P2-49B

Part One:

Cost of goods sold calculation:	
Beginning inventory	$ 12,600
Plus: Purchases	38,000
Cost of goods available for sale	50,600
Less: Ending inventory	(9,200)
Cost of goods sold	$ 41,400

Fran's Flowers		
Income Statement		
Year Ended December 31, 2016		
Sales revenue		$53,000
Less: Cost of goods sold		41,400
Gross profit		11,600
Less operating expenses:		
Utilities expense	$ 1,000	
Rent expense	4,400	
Sales commission expense	4,100	9,500
Operating income		$2,100

(continued) P2-49B

Part Two:

Req. 1

Calculation of direct materials used	
Beginning raw materials inventory	18,000
Plus: Purchases of direct materials, freight-in, and import duties	31,000
Materials available for use	49,000
Less: Ending raw materials inventory	(7,500)
Direct materials used	41,500

Schedule of cost of goods manufactured	
Beginning work in process inventory	–
Plus: Manufacturing costs incurred	
Direct materials used (from previous schedule)	41,500
Direct labor	22,000
Manufacturing overhead ($4,300 + $1,250 + $9,400)	14,950
Total manufacturing costs to account for	78,450
Less: Ending work in process inventory	(4,000)
Cost of goods manufactured	74,450

Calculation of cost of goods sold	
Beginning finished goods inventory	–
Plus: Cost of goods manufactured (from previous schedule)	74,450
Cost of goods available for sale	74,450
Less: Ending finished goods inventory	(4,500)
Cost of goods sold	69,950

Req. 2

Floral Place Manufacturing
Income Statement
For Year Ended December 31, 2017

Sales revenue	109,000
Less: Cost of goods sold (from previous schedule)	69,950
Gross profit	39,050
Less operating expenses:	
Delivery expense	3,800
Sales salaries expense	4,800
Customer service hotline	1,700
Total operating expenses	10,300
Operating income	28,750

(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. 1–2*

Fran's Flowers Partial Balance Sheet December 31, 2016		Floral Place Manufacturing Partial Balance Sheet December 31, 2017	
Inventory.....	$9,200	Raw materials inventory.....	$ 7,500
		Work in process inventory..	4,000
		Finished goods inventory…	4,500
		Total inventory.....	$16,000

(10 min.) P2-50B

1) As shown below, the quantitative data suggests you would net $10,800 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	$42,000	$47,000
Rent	0	(12,000)
Food	0	(3,000)
Cable and internet	0	(800)
Salary, net of living expenses	$42,000	$31,200

Net difference = $42,000 − $31,200 = $10,800

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 $10,800 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.) P2-51B

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
Sales 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 $28,400 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

Because the restaurant will generate an additional profit of $4,600 ($33,000 − $28,400), the owner should decrease the sales price to increase the volume.

Serial Case

C2-52

Req. 1

Caesars Entertainment Corporation Consolidated Statements of Operations (condensed and adapted) In millions, except per share data			
	Years Ended December 31,		
	2014	2013	2012
Revenues			
Casino revenue	$ 5,418	$ 5,529	$ 5,916
Food and beverage revenue	1,522	1,451	1,438
Rooms revenue	1,207	1,167	1,147
Other revenues	369	73	(315)
Net revenues	$ 8,516	$ 8,220	$ 8,186
Expenses			
Casino expenses	$ 3,253	$ 3,112	$ 3,368
Food and beverage expenses	694	639	634
Rooms expenses	315	296	289
Miscellaneous expenses	4,706	6,199	3,761
Total expenses	$ 8,968	$ 10,246	$ 8,052
Income/(loss) from operations	$ (452)	$ (2,026)	$ 134

Req. 2

Caesar's operating income decreased from 2012–2013 and increased from 2013–2014.

Req. 3

The casino division had the most revenue in 2014 and generated the most operating income in 2012.

Discussion & Analysis

A2-53

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 chain are R&D, design, production or purchases, marketing, distribution, and customer service. Costs that go directly to the income statement are all costs along the value chain for service companies, all costs except for purchases for merchandisers, and all costs 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 "product costs"? What is meant by the term "period costs"? Why does it matter whether a cost is a product cost or a period cost?

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

Levi Strauss makes jeans. The 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 materials, 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 ending finished goods inventory is deducted from cost of goods available for sale on the income statement to determine cost of goods sold. 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 online search of the term "greenwashing." What examples of greenwashing can you find?

Student answers may vary.

12. Ricoh is 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 online search for "cradle to cradle design" or a related term if you need ideas.

Student answers may vary.

Application & Analysis

A2-54

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 a product cost or a period cost. Explain your justification.**

   All the costs, except 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

a) If Ryan were to increase income by adding sales commission costs and advertising costs to product costs, the following ethical principles would be violated:
    i. Competence: Perform professional duties in accordance with relevant laws, regulations, and technical standards. By adding in period costs to product costs, Ryan would be violating technical standards.
    ii. Competence: Provide decision support information that is accurate and clear. Adding in period costs would not be accurate or clear.
    iii. Credibility: Disclose all relevant information that could reasonably be expected to influence an intended user's understanding of the reports. Because these period costs would be buried in product costs, the user's understanding would be lessened.
    iv. Integrity: Abstain from engaging in or supporting any activity that might discredit the profession. By manipulating the accounting numbers to serve his own purpose, Ryan would be violating the integrity principle.

b) If Ryan were to make the company loan to Brandon, ethical principles would be violated because there is no company policy that allows loans to employees. Ryan would be violating:
    i. Integrity: Mitigate actual conflicts of interest. Ryan is putting the needs of his friend before the company. This is a conflict of interest. Ryan wants to help his friend which may be to the detriment of the company. If Brandon does not pay back the loan, the company loses money. If Brandon does not pay back the money on a timely basis, the company may have a cash shortage.
    ii. Competence: Perform professional duties in accordance with relevant laws, regulations, and technical standards. Ryan is using the company's funds for personal reasons and this is clearly a violation of his responsibility in a fiduciary position at the company. He does not have the right to disburse the company's funds for personal reasons.

c) Perhaps a third course of action would be to think of other alternatives, such as:
    i. Refer Brandon to a credit counseling service or to an employee assistance program.
    ii. Talk with the board about the temporary downturn and persuade them that bonuses might be a good strategic option.

Student answers 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 cafe 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.
      i. Costs are increasing here for Starbucks (labor, rent)
      ii. Costs are decreasing here for Starbucks (coffee costs)
   d. Marketing: Starbucks does a variety of marketing of its coffee, including print and web advertisements.
   e. Distribution: Delivery of services and products to customers through Starbucks stores, grocery stores and shipments from online sales.
   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 Bellevue, Tennessee, cafe:
   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
      iv. Direct Material cost would have decreased and Direct Labor cost would have increased in 2015
   b. Direct costs assuming Bellevue store is the cost object would be coffee in the cup, water in the cup, labor of the barista, 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 Bellevue, Tennessee, and a pound of bagged coffee assuming coffee is ground at time of purchase:
   a. Costs of that pound of coffee
      i. Direct material: Coffee beans, bag
      ii. Direct labor: Store barista who grinds coffee and packages
      iii. Overhead: Store lighting, store rent, depreciation on equipment, store manager salary, insurance on the store, and other similar costs
   b. Direct costs assuming Bellevue store is the 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.

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