Chapter 18
Introduction to Managerial Accounting

Review Questions

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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 re-strictions, (5) scope of information, and (6) behavioral.

4. Management accountability is the manager's responsibility to the various stakeholders of the com-pany. 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, re-paying creditors, providing a safe work environment, and providing products that are safe and de-fect-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 fin-ished 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. In addition, a manufacturing company must track costs from Raw Materials Inventory and Work-in-Process Inventory in order to compute Cost of Goods Manufactured used in the previous equation.

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 manufac-turing 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 employ-ees who convert materials into finished products. Manufacturing overhead includes all manufactur-ing costs except direct materials and direct labor, such as indirect materials, indirect labor, factory depreciation, factory rent, and factory property taxes.

15. Examples of manufacturing overhead include costs of indirect materials, indirect labor, repair and maintenance in factory, factory utilities, factory rent, factory insurance, factory 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 num-ber of units produced.

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

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

Short Exercises

S18-1

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

S18-2

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

S18-3

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

S18-4

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

S18-5

Beginning merchandise inventory		$ 8,200
Purchases	$ 40,000	
Freight in	2,700	42,700
Cost of goods available for sale		50,900
Ending merchandise inventory		(5,100)
Cost of goods sold		$ 45,800

S18-6

	Solutions:	Calculations:
(a)	$15,100	$65,100 [b, below] - $50,000
(b)	$65,100	$63,000 + $2,100
(c)	$23,000	$36,000 – $13,000
(d)	$204,900	$115,000 + $89,900 [f, below]
(e)	$63,000	$92,000 – $29,000
(f)	$89,900	$92,000 – $2,100
(g)	$29,000	$115,000 – $86,000

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

S18-7

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

S18-8

Glue for frames	$ 200
Plant depreciation	6,000
Plant foreman's salary	3,000
Plant janitor's wages	1,100
Oil for manufacturing equipment	150
Total manufacturing overhead	$ 10,450

S18-9

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

S18-10

Beginning Raw Materials Inventory		$ 3,700
Purchases of Raw Materials	$ 6,600	
Freight In	500	7,100
Raw Materials Available for Use		10,800
Ending Raw Materials Inventory		(1,300)
Direct Materials Used		$ 9,500

S18-11

Beginning Work-in-Process Inventory		$ 7,000
Direct Materials Used	$ 12,000	
Direct Labor	13,000	
Manufacturing Overhead	22,000	
Total Manufacturing Costs Incurred during the Year		47,000
Total Manufacturing Costs to Account For		54,000
Ending Work-in-Process Inventory		(5,000)
Cost of Goods Manufactured		$ 49,000

S18-12

Beginning Finished Goods Inventory	$ 32,000
Cost of Goods Manufactured	160,000
Cost of Goods Available for Sale	192,000
Ending Finished Goods Inventory	(17,000)
Cost of Goods Sold	$ 175,000

S18-13

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

= [$375 + $1,321 + $150 + $50] / 240 haircuts

= $1,896 / 240 haircuts

= $7.90 per haircut

Exercises

E18-14

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

E18-15

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

E18-16

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, and Sue Peters should consider beginning the process to terminate the employee. Any company policies with respect to discipline and termination should be followed.

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 Dale and subsequent bookkeepers more carefully.

Requirement 2
Being a new employee, Sue Peters may want to discuss the situation with the her immediate supervisor or the company's preside if appropriate. 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.

E18-17

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

E18-18

Company A (all amounts in millions):

Sales Revenue		$ 28
Cost of Goods Sold		21
Gross Profit		7
Operating Expenses:		
Selling Expenses	$ 2	
Administrative Expenses	1	
Total Operating Expenses		3
Operating Income		$ 4

Company B (all amounts in millions):

Service Revenue		$ 54
Expenses:		
Wages Expense	$ 16	
Rent Expense	9	
Total Expenses		25
Operating Income		$ 29

Company C (all amounts in millions):

Sales Revenue		$ 28
Cost of Goods Sold		16
Gross Profit		12
Operating Expenses:		
Selling Expenses	$ 2	
Administrative Expenses	5	
Total Operating Expenses		7
Operating Income		$ 5

E18-19

Company A (all amounts in millions):

Cash	$ 5
Accounts Receivable	6
Raw Materials Inventory	10
Work-in-Process Inventory	1
Finished Goods Inventory	1
Total current assets	$ 23

Company B (all amounts in millions):

Cash	$ 14
Accounts Receivable	6
Total current assets	$ 20

Company C (all amounts in millions):

Cash	$ 27
Accounts Receivable	16
Merchandise Inventory	8
Total current assets	$ 51

E18-20

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**	

E18-21

(a)

Total Manufacturing Costs to Account For	$ 55,300
Total Manufacturing Costs Incurred during the Year	(45,100)
Beginning Work-in-Process Inventory	$ 10,200

(b)

Total Manufacturing Costs Incurred during the Year	$ 45,100
Direct Materials Used	(14,800)
Direct Labor	(10,100)
Manufacturing Overhead	$ 20,200

(c)

Total Manufacturing Costs to Account For	$ 55,300
Cost of Goods Manufactured	(50,800)
Ending Work-in-Process Inventory	$ 4,500

(d)

Direct Materials Used	$ 35,400
Direct Labor	20,000
Manufacturing Overhead	10,300
Total Manufacturing Costs Incurred during the Year	$ 65,700

(e)

Beginning Work-in-Process Inventory	$ 40,200
Total Manufacturing Costs Incurred during the Year [d, above]	65,700
Total Manufacturing Costs to Account For	$ 105,900

(f)

Total Manufacturing Costs to Account For [e, above]	$ 105,900
Ending Work-in-Process Inventory	(25,800)
Cost of Goods Manufactured	$ 80,100

E18-21, cont.

(g)

Total Manufacturing Costs Incurred during the Year [h, below]	$ 5,600
Direct Labor	(1,800)
Manufacturing Overhead	(600)
Direct Materials Used	$ 3,200

(h)

Total Manufacturing Costs to Account For	$ 8,200
Beginning Work-in-Process Inventory	(2,600)
Total Manufacturing Costs Incurred During the Year	$ 5,600

(i)

Total Manufacturing Costs to Account For	$ 8,200
Ending Work-in-Process Inventory	(2,000)
Cost of Goods Manufactured	$ 6,200

E18-22
Requirement 1

CLARKSON CORP. Schedule of Cost of Goods Manufactured Year Ended December 31, 2016			
Beginning Work-in-Process Inventory			$ 100,000
Direct Materials Used:			
Beginning Raw Materials Inventory	$ 58,000		
Purchases of Raw Materials	157,000		
Raw Materials Available for Use	215,000		
Ending Raw Materials Inventory	(22,000)		
Direct Materials Used		$ 193,000	
Direct Labor		129,000	
Manufacturing Overhead:			
Depreciation, plant building and equipment	13,000		
Insurance on plant	21,000		
Repairs and maintenance—plant	4,000		
Indirect labor	30,000		
Total Manufacturing Overhead		68,000	
Total Manufacturing Costs Incurred During the Year			390,000
Total Manufacturing Costs to Account For			490,000
Ending Work-in-Process Inventory			(63,000)
Cost of Goods Manufactured			$ 427,000

Requirement 2

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

= $427,000 / 2,135 lamps

= $200 per lamp

E18-23

Beginning Work-in-Process Inventory			$ 38,000
Direct Materials Used:			
Beginning Raw Materials Inventory	$ 20,000		
Purchases of Raw Materials	75,000		
Raw Materials Available for Use	95,000		
Ending Raw Materials Inventory	(26,000)		
Direct Materials Used		$ 69,000	
Direct Labor		89,000	
Manufacturing Overhead		42,000	
Total Manufacturing Costs Incurred During the Year			200,000
Total Manufacturing Costs to Account For			238,000
Ending Work-in-Process Inventory			(34,000)
Cost of Goods Manufactured			$ 204,000

Beginning Finished Goods Inventory	$ 14,000	
Cost of Goods Manufactured	204,000	[above]
Cost of Goods Available for Sale	218,000	
Ending Finished Goods Inventory	(22,000)	
Cost of Goods Sold	$ 196,000	

E18-24
Requirement 1

Grooming Revenue		$ 16,000
Expenses:		
Wages Expense	$ 3,900	
Grooming Supplies Expense	1,730	
Building Rent Expense	1,000	
Utilities Expense	285	
Depreciation Expense—Equipment	105	
Total Expenses		7,020
Net Income		$ 8,980

Requirement 2

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

= $7,020 / 600 dogs

= $11.70 per dog

E18-25
Requirement 1

Sales Revenue		$ 97,200
Cost of Goods Sold:		
Beginning Merchandise Inventory	$ 8,100	
Purchases	65,880	
Cost of Goods Available for Sale	73,980	
Ending Merchandise Inventory	(23,436)	
Cost of Goods Sold		50,544
Gross Profit		46,656
Selling and Administrative Expenses		34,020
Operating Income		$ 12,636

Requirement 2

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

= $50,544 / 5,400 brushes

= $9.36 per brush

Problems (Group A)

P18-26A

Students' responses will vary. Illustrative answers follow.

Requirement 1

a. If the goods have been received, postponing recording of the purchases understates liabilities. This is unethical and inconsistent with the IMA standards even if the suppliers agree 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.

P18-26A, 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. They will be led to believe the operating performance (profitability) of the company is better than it really is. This misrepresentation may result in the investors holding the stock when they may have sold it with the correct information. Simi- larly, creditors may grant credit to the company with the false income information when they may not grant credit with the correct income information.

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. Accountants should not be associated with any unethical behavior, and Wallace should resign.

P18-27A
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 deter-mine gross profit. The period costs are then subtracted to determine operating income.

Requirement 2

	Period	Product Cost		
Cost:	**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**			

P18-28A
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	$ 10,400
Purchases (net)	158,000
Cost of Goods Available for Sale	168,400
Ending Merchandise Inventory	(12,900)
Cost of Goods Sold	$ 155,500

Company B:

Beginning Finished Goods Inventory	$ 16,200
Cost of Goods Manufactured	214,500
Cost of Goods Available for Sale	230,700
Ending Finished Goods Inventory	(12,100)
Cost of Goods Sold	$ 218,600

P18-29A
Requirement 1

SANDMAN
Income Statement
Month Ended February 29, 2016

Revenues:		
Sales Revenue		$ 27,000
Expenses:		
Salaries and Wages Expense	$ 6,000	
Materials Expense	4,500	
Depreciation Expense—Truck	250	
Depreciation Expense—Building and Equipment	600	
Supplies Expense	500	
Utilities Expense	2,180	
Total Expenses		14,030
Net Income		$ 12,970

Requirement 2

Unit cost = Total expenses / Total windshields repaired

= $14,030 / 200 windshields

= $70.15 per windshield

Requirement 3

No. The actual unit cost per windshield of $70.15 is more than $60.

P18-30A
Requirement 1

CAM'S PETS Income Statement Year Ended December 31, 2016		
Revenues:		
Sales Revenue		$ 58,000
Cost of Goods Sold:		
Beginning Merchandise Inventory	$ 15,100	
Purchases of Merchandise	29,000	
Cost of Goods Available for Sale	44,100	
Ending Merchandise Inventory	(10,400)	
Cost of Goods Sold		33,700
Gross Profit		24,300
Selling and Administrative Expenses:		
Utilities Expense	3,700	
Rent Expense	4,900	
Sales Commission Expense	2,950	
Total Selling and Administrative Expenses		11,550
Net Income		$ 12,750

Requirement 2

Unit cost = Cost of goods sold / Total units sold

= $33,700 / 5,450 units

= $6.18 per unit (rounded to nearest cent)

P18-31A
Requirement 1

YUM YUM TREATS Schedule of Cost of Goods Manufactured Year Ended December 31, 2016			
Beginning Work-in-Process Inventory			$ 0
Direct Materials Used:			
Beginning Raw Materials Inventory	$ 13,100		
Purchases of Raw Materials	30,000		
Raw Materials Available for Use	43,100		
Ending Raw Materials Inventory	(8,500)		
Direct Materials Used		$ 34,600	
Direct Labor		18,000	
Manufacturing Overhead:			
Plant janitorial services	800		
Utilities for plant	1,100		
Rent on plant	16,000		
Total Manufacturing Overhead		17,900	
Total Manufacturing Costs Incurred during the Year			70,500
Total Manufacturing Costs to Account For			70,500
Ending Work-in-Process Inventory			(2,500)
Cost of Goods Manufactured			$ 68,000

P18-31A, cont.
Requirement 2

YUM YUM TREATS Income Statement Year Ended December 31, 2016		
Revenues:		
Sales Revenue		$ 105,000
Cost of Goods Sold:		
Beginning Finished Goods Inventory	$ 0	
Cost of Goods Manufactured*	68,000	
Cost of Goods Available for Sale	68,000	
Ending Finished Goods Inventory	(5,700)	
Cost of Goods Sold		62,300
Gross Profit		42,700
Selling and Administrative Expenses:		
Sales Salaries Expense	5,000	
Delivery Expense	1,800	
Customer Service Hotline Expense	1,000	
Total Selling and Administrative Expenses		7,800
Net Income (Loss)		$ 34,900

* 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
	=	$68,000 / 17,600 units
	=	$3.86 per unit (rounded to nearest cent)

P18-32A

CHILI MANUFACTURING COMPANY Schedule of Cost of Goods Manufactured Month Ended June 30, 2016			
Beginning Work-in-Process Inventory			$ 21,000
Direct Materials Used:			
Beginning Raw Materials Inventory	$ **26,000**		
Purchases of Raw Materials	58,000		
Raw Materials Available for Use	84,000		
Ending Raw Materials Inventory	(24,000)		
Direct Materials Used		**60,000**	
Direct Labor		**71,000**	
Manufacturing Overhead		40,000	
Total Manufacturing Costs Incurred During the Month			171,000
Total Manufacturing Costs to Account For			**192,000**
Ending Work-in-Process Inventory			(23,000)
Cost of Goods Manufactured			$ **169,000**

Missing Amounts:

Beginning Raw Materials Inventory:

Raw Materials Available for Use	$ 84,000
Purchases of Raw Materials	(58,000)
Beginning Raw Materials Inventory	$ 26,000

Direct Materials Used:

Raw Materials Available for Use	$ 84,000
Ending Raw Materials Inventory	(24,000)
Direct Materials Used	$ 60,000

Direct Labor:

Total Manufacturing Costs Incurred During the Month	$ 171,000
Manufacturing Overhead	(40,000)
Direct Materials Used [calculated above]	(60,000)
Direct Labor	$ 71,000

P18-32A, cont.

Total Manufacturing Costs to Account For:

Beginning Work-in-Process Inventory	$ 21,000
Total Manufacturing Costs Incurred During the Month	171,000
Total Manufacturing Costs to Account For	$ 192,000

Cost of Goods Manufactured:

Total Manufacturing Costs to Account For [calculated above]	$ 192,000
Ending Work-in-Process Inventory	(23,000)
Cost of Goods Manufactured	$ 169,000

CHILI MANUFACTURING COMPANY
Income Statement
Month Ended June 30, 2016

Sales Revenue		$ **510,000**
Cost of Goods Sold:		
Beginning Finished Goods Inventory	$ 112,000	
Cost of Goods Manufactured	**169,000**	
Cost of Goods Available for Sale	**281,000**	
Ending Finished Goods Inventory	**(69,000)**	
Cost of Goods Sold		212,000
Gross Profit		298,000
Selling and Administrative Expenses:		
Selling Expenses	95,000	
Administrative Expenses	**61,000**	
Total Selling and Administrative Expenses		156,000
Operating Income		$ **142,000**

Missing Amounts:

Sales Revenue:

Cost of Goods Sold	$ 212,000
Gross Profit	298,000
Sales Revenue	$ 510,000

P18-32A, 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	169,000
Cost of Goods Available for Sale	$ 281,000

Ending Finished Goods Inventory:

Cost of Goods Available for Sale [calculated above]	$ 281,000
Cost of Goods Sold	(212,000)
Ending Finished Goods Inventory	$ 69,000

Administrative Expenses:

Total Selling and Administrative Expenses	$ 156,000
Selling Expenses	(95,000)
Administrative Expenses	$ 61,000

Operating Income:

Gross Profit	$ 298,000
Total Selling and Administrative Expenses	(156,000)
Operating Income	$ 142,000

P18-33A
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
	=	$2,700,000	+	$700,000	–	$500,000
	=	$2,900,000				

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	+	$19,600,000	–	$1,600,000
	=	$18,800,000				

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
	=	$500,000	+	$18,800,000 [calculated in 2]	–	$620,000
	=	$18,680,000				

Problems (Group B)

P18-34B

Students' responses will vary. Illustrative answers follow.

Requirement 1

a. If the goods have been received, postponing recording of the purchases understates liabilities. This is unethical and inconsistent with the IMA standards even if the suppliers agree 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.

P18-34B, 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. They will be led to believe the operating per-formance(profitability) of the company is better than it really is. This misrepresentation may result in the investors holding the stock when they may have sold it with the correct information. Similarly, cred-itors may grant credit to the company with the false income information when they may not grant credit with the correct income information.

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. Borzi should not be associated with unethical behavior and should resign.

P18-35B
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

		Product Cost		
Cost:	**Period 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**			

P18-36B
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	$ 10,800
Purchases (net)	153,500
Cost of Goods Available for Sale	164,300
Ending Merchandise Inventory	(12,300)
Cost of Goods Sold	$ 152,000

Company 2:

Beginning Finished Goods Inventory	$ 15,800
Cost of Goods Manufactured	212,000
Cost of Goods Available for Sale	227,800
Ending Finished Goods Inventory	(11,300)
Cost of Goods Sold	$ 216,500

P18-37B
Requirement 1

THE WINDSHIELD DOCTORS Income Statement Month Ended July 31, 2016		
Revenues:		
Sales Revenue		$ 26,000
Expenses:		
Salaries and Wages Expense	$ 7,000	
Materials Expense	4,200	
Depreciation Expense—Truck	450	
Depreciation Expense—Building and Equipment	1,200	
Supplies Expense	300	
Utilities Expense	3,490	
Total Expenses		16,640
Net Income		$ 9,360

Requirement 2

Unit cost = Total expenses / Total windshields repaired

= $16,640 / 100 windshields

= $166.40 per windshield

Requirement 3

No. The actual unit cost per windshield of $166.40 is greater than $150.

P18-38B
Requirement 1

CLYDE'S PETS Income Statement Year Ended December 31, 2016		
Revenues:		
Sales Revenue		$ 58,000
Cost of Goods Sold:		
Beginning Merchandise Inventory	$ 15,400	
Purchases of Merchandise	29,000	
Cost of Goods Available for Sale	44,400	
Ending Merchandise Inventory	(10,250)	
Cost of Goods Sold		34,150
Gross Profit		23,850
Selling and Administrative Expenses:		
Utilities Expense	3,100	
Rent Expense	4,700	
Sales Commission Expense	2,750	
Total Selling and Administrative Expenses		10,550
Net Income		$ 13,300

Requirement 2

Unit cost = Cost of goods sold / Total units sold

= $34,150 / 3,200 units

= $10.67 per unit (rounded to the nearest cent)

P18-39B
Requirement 1

ORGANIC BONES Schedule of Cost of Goods Manufactured Year Ended December 31, 2016			
Beginning Work-in-Process Inventory			$ 0
Direct Materials Used:			
Beginning Raw Materials Inventory	$ 13,100		
Purchases of Raw Materials	30,000		
Raw Materials Available for Use	43,100		
Ending Raw Materials Inventory	(9,000)		
Direct Materials Used		$ 34,100	
Direct Labor		21,000	
Manufacturing Overhead:			
Plant janitorial services	400		
Utilities for plant	1,700		
Rent on plant	15,000		
Total Manufacturing Overhead		17,100	
Total Manufacturing Costs Incurred during the Year			72,200
Total Manufacturing Costs to Account For			72,200
Ending Work-in-Process Inventory			(3,500)
Cost of Goods Manufactured			$ 68,700

P18-39B, cont.
Requirement 2

ORGANIC BONES		
Income Statement		
Year Ended December 31, 2016		
Revenues:		
Sales Revenue		$ 114,000
Cost of Goods Sold:		
Beginning Finished Goods Inventory	$ 0	
Cost of Goods Manufactured*	68,700	
Cost of Goods Available for Sale	68,700	
Ending Finished Goods Inventory	(5,800)	
Cost of Goods Sold		62,900
Gross Profit		51,100
Selling and Administrative Expenses:		
Sales Salaries Expense	5,200	
Delivery Expense	1,900	
Customer Service Hotline Expense	1,000	
Total Selling and Administrative Expenses		8,100
Net Income (Loss)		$ 43,000

* 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 cost	=	Cost of goods manufactured / Total units produced
	=	$68,700 / 17,400 units
	=	$3.95 per unit (rounded to the nearest cent)

P18-40B

MARIA MANUFACTURING COMPANY
Schedule of Cost of Goods Manufactured
Month Ended June 30, 2016

Beginning Work-in-Process Inventory			$ 29,000
Direct Materials Used:			
Beginning Raw Materials Inventory	$ **25,000**		
Purchases of Raw Materials	56,000		
Raw Materials Available for Use	81,000		
Ending Raw Materials Inventory	(21,000)		
Direct Materials Used		$ **60,000**	
Direct Labor		**75,000**	
Manufacturing Overhead		49,000	
Total Manufacturing Costs Incurred During the Month			184,000
Total Manufacturing Costs to Account For			**213,000**
Ending Work-in-Process Inventory			(22,000)
Cost of Goods Manufactured			$ **191,000**

Missing Amounts:

Beginning Raw Materials Inventory:

Raw Materials Available for Use	$ 81,000
Purchases of Raw Materials	(56,000)
Beginning Raw Materials Inventory	$ 25,000

Direct Materials Used:

Raw Materials Available for Use	$ 81,000
Ending Raw Materials Inventory	(21,000)
Direct Materials Used	$ 60,000

Direct Labor:

Total Manufacturing Costs Incurred During the Month	$ 184,000
Manufacturing Overhead	(49,000)
Direct Materials Used [calculated above]	(60,000)
Direct Labor	$ 75,000

P18-40B, cont.

Total Manufacturing Costs to Account For:

Beginning Work-in-Process Inventory	$ 29,000
Total Manufacturing Costs Incurred During the Month	184,000
Total Manufacturing Costs to Account For	$ 213,000

Cost of Goods Manufactured:

Total Manufacturing Costs to Account For [calculated above]	$ 213,000
Ending Work-in-Process Inventory	(22,000)
Cost of Goods Manufactured	$ 191,000

MARIA MANUFACTURING COMPANY
Income Statement
Month Ended June 30, 2016

Sales Revenue		$ **470,000**
Cost of Goods Sold:		
Beginning Finished Goods Inventory	$ 116,000	
Cost of Goods Manufactured	**191,000**	
Cost of Goods Available for Sale	**307,000**	
Ending Finished Goods Inventory	**(66,000)**	
Cost of Goods Sold		241,000
Gross Profit		229,000
Selling and Administrative Expenses:		
Selling Expenses	98,000	
Administrative Expenses	**67,000**	
Total Selling and Administrative Expenses		165,000
Operating Income		$ **64,000**

Missing Amounts:

Sales Revenue:

Cost of Goods Sold	$ 241,000
Gross Profit	229,000
Sales Revenue	$ 470,000

P18-40B, cont.

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

Cost of Goods Available for Sale:

Beginning Finished Goods Inventory	$ 116,000
Cost of Goods Manufactured	191,000
Cost of Goods Available for Sale	$ 307,000

Ending Finished Goods Inventory:

Cost of Goods Available for Sale [calculated above]	$ 307,000
Cost of Goods Sold	(241,000)
Ending Finished Goods Inventory	$ 66,000

Administrative Expenses:

Total Selling and Administrative Expenses	$ 165,000
Selling Expenses	(98,000)
Administrative Expenses	$ 67,000

Operating Income:

Gross Profit	$ 229,000
Total Selling and Administrative Expenses	(165,000)
Operating Income	$ 64,000

P18-41B
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
	=	$2,200,000	+	$900,000	–	$700,000
	=	$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
	=	$900,000	+	$24,300,000	–	$1,700,000
	=	$23,500,000				

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	+	$23,500,000 [calculated in 2]	–	$730,000
	=	$23,670,000				

P18-42

DANIELS CONSULTING, INC. Schedule of Cost of Goods Manufactured Month Ended January 31, 2018			
Beginning Work-in-Process Inventory			$ 0
Direct Materials Used:			
Beginning Raw Materials Inventory	$ 10,800		
Purchases of Raw Materials	18,000		
Raw Materials Available for Use	28,800		
Ending Raw Materials Inventory	(9,600)		
Direct Materials Used		$ 19,200	
Direct Labor		200,000	
Manufacturing Overhead:			
Plant janitorial services	200		
Utilities for plant	11,000		
Rent on plant	12,000		
Total Manufacturing Overhead		23,200	
Total Manufacturing Costs Incurred during the Month			242,400
Total Manufacturing Costs to Account For			242,400
Ending Work-in-Process Inventory			(23,000)
Cost of Goods Manufactured			$ 219,400

Critical Thinking

Decision Case 18-1
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
For the 1st Quarter

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 18-1, cont.

<u>Calculations:</u>

[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 18-1, 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

Ethical Issue 18-1

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.

      There are also potential tax consequences to consider. Since the jewelry expenditures are being recorded as selling expenses, it is likely that this amount is being deducted on the company's tax return. The IRS limits deductions of gifts to $25 per person per year. Since a Rolex watch far exceeds the cost of $25, Becky's failure to disclose the true nature of the expense may make her liable for underreporting the company's tax liability.

   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.

Ethical Issue 18-1, cont.

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 tak-ing 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.

Communication Activity 18-1

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.