Chapter 16
Introduction to Managerial Accounting

Review Questions

1. The primary purpose of managerial accounting is to provide information to help managers plan and control operations.

2. Planning means choosing goals and deciding how to achieve them, whereas, controlling means implementing the plans and evaluating operations by comparing actual results to the budget.

3. Financial accounting and managerial accounting differ on the following 6 dimensions: (1) primary users, (2) purpose of information, (3) focus and time dimension of the information, (4) rules and restrictions, (5) scope of information, and (6) behavioral.

4. Management accountability is the manager's responsibility to the various stakeholders of the company. Stakeholders have an interest of some sort in the company, and include customers, creditors, suppliers, employees, and investors. Managerial accounting provides information to help managers make wise decisions, effectively manage the resources of the company, evaluate operations, plan, and control. These things are requisite to meeting responsibilities to the company's stakeholders. For example: Making timely payments to suppliers, providing a return on investors' investment, repaying creditors, providing a safe work environment, and providing products that are safe and defect-free.

5. The four IMA standards of ethical practice and a description of each follow.

I. Competence.

- Maintain an appropriate level of professional expertise.
- Perform professional duties in accordance with relevant laws, regulations, and technical standards.
- Provide decision support information and recommendations that are accurate, clear, concise, and timely.
- Recognize and communicate professional limitations or other constraints that preclude responsible judgment or successful performance of an activity.

II. Confidentiality.

- Keep information confidential except when disclosure is authorized or legally required.
- Inform all relevant parties regarding appropriate use of confidential information. Monitor subordinates' activities to ensure compliance.
- Refrain from using confidential information for unethical or illegal advantage.

5., cont.

III. Integrity.

- Mitigate actual conflicts of interest, regularly communicate with business associates to avoid apparent conflicts of interest. Advise all parties of any potential conflicts.
- Refrain from engaging in any conduct that would prejudice carrying out duties ethically.
- Abstain from engaging in or supporting any activity that might discredit the profession.

IV. Credibility.

- Communicate information fairly and objectively.
- Disclose all relevant information that could reasonably be expected to influence an intended user's understanding of the reports, analyses, or recommendations.
- Disclose delays or deficiencies in information, timeliness, processing, or internal controls in conformance with organization policy and/or applicable law.

6. Service companies sell time, skills, and knowledge. They seek to provide services that are high quality with reasonable prices and timely delivery. Examples of service companies include phone service companies, banks, cleaning service companies, accounting firms, law firms, medical physicians, and online auction services.

7. Merchandising companies resell products they buy from suppliers. Merchandisers keep an inventory of products, and managers are accountable for the purchasing, storage, and sale of the products. Examples of merchandising companies include toy stores, grocery stores, and clothing stores.

8. Product costs are all costs of a product that GAAP requires companies to treat as an asset for external financial reporting. These costs are recorded as an asset and not expensed until the product is sold. Product costs include direct materials, direct labor, and manufacturing overhead.

9. Period costs are operating costs that are expensed in the same accounting period in which they are incurred, whereas product costs are recorded as an asset and not expensed until the accounting period in which the product is sold. Period costs are all costs not considered product costs. On the income statement, Cost of Goods Sold (a product cost) is subtracted from Sales Revenue to compute gross profit. Period costs are subtracted from gross profit to determine operating income.

10. Merchandising companies resell products they previously bought from suppliers, whereas manufacturing companies use labor, equipment, supplies, and facilities to convert raw materials into new finished products. In contrast to merchandising companies, manufacturing companies have a broad range of production activities that require tracking costs on three kinds of inventory.

11. The three inventory accounts used by manufacturing companies are Raw Materials Inventory, Work-in-Process Inventory, and Finished Goods Inventory.

Raw Materials Inventory includes materials used to manufacture a product. Work-in-Process Inventory includes goods that have been started in the manufacturing process but are not yet complete. Finished Goods Inventory includes completed goods that have not yet been sold.

12. For a manufacturing company, the activity in the Finished Goods Inventory account provides the information for determining Cost of Goods Sold. A manufacturing company calculates Cost of Goods Sold as Beginning Finished Goods Inventory + Cost of Goods Manufactured – Ending Finished Good Inventory.

For a merchandising company, the activity in the Merchandise Inventory account provides the information for determining Cost of Goods Sold. A merchandising company calculates Cost of Goods Sold as Beginning Merchandise Inventory + Purchases and Freight In – Ending Merchandise Inventory.

13. A direct cost is a cost that can be easily and cost-effectively traced to a cost object (which is anything for which managers want a separate measurement of cost). An indirect cost is a cost that cannot be easily or cost-effectively traced to a cost object.

14. The three product costs for a manufacturing company are direct materials, direct labor, and manufacturing overhead. Direct materials are materials that become a physical part of a finished product and whose costs are easily traceable to the finished product. Direct labor is the labor cost of the employees who convert materials into finished products. Manufacturing overhead includes all manufacturing costs except direct materials and direct labor, such as indirect materials, indirect labor, depreciation, rent, and property taxes.

15. Examples of manufacturing overhead include costs of indirect materials, indirect labor, repair and maintenance, utilities, rent, insurance, property taxes, manufacturing plant managers' salaries, and depreciation on manufacturing buildings and equipment.

16. Prime costs are direct materials plus direct labor. Conversion costs are direct labor plus manufacturing overhead. Note that direct labor is classified as both a prime cost and a conversion cost.

17. Cost of Goods Manufactured is calculated as Beginning Work-in-Process Inventory + Direct Materials Used + Direct Labor + Manufacturing Overhead – Ending Work-in-Process Inventory.

18. A manufacturing company calculates unit product cost as Cost of Goods Manufactured / Total number of units produced.

19. A service company calculates unit cost per service as Total Costs / Total number of services provided.

20. A merchandising company calculates unit cost per item as Total Cost of Goods Sold / Total number of items sold.

Short Exercises

S16-1

a. FA
b. MA
c. MA
d. FA
e. FA

S16-2

1. e.
2. f.
3. d.
4. a.
5. b.

S16-3

1. d.
2. c.
3. a.
4. b.

S16-4

a. Confidentiality
b. Integrity
c. Competence (skipping the session); Integrity (company-paid conference)
d. Competence
e. Credibility; Integrity

S16-5

Beginning inventory		$ 7,900
Purchases	$ 39,000	
Freight in	2,900	41,900
Cost of goods available for sale		49,800
Ending inventory		(4,900)
Cost of goods sold		$ 44,900

S16-6

	Solutions:	Calculations:
(a)	$12,900	$60,900 [b, below] - $48,000
(b)	$60,900	$59,000 + $1,900
(c)	$29,000	$42,000 – $13,000
(d)	$199,100	$113,000 + $86,100 [f, below]
(e)	$59,000	$88,000 – $29,000
(f)	$86,100	$88,000 – $1,900
(g)	$29,000	$113,000 – $84,000

Order of calculations:
Fit Apparel: (b), (a), (c)
Jones, Inc.: (e), (f), (d), and (g)

S16-7

a. 2
b. 4
c. 1
d. 5
e. 4
f. 5
g. 3

S16-8

Glue for frames	$ 350
Plant depreciation	9,000
Plant foreman's salary	5,000
Plant janitor's wages	1,000
Oil for manufacturing equipment	200
Total manufacturing overhead	$ 15,550

S16-9

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

S16-10

Beginning Raw Materials Inventory		$ 4,000
Purchases of Raw Materials	$ 6,400	
Freight In	200	6,600
Raw Materials Available for Use		10,600
Ending Raw Materials Inventory		(1,500)
Direct Materials Used		$ 9,100

S16-11

Beginning Work-in-Process Inventory		$ 5,000
Direct Materials Used	$ 10,000	
Direct Labor	7,000	
Manufacturing Overhead	21,000	
Total Manufacturing Costs Incurred during the Year		38,000
Total Manufacturing Costs to Account For		43,000
Ending Work-in-Process Inventory		(3,000)
Cost of Goods Manufactured		$ 40,000

S16-12

Beginning Finished Goods Inventory	$ 26,000
Cost of Goods Manufactured	156,000
Cost of Goods Available for Sale	182,000
Ending Finished Goods Inventory	(18,000)
Cost of Goods Sold	$ 164,000

S16-13

Cost of one haircut = Total operating costs / Total number of haircuts

= [$805 + $1,150 + $184 + $46] / 230 haircuts

= $2,185 / 230 haircuts

= $9.50 per haircut

Exercises

E16-14

a. Financial
b. Creditors and Stockholders
c. Controlling
d. Managers
e. Financial
f. Managerial
g. Planning

E16-15

a. JIT
b. TQM
c. ERP
d. E-Commerce

E16-16

Students' responses will vary. Illustrative answers follow.

Requirement 1

A new employee who has engaged in this behavior is unlikely to become a valued and trusted employee. This type of behavior is unethical.

As controller, Sue Peters probably hired Dale, and she is also responsible for the lack of controls that permitted a new employee to commit this theft. She will need to supervise the next bookkeeper more carefully.

Requirement 2

Being a new employee, Sue Peters may want to discuss the situation with the company's president. Unless Sue can obtain additional information, she may want to indicate to Dale that this behavior will not be tolerated in the future. Sue should establish better controls and closer supervision.

E16-17

Company A is a manufacturing company. Company B is a service company. Company C is a merchandising company.

E16-18

Company A (all amounts in millions):

Sales Revenue		$ 37
Cost of Goods Sold		22
Gross Profit		15
Operating Expenses:		
Selling Expenses	$ 5	
Administrative Expenses	4	
Total Operating Expenses		9
Operating Income		$ 6

Company B (all amounts in millions):

Service Revenue		$ 40
Expenses:		
Wages Expense	$ 19	
Rent Expense	12	
Total Expenses		31
Operating Income		$ 9

Company C (all amounts in millions):

Sales Revenue		$ 35
Cost of Goods Sold		20
Gross Profit		15
Operating Expenses:		
Selling Expenses	$ 3	
Administrative Expenses	5	
Total Operating Expenses		8
Operating Income		$ 7

E16-19

Company A (all amounts in millions):

Cash	$ 8
Accounts Receivable	12
Raw Materials Inventory	3
Work-in-Process Inventory	4
Finished Goods Inventory	6
Total current assets	$ 33

Company B (all amounts in millions):

Cash	$ 15
Accounts Receivable	8
Total current assets	$ 23

Company C (all amounts in millions):

Cash	$ 12
Accounts Receivable	15
Merchandise Inventory	10
Total current assets	$ 37

E16-20

Cost	Product			Product		Period	
	DM	**DL**	**MOH**	**Prime**	**Conversion**	**Selling**	**Admin**
a. Metal used for rims	***X***			***X***			
b. Sales salaries						**X**	
c. Rent on factory			**X**		**X**		
d. Wages of assembly workers		**X**		**X**	**X**		
e. Salary of production supervisor			**X**		**X**		
f. Depreciation on office equipment							**X**
g. Salary of CEO							**X**
h. Delivery expense						**X**	

E16-21

(a)

Total Manufacturing Costs to Account For	$ 55,800
Total Manufacturing Costs Incurred during the Year	(45,300)
Beginning Work-in-Process Inventory	$ 10,500

(b)

Total Manufacturing Costs Incurred during the Year	$ 45,300
Direct Materials Used	(14,200)
Direct Labor	(10,800)
Manufacturing Overhead	$ 20,300

(c)

Total Manufacturing Costs to Account For	$ 55,800
Cost of Goods Manufactured	(51,200)
Ending Work-in-Process Inventory	$ 4,600

(d)

Direct Materials Used	$ 35,200
Direct Labor	20,700
Manufacturing Overhead	10,500
Total Manufacturing Costs Incurred during the Year	$ 66,400

(e)

Beginning Work-in-Process Inventory	$ 40,500
Total Manufacturing Costs Incurred during the Year [d, above]	66,400
Total Manufacturing Costs to Account For	$ 106,900

(f)

Total Manufacturing Costs to Account For [e, above]	$ 106,900
Ending Work-in-Process Inventory	(25,900)
Cost of Goods Manufactured	$ 81,000

E16-21, cont.

(g)

Total Manufacturing Costs Incurred during the Year [h, below]	$ 5,200
Direct Labor	(1,400)
Manufacturing Overhead	(300)
Direct Materials Used	$ 3,500

(h)

Total Manufacturing Costs to Account For	$ 7,400
Beginning Work-in-Process Inventory	(2,200)
Total Manufacturing Costs Incurred During the Year	$ 5,200

(i)

Total Manufacturing Costs to Account For	$ 7,400
Ending Work-in-Process Inventory	(2,500)
Cost of Goods Manufactured	$ 4,900

E16-22
Requirement 1

KNIGHT CORP.
Schedule of Cost of Goods Manufactured
Year Ended December 31, 2014

Beginning Work-in-Process Inventory			$ 103,000
Direct Materials Used:			
Beginning Raw Materials Inventory	$ 56,000		
Purchases of Raw Materials	159,000		
Raw Materials Available for Use	215,000		
Ending Raw Materials Inventory	(23,000)		
Direct Materials Used		$ 192,000	
Direct Labor		122,000	
Manufacturing Overhead:			
Depreciation, plant building and equipment	16,000		
Insurance on plant	22,000		
Repairs and maintenance—plant	8,000		
Indirect labor	32,000		
Total Manufacturing Overhead		78,000	
Total Manufacturing Costs Incurred During the Year			392,000
Total Manufacturing Costs to Account For			495,000
Ending Work-in-Process Inventory			(63,000)
Cost of Goods Manufactured			$ 432,000

Requirement 2

Unit product cost = Cost of goods manufactured / Total units produced

= $432,000 / 2,160 lamps

= $200 per lamp

E16-23

Beginning Work-in-Process Inventory			$ 44,000
Direct Materials Used:			
Beginning Raw Materials Inventory	$ 29,000		
Purchases of Raw Materials	77,000		
Raw Materials Available for Use	106,000		
Ending Raw Materials Inventory	(32,000)		
Direct Materials Used		$ 74,000	
Direct Labor		87,000	
Manufacturing Overhead		45,000	
Total Manufacturing Costs Incurred During the Year			206,000
Total Manufacturing Costs to Account For			250,000
Ending Work-in-Process Inventory			(37,000)
Cost of Goods Manufactured			$ 213,000

Beginning Finished Goods Inventory	$ 19,000	
Cost of Goods Manufactured	213,000	[above]
Cost of Goods Available for Sale	232,000	
Ending Finished Goods Inventory	(24,000)	
Cost of Goods Sold	$ 208,000	

E16-24
Requirement 1

Grooming Revenue		$ 16,300
Expenses:		
Wages Expense	$ 3,900	
Grooming Supplies Expense	1,625	
Building Rent Expense	1,300	
Utilities Expense	325	
Depreciation Expense—Equipment	130	
Total Expenses		7,280
Net Income		$ 9,020

Requirement 2

Cost of Service to Groom One Dog = Total expenses / Total number of dogs groomed

= $7,280 / 650 dogs

= $11.20 per dog

E16-25
Requirement 1

Sales Revenue		$ 138,000
Cost of Goods Sold:		
Beginning Merchandise Inventory	$ 7,500	
Purchases	78,000	
Cost of Goods Available for Sale	85,500	
Ending Merchandise Inventory	(12,360)	
Cost of Goods Sold		73,140
Gross Profit		64,860
Selling and Administrative Expenses		49,680
Operating Income		$ 15,180

Requirement 2

Unit cost for one brush = Cost of goods sold / Total units sold

= $73,140 / 6,000 brushes

= $12.19 per brush

Problems (Group A)

P16-26A

Students' responses will vary. Illustrative answers follow.

Requirement 1

a. If the goods have been received, postponing recording of the purchase understates liabilities. This is unethical and inconsistent with the IMA standards even if the supplier agrees to delay billing.

b. The software has not been sold. Therefore, it would be inconsistent with the IMA standards to record it as sales.

c. Delaying year-end closing incorrectly records next year's sales in this year's sales. This is unethical and inconsistent with the IMA standards.

d. The appropriate allowance for bad debts is a difficult judgment. The decision should not be driven by the desire to meet a profit goal. It should be based on the likelihood that the company will not collect the debts. We cannot determine this without more information. However, since the company emphasizes earnings growth, which can lead to sales to customers with weaker credit records, reducing the allowance seems questionable. It is not clear whether this strategy is inconsistent with the IMA standards.

e. If the maintenance is postponed, there is no transaction to record. This strategy is beyond the responsibility of the controller, so it does not violate IMA standards.

P16-26A, cont.
Requirement 2

Management accountability is management's responsibility to the various stakeholders of the company. Each group of stakeholders has an interest of some sort in the business. Stakeholders include suppliers, employees, customers, vendors, investors, creditors, governments, and communities. Managers are accountable to the stakeholders and have a responsibility to wisely manage the company's resources.

Managers provide information about their decisions and the results of those decisions to the stakeholders. Financial accounting provides financial statements that report results of operations, financial position, and cash flows both to managers and to external stakeholders. Managerial accounting provides the information needed to plan and control operations. Managers are responsible to many stakeholders, so they must plan and control operations carefully. Making decisions that cause the company to decline will affect many different groups, from investors to employees, and may have an economic impact on the entire community.

The inconsistencies noted for Smart Software, Inc. particularly impact the financial statement information provided by financial accounting to external stakeholders.

Requirement 3

The controller should resist attempts to implement a, b, and c and should gather more information about d. If the President ignores Wallace, then Wallace needs to consider if she wants to work for a company that engages in unethical behavior.

P16-27A
Requirement 1

Period costs are operating costs that are expensed in the accounting period in which they are incurred.

Product costs are all costs of a product that GAAP requires companies to treat as an asset for external financial reporting. These costs are recorded as an asset (inventory) on the balance sheet until the asset is sold. The cost is then transferred to an expense account (Cost of Goods Sold) on the income statement. Product costs include direct materials, direct labor, and manufacturing overhead.

On the income statement, Cost of Goods Sold (product cost) is subtracted from Sales Revenue to determine gross profit. The period costs are then subtracted to determine operating income.

Requirement 2

Cost:	Period Cost	Product Cost		
		Direct Materials	Direct Labor	Manufacturing Overhead
Shaft and handle of weed trimmer		X		
Motor of weed trimmer		X		
Factory labor for workers assembling weed trimmers			X	
Nylon thread used by the weed trimmer (not traced to the product)				X
Glue to hold housing together				X
Plant janitorial wages				X
Depreciation on factory equipment				X
Rent on plant				X
Sales commissions	X			
Administrative salaries	X			
Plant utilities				X
Shipping costs to deliver finished weed trimmers to customers	X			

P16-28A
Requirement 1

Service companies sell services rather than products. They sell time, skills, and knowledge. Merchandising companies resell products previously bought from suppliers. Manufacturing companies use labor, equipment, supplies, and facilities to convert raw materials into new finished products.

Requirement 2

Company A is a merchandising company. Company B is a manufacturing company. The company types can be determined by the account names in the ledger.

Requirement 3

Company A:

Beginning Merchandise Inventory	$ 10,000
Purchases	156,000
Cost of Goods Available for Sale	166,000
Ending Merchandise Inventory	(12,500)
Cost of Goods Sold	$ 153,500

Company B:

Beginning Finished Goods Inventory	$ 15,500
Cost of Goods Manufactured	212,500
Cost of Goods Available for Sale	228,000
Ending Finished Goods Inventory	(11,750)
Cost of Goods Sold	$ 216,250

P16-29A
Requirement 1

THE WINDSHIELD PEOPLE
Income Statement
Month Ended February 28, 2014

Revenues:		
Sales Revenue		$ 26,000
Expenses:		
Salaries and Wages Expense	$ 9,000	
Materials Expense	4,900	
Depreciation Expense—Truck	250	
Depreciation Expense—Building and Equipment	800	
Supplies Expense	600	
Utilities Expense	2,130	
Total Expenses		17,680
Net Income		$ 8,320

Requirement 2

Per unit cost = Total expenses / Total windshields repaired

= $17,680 / 500 windshields

= $35.36 per windshield

Requirement 3

Yes. The actual unit cost per windshield of $35.36 is less than $50.

P16-30A
Requirement 1

CHARLIE'S PETS
Income Statement
Year Ended December 31, 2014

Revenues:		
Sales Revenue		$ 57,000
Cost of Goods Sold:		
Beginning Merchandise Inventory	$ 15,100	
Purchases of Merchandise	27,000	
Cost of Goods Available for Sale	42,100	
Ending Merchandise Inventory	(10,200)	
Cost of Goods Sold		31,900
Gross Profit		25,100
Expenses:		
Utilities Expense	3,900	
Rent Expense	4,100	
Sales Commission Expense	2,150	
Total Expenses		10,150
Net Income		$ 14,950

Requirement 2

Unit cost = Cost of goods sold / Total units sold

= $31,900 / 4,250 units

= $7.51 per unit

P16-31A
Requirement 1

FIDO TREATS
Schedule of Cost of Goods Manufactured
Year Ended December 31, 2014

Beginning Work-in-Process Inventory			$ 0
Direct Materials Used:			
Beginning Raw Materials Inventory	$ 13,400		
Purchases of Raw Materials	33,000		
Raw Materials Available for Use	46,400		
Ending Raw Materials Inventory	(9,500)		
Direct Materials Used		$ 36,900	
Direct Labor		22,000	
Manufacturing Overhead:			
Plant janitorial services	800		
Utilities for plant	1,600		
Rent on plant	13,000		
Total Manufacturing Overhead		15,400	
Total Manufacturing Costs Incurred during the Year			74,300
Total Manufacturing Costs to Account For			74,300
Ending Work-in-Process Inventory			(2,000)
Cost of Goods Manufactured			$ 72,300

P16-31A, cont.
Requirement 2

FIDO TREATS Income Statement Year Ended December 31, 2014		
Revenues:		
Sales Revenue		$ 109,000
Cost of Goods Sold:		
Beginning Finished Goods Inventory	$ 0	
Cost of Goods Manufactured*	72,300	
Cost of Goods Available for Sale	72,300	
Ending Finished Goods Inventory	(5,300)	
Cost of Goods Sold		67,000
Gross Profit		42,000
Expenses:		
Sales Salaries Expense	5,000	
Delivery Expense	1,700	
Customer Service Hotline Expense	1,400	
Total Expenses		8,100
Net Income (Loss)		$ 33,900

* From the Schedule of Cost of Goods Manufactured in Requirement 1.

Requirement 3

For a manufacturing company, cost of goods sold on the income statement is based on cost of goods manufactured and the change in Finished Goods Inventory. For a merchandising company, cost of goods sold on the income statement is based on cost of merchandise purchased (including freight in) and the change in Merchandise Inventory.

Requirement 4

Unit product cost = Cost of goods manufactured / Total units produced

= $72,300 / 18,075 units

= $4 per unit

P16-32A

TIOGA MANUFACTURING COMPANY
Schedule of Cost of Goods Manufactured
Month Ended June 30, 2014

Beginning Work-in-Process Inventory			$ 22,000
Direct Materials Used:			
Beginning Raw Materials Inventory	$ **26,000**		
Purchases of Raw Materials	54,000		
Raw Materials Available for Use	80,000		
Ending Raw Materials Inventory	(23,000)		
Direct Materials Used		**57,000**	
Direct Labor		**75,000**	
Manufacturing Overhead		43,000	
Total Manufacturing Costs Incurred During the Month			175,000
Total Manufacturing Costs to Account For			**197,000**
Ending Work-in-Process Inventory			(29,000)
Cost of Goods Manufactured			$ **168,000**

Missing Amounts:

Beginning Raw Materials Inventory:

Raw Materials Available for Use	$ 80,000
Purchases of Raw Materials	(54,000)
Beginning Raw Materials Inventory	$ 26,000

Direct Materials Used:

Raw Materials Available for Use	$ 80,000
Ending Raw Materials Inventory	(23,000)
Direct Materials Used	$ 57,000

Direct Labor:

Total Manufacturing Costs Incurred During the Month	$ 175,000
Manufacturing Overhead	(43,000)
Direct Materials Used [calculated above]	(57,000)
Direct Labor	$ 75,000

P16-32A, cont.

Total Manufacturing Costs to Account For:

Beginning Work-in-Process Inventory	$ 22,000
Total Manufacturing Costs Incurred During the Month	175,000
Total Manufacturing Costs to Account For	$ 197,000

Cost of Goods Manufactured:

Total Manufacturing Costs to Account For [calculated above]	$ 197,000
Ending Work-in-Process Inventory	(29,000)
Cost of Goods Manufactured	$ 168,000

TIOGA MANUFACTURING COMPANY
Income Statement
Month Ended June 30, 2014

Sales Revenue		$ **500,000**
Cost of Goods Sold:		
Beginning Finished Goods Inventory	$ 112,000	
Cost of Goods Manufactured	**168,000**	
Cost of Goods Available for Sale	**280,000**	
Ending Finished Goods Inventory	**(63,000)**	
Cost of Goods Sold		217,000
Gross Profit		283,000
Selling and Administrative Expenses:		
Selling Expenses	94,000	
Administrative Expenses	**65,000**	
Total Selling and Administrative Expenses		159,000
Operating Income		$ **124,000**

Missing Amounts:

Sales Revenue:

Cost of Goods Sold	$ 217,000
Gross Profit	283,000
Sales Revenue	$ 500,000

P16-32A, cont.

Cost of Goods Manufactured:
[From the Schedule of Cost of Goods Manufactured]

Cost of Goods Available for Sale:

Beginning Finished Goods Inventory	$ 112,000
Cost of Goods Manufactured	168,000
Cost of Goods Available for Sale	$ 280,000

Ending Finished Goods Inventory:

Cost of Goods Available for Sale [calculated above]	$ 280,000
Cost of Goods Sold	(217,000)
Ending Finished Goods Inventory	$ 63,000

Administrative Expenses:

Total Operating Expenses	$ 159,000
Selling Expenses	(94,000)
Administrative Expenses	$ 65,000

Operating Income:

Gross Profit	$ 283,000
Total Selling and Administrative Expenses	(159,000)
Operating Income	$ 124,000

P16-33A
Requirement 1

Cost of raw materials purchased:

Direct Materials Used	=	Beginning Raw Materials Inventory	+	Cost of Raw Materials Purchased	–	Ending Raw Materials Inventory

Solving for cost of raw materials purchased:

Cost of Raw Materials Purchased	=	Direct Materials Used	+	Ending Raw Materials Inventory	–	Beginning Raw Materials Inventory
	=	$2,100,000	+	$900,000	–	$600,000
	=	$2,400,000				

Requirement 2

Cost of goods manufactured for the year:

Cost of Goods Manufactured	=	Beginning Work-in-Process Inventory	+	Total Manufacturing Costs Incurred	–	Ending Work-in-Process Inventory
	=	$800,000	+	$26,400,000	–	$1,400,000
	=	$25,800,000				

Requirement 3

Cost of goods sold for the year:

Cost of Goods Sold	=	Beginning Finished Goods Inventory	+	Cost of Goods Manufactured	–	Ending Finished Goods Inventory
	=	$700,000	+	$25,800,000 [calculated in 2]	–	$990,000
	=	$25,510,000				

Problems (Group B)

P16-34B

Students' responses will vary. Illustrative answers follow.

Requirement 1

a. If the goods have been received, postponing recording of the purchase understates liabilities. This is unethical and inconsistent with the IMA standards even if the supplier agrees to delay billing.

b. The software has not been sold. Therefore, it would be inconsistent with the IMA standards to record it as sales.

c. Delaying year-end closing incorrectly records next year's sales in this year's sales. This is unethical and inconsistent with the IMA standards.

d. The appropriate allowance for bad debts is a difficult judgment. The decision should not be driven by the desire to meet a profit goal. It should be based on the likelihood that the company will not collect the debts. We cannot determine this without more information. However, since the company emphasizes earnings growth, which can lead to sales to customers with weaker credit records, reducing the allowance seems questionable. It is not clear whether this strategy is inconsistent with the IMA standards.

e. If the maintenance is postponed, there is no transaction to record. This strategy is beyond the responsibility of the controller, so it does not violate IMA standards.

P16-34B, cont.
Requirement 2

Management accountability is management's responsibility to the various stakeholders of the company. Each group of stakeholders has an interest of some sort in the business. Stakeholders include suppliers, employees, customers, vendors, investors, creditors, governments, and communities. Managers are accountable to the stakeholders and have a responsibility to wisely manage the company's resources.

Managers provide information about their decisions and the results of those decisions to the stakeholders. Financial accounting provides financial statements that report results of operations, financial position, and cash flows both to managers and to external stakeholders. Managerial accounting provides the information needed to plan and control operations. Managers are responsible to many stakeholders, so they must plan and control operations carefully. Making decisions that cause the company to decline will affect many different groups, from investors to employees, and may have an economic impact on the entire community.

The inconsistencies noted for Halo Software, Inc. particularly impact the financial statement information provided by financial accounting to external stakeholders.

Requirement 3

The controller should resist attempts to implement a, b, and c and should gather more information about d. If the President ignores Borzi, then Borzi needs to consider if she wants to work for a company that engages in unethical behavior.

P16-35B
Requirement 1

Period costs are operating costs that are expensed in the accounting period in which they are incurred.

Product costs are all costs of a product that GAAP requires companies to treat as an asset for external financial reporting. These costs are recorded as an asset (inventory) on the balance sheet until the asset is sold. The cost is then transferred to an expense account (Cost of Goods Sold) on the income statement. Product costs include direct materials, direct labor, and manufacturing overhead.

On the income statement, Cost of Goods Sold (product cost) is subtracted from Sales Revenue to determine gross profit. The period costs are then subtracted from gross profit to determine operating income.

Requirement 2

Cost:	Period Cost	Product Cost		
		Direct Materials	Direct Labor	Manufacturing Overhead
Handle and shaft of edger		X		
Motor of edger		X		
Factory labor for workers assembling edgers			X	
Lubricant used on bearings in the edger (not traced to the product)				X
Glue to hold housing together				X
Plant janitorial wages				X
Depreciation on factory equipment				X
Rent on plant				X
Sales commissions	X			
Administrative salaries	X			
Plant utilities				X
Shipping costs to deliver finished edgers to customers	X			

P16-36B
Requirement 1

Service companies sell services rather than products. They sell time, skills, and knowledge. Merchandising companies resell products previously bought from suppliers. Manufacturing companies use labor, equipment, supplies, and facilities to convert raw materials into new finished products.

Requirement 2

Company 1 is a merchandising company. Company 2 is a manufacturing company. The company type can be determined by the account names in the ledger.

Requirement 3

Company 1:

Beginning Merchandise Inventory	$ 8,000
Purchases	165,000
Cost of Goods Available for Sale	173,000
Ending Merchandise Inventory	(13,000)
Cost of Goods Sold	$ 160,000

Company 2:

Beginning Finished Goods Inventory	$ 12,250
Cost of Goods Manufactured	172,250
Cost of Goods Available for Sale	184,500
Ending Finished Goods Inventory	(15,000)
Cost of Goods Sold	$ 169,500

P16-37B
Requirement 1

TOTAL GLASS COMPANY
Income Statement
Month Ended July 31, 2014

Revenues:		
Sales Revenue		$ 23,000
Expenses:		
Salaries and Wages Expense	$ 11,000	
Materials Expense	4,800	
Depreciation Expense—Truck	550	
Depreciation Expense—Building and Equipment	1,200	
Supplies Expense	300	
Utilities Expense	2,620	
Total Expenses		20,470
Net Income		$ 2,530

Requirement 2

Per unit cost = Total expenses / Total windshields repaired

= $20,470 / 200 windshields

= $102.35 per windshield

Requirement 3

No. The actual unit cost per windshield of $102.35 is greater than $70.

P16-38B
Requirement 1

CRAIG'S PETS
Income Statement
Year Ended December 31, 2014

Revenues:		
Sales Revenue		$ 58,000
Cost of Goods Sold:		
Beginning Merchandise Inventory	$ 15,400	
Purchases of Merchandise	26,000	
Cost of Goods Available for Sale	41,400	
Ending Merchandise Inventory	(10,100)	
Cost of Goods Sold		31,300
Gross Profit		26,700
Expenses:		
Utilities Expense	3,300	
Rent Expense	4,500	
Sales Commission Expense	2,850	
Total Expenses		10,650
Net Income		$ 16,050

Requirement 2

Unit cost = Cost of goods sold / Total units sold

= $31,300 / 3,900 units

= $8.03 per unit

P16-39B
Requirement 1

ORGANIC BONES
Schedule of Cost of Goods Manufactured
Year Ended December 31, 2014

Beginning Work-in-Process Inventory			$ 0
Direct Materials Used:			
Beginning Raw Materials Inventory	$ 13,200		
Purchases of Raw Materials	31,000		
Raw Materials Available for Use	44,200		
Ending Raw Materials Inventory	(7,000)		
Direct Materials Used		$ 37,200	
Direct Labor		23,000	
Manufacturing Overhead:			
Plant janitorial services	200		
Utilities for plant	1,900		
Rent on plant	11,000		
Total Manufacturing Overhead		13,100	
Total Manufacturing Costs Incurred during the Year			73,300
Total Manufacturing Costs to Account For			73,300
Ending Work-in-Process Inventory			(4,000)
Cost of Goods Manufactured			$ 69,300

P16-39B, cont.
Requirement 2

ORGANIC BONES
Income Statement
Year Ended December 31, 2014

Revenues:		
Sales Revenue		$ 110,000
Cost of Goods Sold:		
Beginning Finished Goods Inventory	$ 0	
Cost of Goods Manufactured*	69,300	
Cost of Goods Available for Sale	69,300	
Ending Finished Goods Inventory	(5,800)	
Cost of Goods Sold		63,500
Gross Profit		46,500
Expenses:		
Sales Salaries Expense	5,400	
Delivery Expense	1,400	
Customer Service Hotline Expense	1,200	
Total Expenses		8,000
Net Income (Loss)		$ 38,500

* From the Schedule of Cost of Goods Manufactured in Requirement 1.

Requirement 3

For a manufacturing company, cost of goods sold on the income statement is based on cost of goods manufactured and the change in Finished Goods Inventory. For a merchandising company, cost of goods sold on the income statement is based on cost of merchandise purchased (including freight in) and the change in Merchandise Inventory.

Requirement 4

Unit product cost = Cost of goods manufactured / Total units produced

= $69,300 / 15,400 units

= $4.50 per unit

P16-40B

PINTA MANUFACTURING COMPANY
Schedule of Cost of Goods Manufactured
Month Ended June 30, 2014

Beginning Work-in-Process Inventory			$ 25,000
Direct Materials Used:			
Beginning Raw Materials Inventory	$ **28,000**		
Purchases of Raw Materials	57,000		
Raw Materials Available for Use	85,000		
Ending Raw Materials Inventory	(22,000)		
Direct Materials Used		$ **63,000**	
Direct Labor		**74,000**	
Manufacturing Overhead		45,000	
Total Manufacturing Costs Incurred During the Month			182,000
Total Manufacturing Costs to Account For			**207,000**
Ending Work-in-Process Inventory			(21,000)
Cost of Goods Manufactured			$ **186,000**

Missing Amounts:

Beginning Raw Materials Inventory:

Raw Materials Available for Use	$ 85,000
Purchases of Raw Materials	(57,000)
Beginning Raw Materials Inventory	$ 28,000

Direct Materials Used:

Raw Materials Available for Use	$ 85,000
Ending Raw Materials Inventory	(22,000)
Direct Materials Used	$ 63,000

Direct Labor:

Total Manufacturing Costs Incurred During the Month	$ 182,000
Manufacturing Overhead	(45,000)
Direct Materials Used [calculated above]	(63,000)
Direct Labor	$ 74,000

P16-40B, cont.

Total Manufacturing Costs to Account For:

Beginning Work-in-Process Inventory	$ 25,000
Total Manufacturing Costs Incurred During the Month	182,000
Total Manufacturing Costs to Account For	$ 207,000

Cost of Goods Manufactured:

Total Manufacturing Costs to Account For [calculated above]	$ 207,000
Ending Work-in-Process Inventory	(21,000)
Cost of Goods Manufactured	$ 186,000

PINTA MANUFACTURING COMPANY
Income Statement
Month Ended June 30, 2014

Sales Revenue		$ **440,000**
Cost of Goods Sold:		
Beginning Finished Goods Inventory	$ 113,000	
Cost of Goods Manufactured	**186,000**	
Cost of Goods Available for Sale	**299,000**	
Ending Finished Goods Inventory	**(68,000)**	
Cost of Goods Sold		231,000
Gross Profit		209,000
Selling and Administrative Expenses:		
Selling Expenses	93,000	
Administrative Expenses	**61,000**	
Total Selling and Administrative Expenses		154,000
Operating Income		$ **55,000**

Missing Amounts:

Sales Revenue:

Cost of Goods Sold	$ 231,000
Gross Profit	209,000
Sales Revenue	$ 440,000

P16-40B, cont.

Cost of Goods Manufactured:
[From the Schedule of Cost of Goods Manufactured]

Cost of Goods Available for Sale:

Beginning Finished Goods Inventory	$ 113,000
Cost of Goods Manufactured	186,000
Cost of Goods Available for Sale	$ 299,000

Ending Finished Goods Inventory:

Cost of Goods Available for Sale [calculated above]	$ 299,000
Cost of Goods Sold	(231,000)
Ending Finished Goods Inventory	$ 68,000

Administrative Expenses:

Total Operating Expenses	$ 154,000
Selling Expenses	(93,000)
Administrative Expenses	$ 61,000

Operating Income:

Gross Profit	$ 209,000
Total Selling and Administrative Expenses	(154,000)
Operating Income	$ 55,000

P16-41B
Requirement 1

Cost of raw materials purchased during the year:

Direct Materials Used	=	Beginning Raw Materials Inventory	+	Cost of Raw Materials Purchased	–	Ending Raw Materials Inventory

Solving for cost of raw materials purchased:

Cost of Raw Materials Purchased	=	Direct Materials Used	+	Ending Raw Materials Inventory	–	Beginning Raw Materials Inventory
	=	$2,800,000	+	$800,000	–	$900,000
	=	$2,700,000				

Requirement 2

Cost of goods manufactured for the year:

Cost of Goods Manufactured	=	Beginning Work-in-Process Inventory	+	Total Manufacturing Costs Incurred	–	Ending Work-in-Process Inventory
	=	$1,500,000	+	$22,900,000	–	$1,500,000
	=	$22,900,000				

Requirement 3

Cost of goods sold for the year:

Cost of Goods Sold	=	Beginning Finished Goods Inventory	+	Cost of Goods Manufactured	–	Ending Finished Goods Inventory
	=	$900,000	+	$22,900,000 [calculated in 2]	–	$810,000
	=	$22,990,000				

Continuing Problem

P16-42

DAVIS CONSULTING, INC.
Schedule of Cost of Goods Manufactured
Month Ended January 31, 2016

Beginning Work-in-Process Inventory			$ 0
Direct Materials Used:			
Beginning Raw Materials Inventory	$ 10,800		
Purchases of Raw Materials	19,000		
Raw Materials Available for Use	29,800		
Ending Raw Materials Inventory	(10,300)		
Direct Materials Used		$ 19,500	
Direct Labor		190,000	
Manufacturing Overhead:			
Plant janitorial services	700		
Utilities for plant	10,000		
Rent on plant	13,000		
Total Manufacturing Overhead		23,700	
Total Manufacturing Costs Incurred during the Year			233,200
Total Manufacturing Costs to Account For			233,200
Ending Work-in-Process Inventory			(21,000)
Cost of Goods Manufactured			$ 212,200

Critical Thinking

Decision Case 16-1
Requirement 1

Shown in the schedule, below, the ending inventories are: Raw Materials Inventory, $143,000; Work-in-Process Inventory, $239,000; and Finished Goods Inventory, $150,000.

POWERSWITCH, INC. Flow of Costs Schedule					
Raw Materials Inventory		**Work-in-Process Inventory**		**Finished Goods Inventory**	
Beginning Inventory	$ 113,000 *	Beginning Inventory	$ 229,000 *	Beginning Inventory	$ 154,000 *
+ Purchases	476,000 *	+ Direct Materials Used	446,000 [e]	+ Cost of Goods Manufactured	1,186,000 [c]
		+ Direct Labor	505,000 *		
		+ Manufacturing Overhead	245,000 *		
= Raw Materials Available for Use	589,000	= Total Manufacturing Costs to Account For	1,425,000 *	= Cost of Goods Available for Sale	1,340,000 *
− 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]

* Denotes amounts given in the case.

Calculations for amounts denoted with a superscript letters are provided below.

Decision Case 16-1, cont.

Calculations:

[a] Cost of Goods Sold:

Sales	×	(1 – Gross Profit %)	=	Cost of Goods Sold
$1,700,000	×	(1 – 30%)	=	$1,190,000
$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
Therefore:		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
Therefore:		Cost of Goods Manufactured	=	$1,186,000

[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
Therefore:		Ending Work-in-Process Inventory	=	$ 239,000

Decision Case 16-1, cont.

[e] Direct Materials Used:

Beginning Work-in-Process Inventory	+	Direct Materials Used	+	Direct Labor	+	Manufacturing Overhead	=	Total Manufacturing Costs to Account For
$229,000	+	Direct Materials Used	+	$505,000	+	$245,000	=	$1,425,000
Therefore:		Direct Materials Used					=	$ 446,000

[f] Ending Raw Materials Inventory:

Raw Materials Available for Use	–	Ending Raw Materials Inventory	=	Direct Materials Used
$589,000	–	Ending Raw Materials Inventory	=	$446,000
Therefore:		Ending Raw Materials Inventory	=	$143,000

Requirement 2

Inventory lost in the flood:

Raw Materials Inventory	$143,000
Work-in-Process Inventory	239,000
Finished Goods Inventory	150,000
Total Inventory	$532,000

Decision Case 16-2

Students' responses will vary. Illustrative answers follow.

- *Competence*. Students have a responsibility to build their professional competence by attending classes, conscientiously completing homework, and studying for exams.

- *Confidentiality*. When friends or family share intimate information, or highly personal information, you should respect the trust they have placed in you, and keep that information confidential, as is appropriate under the situation.

- *Integrity*. Students have a responsibility to act with integrity and not to cheat. Students also should help ensure the integrity of the process. For example, students should inform the instructor if they suspect other students have a copy of an upcoming exam.

- *Credibility*. Be honest and straightforward when communicating with others. Do not lie or deliberately mislead others.

Ethical Issue 16-1

Students' responses will vary. Illustrative answers follow.

a. The ethical issue facing Becky is deciding what to do about the gifts to the sales managers. Although small "courtesy" gifts are accepted practice in the world of sales, the regular basis and the high value of these items (especially jewelry) suggest that the owner is bribing the sales managers and other sales executives to receive a large allocation of cars.

b. The options include:
   (1) Do nothing,
   (2) Discuss the matter with the owner,
   (3) Resign if the owner will not stop the practice, or
   (4) Inform the manufacturer.

c. The possible consequences include:
   (1) If Becky does nothing, her job and those of the other employees may remain secure for the time being. However, as controller she could be held accountable for laundering a bribe if the scheme became public. A lawsuit brought by other dealers who did not receive a fair share of available cars could name her as an involved party. If Becky is a CPA, she could also lose her CPA license.
   (2) If Becky discusses the matter with the owner, she might find out that there is another side to the story and in fact there is no wrongdoing or ethical dilemma. However, this seems unlikely given the facts. It also seems unlikely that the owner will end this practice since it enhances the dealership's profits. However, Becky may have some influence on Mueller if she explains the dangers of continuing the bribes. Mueller could be sued by other dealers, or the manufacturer could cancel his dealership. Such outcomes would affect all the dealership's employees, not just Mueller. If Mueller refuses to change his ways, then Becky is in an even more difficult position because she now has direct knowledge of the bribery.
   (3) By resigning, Becky loses her job but protects her integrity and avoids being involved in a subsequent action against the dealership if the bribery becomes known.
   (4) Perhaps an even more difficult question is whether Becky should inform the manufacturer about the bribery. If Becky has not already resigned, Mueller probably would fire her for taking this action.

d. Accountants should never become party to, or appear to be involved in, an unethical (and possibly illegal) situation such as this. This is especially true for persons with fiduciary responsibilities like a controller. Becky should discuss her concerns with the owner. If Mueller is indeed bribing the sales representatives and refuses to stop this practice, Becky should inform the manufacturer, or she should resign.

Fraud Case 16-1

Students' responses will vary. Illustrative answers follow:

Requirement 1

This case reflects a clear conflict of interest in that Juan Gomez, as a public accountant, was supposed to be independent of his client, but was in fact, financially involved. This is a clear violation of *integrity*. It also involves the issue of *credibility*, in that Juan "cooked the books" for his client, and thus sanctioned the publication of false financial information.

Requirement 2

Juan would first have to pay back the loan he took from his client. Then he would have to remove himself from the engagement with this client, admit his actions, and possibly resign from his firm, because the falsified financial information would become apparent to whomever followed Juan on the engagement. These actions might, or might not, shield Juan from criminal or civil prosecution. The bottom line is that once Juan took the money, his career was in irreversible jeopardy.

Team Project 16-1

Students' responses will vary. However, following are some observations.

The person interviewed could be identified through a connection of one of the students, a connection made by the instructor, or a connection through the school.

Requiring students to answer the first 4 questions before the interview will help ensure that they are prepared for the interview. It is important that students be prepared so they can make a favorable impression on the interviewee (for the school and future employment!) and so they do not waste the interviewee's time. If the company is of any reasonable size, students should be able to gather information from the library or the Internet.

While it would be unusual for a company not to have a website, its role in the company's business plan can vary significantly. The site may simply provide information about the company and/or its products and, for a manufacturer, a dealer locator. Other websites are designed to sell products. Certain web pages may be designed for sales to the general public, while other parts of the site may require a password and offer sales to specific customers on pre-arranged terms. The website might not give a full indication of the extent to which a company relies on the Internet. For example, a company may rely on the Internet for purchasing, budgeting, or communicating within the firm.

Increasing dependence on the Internet has implications for management accounting. A full-featured website may cost millions of dollars, so the CFO will likely be involved in the investment decision and in monitoring and evaluating the success of this investment. Management accountants will collect and analyze new types of data, such as the number of unique customers at the company's website and the length of time each customer spends at the site.

Accounting applications also may follow the underlying transactions to the web. For example, when a company moves business-to-business sales to the web, it also may adopt internet-based receivables management software to reduce billing costs and speed collection. The company also may install an ERP system to further integrate and speed its transaction processing.

Communication Activity 16-1

Period costs are operating costs that are expensed in the same accounting period in which they are incurred, whereas product costs are recorded as an asset and not expensed until the accounting period in which the product is sold. Period costs are all costs not considered product costs.

Manufacturing companies track costs on three kinds of inventory. Raw Materials Inventory includes materials used to manufacture a product. Work-in-Process Inventory includes goods that have been started in the manufacturing process but are not yet complete. Finished Goods Inventory includes completed goods that have not yet been sold.