Chapter 1

Managerial Accounting Concepts and Principles

QUESTIONS

1. **The managerial accountant plays an important role in preparing the information necessary for effective planning and control decisions. One example is the budget, which is a quantitative expression of a company's long-run and short-run plans. The budget is used to compare actual results to planned performance. With this type of information provided by the managerial accountant, management strives to continuously improve a business.**

2.

	Financial Accounting	Managerial Accounting
(a) Users and decision makers	Investors, creditors, and other users external to the organization	Managers, employees, and decision makers internal to the organization
(b) Purpose of information	Assist external users in making investment, credit, and other decisions	Assist managers in making planning and control decisions
(c) Flexibility of practice	Structured and often controlled by GAAP	Relatively flexible (no GAAP)
(d) Time dimension	Historical information with minimum predictions	Many projections and estimates; historical information also presented
(e) Focus of information	Emphasis on whole organization	Emphasis on projects, processes, and subdivision of an organization
(f) Nature of information	Monetary information	Mostly monetary; but also nonmonetary information

3. **A customer orientation has led companies to adopt the principles of the lean business model in response to consumer demands. The essence of customer orientation is that all managers and employees should be sensitive to the wants and needs of customers, attempting to develop flexible product designs and production processes that are responsive to changes in customer demands along with minimization of defects. They are increasingly adopting management practices such as total quality management (TQM), just-in-time (JIT) manufacturing, and continuous improvement (CI).**

4. **Direct materials are raw materials that physically become part of the product and can be clearly traced to specific units or batches of product. Indirect materials are used in the production process but either do not become a part of the product or are not easily traceable to units or batches of product. Some materials are identified as indirect because they are of insignificant value or it is not cost beneficial to trace them to finished products.**

5. **Direct labor refers to the efforts of employees who physically convert materials to finished product. Indirect labor refers to the efforts of factory employees who do not work specifically on converting direct materials into finished products and whose efforts are not clearly associated (or traceable) with specific units or batches of product.**

6. **Factory overhead is limited to indirect costs that are incurred in the production process. That is, it consists of activities that support the production process, such as indirect material, indirect labor, heat, and related factory utilities. Selling and administrative overhead costs do not pertain to the production process. Instead, selling and administrative overhead are activities involved with selling the product and running the business. Accordingly, selling and administrative overhead costs are expensed as period costs.**

7. **Direct labor can be either a prime cost or a conversion cost.**

8. **Direct costs include: costs of component parts such as chips, circuit boards, cases, drives, as well as the labor of workers who assemble the products.**

   Indirect costs include: cost of supervisors' salaries, factory lighting, factory heat, wages of maintenance workers, depreciation of factory equipment, insurance on the factory buildings, and property taxes on the factory buildings. *Note*: Other answers are possible as these lists are not comprehensive.

9. **Management should be evaluated on the basis of controllable costs. This is because these are the costs they can influence. Uncontrollable costs are not under the influence of these managers, and they should not be held accountable for them.**

10. **Management usually must be able to predict financial performance to be successful. Therefore, understanding how costs behave under different market conditions and production schedules enables them to better predict financial performance and to plan accordingly.**

11. **Product costs are capitalized because they represent a future value (an asset) to the business. Period costs are expensed because they are consumed in the current period.**

12. A manufacturing business produces a product, whereas in a merchandising or service business this is not the case. In making a product, the manufacturing business must control and measure three types of inventories: raw materials, goods in process, and finished goods. A merchandising business, on the other hand, must control and measure only merchandise inventory, and a service firm typically does not control and measure any inventory.

13. To run a successful business, management must make predictions and estimates about what will occur in the future. Thus, managerial accountants must project how the numbers will look under different possibilities.

14. A manufacturing firm converts raw materials into finished products. A manufacturing company would report three types of inventories on its balance sheet: raw materials, goods in process, and finished goods. The finished goods are included on the income statement as part of cost of goods sold. A merchandising company purchases inventories to resell. A merchandising company would report only one inventory item (merchandise inventory) on its balance sheet, and would include the merchandise inventory on the income statement as part of cost of goods sold. (*Note*: The manufacturer would add cost of goods manufactured to the beginning finished goods to determine the goods available for sale. The merchandising firm adds purchases to its beginning merchandise inventory to determine the goods available for sale.)

15. Manufacturers' balance sheets usually include small tools, factory buildings, factory machinery, and patents that are used to produce finished goods. For example, the "Plant Assets" category will often include factory machinery and factory building. A merchandising company would usually not own these assets.

16. Manufacturing firms have inventories at various states of completion. Manufacturing a product requires raw materials, which are converted to finished goods. Manufacturing companies maintain raw materials inventory so that they have materials available to produce goods. Any unfinished product is classified as goods in process. Goods in process inventory may be maintained to keep the factory running. Finished goods inventory is maintained to supply to customers when they place orders. (*Note*: A JIT system attempts to minimize all three types of inventory.)

17. Manufacturing activities of a company are described in the *manufacturing statement*. This statement summarizes the types and amounts of costs incurred in a company's manufacturing *process (or activities)*.

18. The three categories of manufacturing costs are: direct materials, direct labor, and factory overhead.

19. Examples of factory overhead costs include: indirect materials, indirect labor, depreciation of the factory equipment and plant, amortization of patents, the cost of small tools used, factory utilities, insurance on the factory and equipment, property taxes on plant and equipment, property taxes on materials and goods in process inventories, and repairs and maintenance on the factory building and equipment. More generally, all costs associated with manufacturing a good that are not classified as direct material or direct labor are included in overhead.

20.

Components of Manufacturing Statement	Apple Examples
Direct material	Cases, wiring, components
Direct labor	Wages of production employees
Factory overhead	Factory heat, factory lighting
Computation of cost of goods manufactured	Computation (see Exhibit 14.16)

21.

Palm
Manufacturing Statement
For Year Ended May 31, 2009

The date matches the period of the income statement. The "manufacturing statement" supports the income statement in computing cost of goods available for sale for the cost of goods sold section.

22. The income statement describes the revenues and expenses for the year. Included in the calculation of the cost of goods sold is a line item identified as the cost of goods manufactured. This amount is calculated and reported as the bottom line of the manufacturing statement. The manufacturing statement often includes a component line item showing only the *total* amount of factory overhead cost for the period. When this is done, a table of factory overhead costs explains the details underlying this single item on the manufacturing statement.

23. Cycle time is the time it takes a company to produce a product or service. Its components are process time, inspection time, move time, and wait time.

24. Value-added time provides value to a product or service from a customer's perspective. Non-value added time provides no value to the customer. Value-added time includes processing time. Non-value-added time includes the activities of inspection time, move time, and wait time.

25. Cycle efficiency is the ratio of value-added time divided by total cycle time. The closer cycle efficiency is to 1, the more of a company's time is spent on value-added activities. If the cycle efficiency is low or close to 0, the company will want to evaluate the production process to identify ways to reduce its non-value-added activities.

26. Yes. Research In Motion can use the concepts and measures of cycle time and cycle efficiency to evaluate performance on its product and service offerings.

27.

Inventory Components ($ millions)	Dell (Jan. 29, 2010)
Production materials	$ 487
Work in process	168
Finished goods	396
Total inventories	$1,051

QUICK STUDIES

Quick Study 1-1 (10 minutes)

1. **Financial accounting**
2. **Managerial accounting**
3. **Financial accounting**
4. **Managerial accounting**
5. **Financial accounting**

Quick Study 1-2 (5 minutes)

Answer: 2.

Quick Study 1-3 (5 minutes)

Answer: 2.

Quick Study 1-4 (5 minutes)

1. **Direct cost**
2. **Indirect cost**
3. **Direct cost**
4. **Indirect cost**
5. **Direct cost (since the equipment is used only to produce basketballs)**

Quick Study 1-5 (5 minutes)

Answer: 3.

Quick Study 1-6 (5 minutes)

Answer: 1. (i)(ii)(iii) — is the usual sequence, exceptions are possible.

Quick Study 1-7 (10 minutes)

Answer is 3.

Cost of goods sold is computed as:	
Beginning finished goods inventory	**$ 700**
Plus cost of goods manufactured	**5,000**
Goods available for sale	**5,700**
Less ending finished goods inventory	**850**
Cost of goods sold	**$4,850**

Quick Study 1-8 (5 minutes)

Production activities	**ii**
Sales activities	**iii**
Materials activities	**i**

Quick Study 1-9 (10 minutes)

1. **B**
2. **D**
3. **A**
4. **C**

Quick Study 1-10 (10 minutes)

Finished goods inventory, December 31, 2010	**$ 321,500**
Plus cost of goods manufactured	**972,345**
Cost of goods available for sale	**1,293,845**
Less finished goods inventory, December 31, 2011	**297,200**
Cost of goods sold	**$ 996,645**

Quick Study 1-11 (15 minutes)

Carmichael Company Manufacturing Statement For Year Ended December 31, 2011	
Direct materials	$192,500
Direct labor	65,150
Factory overhead costs	26,000
Total manufacturing costs	283,650
Add goods in process, December 31, 2010	159,600
Total cost of goods in process	443,250
Less goods in process, December 31, 2011	144,750
Cost of goods manufactured	$298,500

Quick Study 1-12 (10 minutes)

a. Process time	15.0 minutes
Inspection time	2.0 minutes
Move time	6.4 minutes
Wait time	36.6 minutes
Manufacturing cycle time	60.0 minutes
b. Manufacturing cycle efficiency (15 minutes/ 60 minutes)	0.25

Quick Study 1-13 (5 minutes)

(Amounts in millions of Swiss francs)

Raw materials inventory, beginning	3,590
Plus raw materials purchased	12,000
Raw materials available for use	15,590
Less raw materials inventory, ending	3,708
Raw materials used	11,882

EXERCISES

Exercise 1-1 (10 minutes)

Business Decision	Primary Information Source: Managerial	Primary Information Source: Financial
1. Plan the budget for next quarter	X	
2. Measure profitability of all individual stores	X	X
3. Prepare financial reports according to GAAP		X
4. Determine location and size for a new plant	X	
5. Determine amount of dividends to pay stockholders	X	X
6. Evaluate a purchasing department's performance	X	
7. Report financial performance to board of directors	X	X
8. Estimate product cost for new line of shoes	X	

Exercise 1-2 (15 minutes)

	Financial Accounting	Managerial Accounting
1. Nature of information	Monetary information.	Mostly monetary; some nonmonetary information.
2. Flexibility of practice	Structured and often controlled by GAAP.	Relatively flexible (no GAAP).
3. Focus of information	Emphasis on whole organization.	Emphasis on projects, processes, and subdivisions of an organization.
4. Time dimension	Historical information with minimum predictions.	Many projections and estimates; historical information also presented.
5. Users and decision makers	Investors, creditors and other users external to the organization.	Managers, employees, and decision makers internal to the organization.
6. Timeliness of information	Often available only after the audit is complete.	Available quickly without the need to wait for an audit.
7. Purpose of information	Assist external users in making investment, credit, and other decisions.	Assist managers in making planning and control decisions.

Exercise 1-3 (10 minutes)

1) **Planning is the process of setting goals and making plans to achieve them.**

2) **Long-term planning usually covers a period of five to ten years.**

3) **Short-term planning usually covers a period of one year.**

4) **Controlling is the process of monitoring planning decisions and evaluating an organization's activities and employees.**

Exercise 1-4 (20 minutes)

	Product Cost		Period Cost	Direct Cost	Indirect Cost
	Prime	Conversion			
1. Office supplies used			X		
2. Bad debts expense			X		
3. Small tools used		X			X
4. Factory utilities		X			X
5. Advertising			X		
6. Amortization of patents on factory machine		X			X
7. Payroll taxes for production supervisor		X			X
8. Accident insurance on factory workers*	X	X		X	X
9. Depreciation—Factory bldg		X			X
10. State and federal income tax			X		
11. Wages to assembly workers**	X	X		X	
12. Direct materials used	X			X	

* There are certain costs that can be classified as direct for one company and indirect for another. The specific classification depends on the materiality and cost benefit of tracking. For example, some companies track employee benefits for direct and indirect workers. Yet, some manufacturing companies will simply classify all employee benefits as indirect and overhead.

** Direct labor is a prime and conversion cost because this labor force is in direct contact with the product in the conversion process.

Exercise 1-5 (15 minutes)

1. Five cost classifications are

(a) Behavior (c) Controllability (e) Function
(b) Traceability (d) Relevance

2. Two purposes of identifying these separate cost classifications:

(a) Cost classifications provide a standardized framework for using cost accounting information by management.

(b) Cost classifications are useful in different types of management analysis. For example, cost accounting is used to evaluate employees, management, divisions, regions, and customer profitability; each has a unique framework for analysis and decision making. In short, different analyses usually require a different role for cost information. Many of these analyses will be expanded upon in the remaining chapters of this book.

Exercise 1-6 (20 minutes)

1.

	Cost by Behavior		Cost by Traceability	
Product Cost	**Variable**	**Fixed**	**Direct**	**Indirect**
1. Taxes on factory		X		X
2. Machinery depreciation		X		X
3. Coolants for machinery		X		X
4. Wages of assembly workers	X		X	
5. Lace to hold the leather together	X			X
6. Leather cover for soccer balls	X		X	
7. Annual flat fee paid for office security		X		X

Exercise 1-6 (*concluded*)

2. Most fixed costs are indirect. Fixed costs normally are resources acquired to support the production process rather than being traceable to individual products or batches of product. However, not all indirect costs are fixed. Some, like indirect materials, are variable.

For example, as production increases, the total cost of the laces consumed in production increases. These laces might be classified as direct materials. But since their value is low compared to the total value of the soccer ball, it is not worth the effort to try and trace the amount that goes into each ball. This is why they are treated as indirect.

In addition, the direct costs—direct materials and direct labor—are variable. They are identified with specific items or batches of items, and the total cost of the raw materials and labor consumed increases as production increases.

Exercise 1-7 (20 minutes)

Part 1

Company 1, Sunny Foods, is a merchandising firm with only one inventory item, merchandise inventory. Company 2, Roller Blades Mfg., is a manufacturing company with 3 inventory categories (raw materials, goods in process, and finished goods).

Part 2

Company 1 Sunny Foods Current Assets Section December 31, 2011	
Cash	$ 9,000
Accounts receivable	64,000
Merchandise inventory	47,000
Prepaid expenses	3,500
Total current assets	$123,500

Company 2 Roller Blades Mfg. Current Assets Section December 31, 2011	
Cash	$ 7,000
Accounts receivable	77,000
Raw materials inventory	44,000
Goods in process inventory	32,000
Finished goods inventory	52,000
Prepaid expenses	700
Total current assets	$212,700

Discussion: The current assets section for these two companies differs because one is a merchandiser and one is a manufacturer. Sunny Foods purchases items for resale, so it has only one type of inventory. Roller Blades Mfg., on the other hand, must report its inventories at the various stages of completion: Raw materials are items not yet put into the process; Goods in process are started but not complete; and Finished goods are ready for sale.

Exercise 1-8 (20 minutes)

Merchandising Business

CENTURY Partial Income Statement For Year Ended December 31, 2011	
Cost of goods sold	
Merchandise inventory, December 31, 2010	$ 250,000
Merchandise purchases	460,000
Goods available for sale	710,000
Less merchandise inventory, December 31, 2011	150,000
Cost of goods sold	$ 560,000

Manufacturing Business

NEW HOMES Partial Income Statement For Year Ended December 31, 2011	
Cost of goods sold	
Finished goods inventory, December 31, 2010	$ 500,000
Cost of goods manufactured	886,000
Goods available for sale	1,386,000
Less finished goods inventory, December 31, 2011	144,000
Cost of goods sold	$1,242,000

Exercise 1-9 (30 minutes)

	Canyon Company	Rossings Company
1. COST OF GOODS MANUFACTURED		
Direct materials		
Beginning raw materials inventory	$ 9,250	$ 11,000
Raw materials purchases	35,000	54,000
Raw materials available for use	44,250	65,000
Less ending raw materials inventory	7,300	9,200
Direct materials used	36,950	55,800
Direct labor	21,000	37,000
Factory overhead		
Rental cost on factory equipment	29,000	24,750
Factory utilities	11,000	14,000
Factory supplies used	10,200	5,200
Indirect labor	3,250	9,660
Repairs—Factory equipment	6,780	3,500
Total factory overhead	60,230	57,110
Total manufacturing costs	118,180	149,910
Beginning goods in process inventory	16,500	21,950
Total cost of goods in process	134,680	171,860
Less ending goods in process inventory	24,000	18,000
Cost of goods manufactured	$110,680	$153,860
2. COST OF GOODS SOLD		
Beginning finished goods inventory	$ 14,000	$ 18,450
Cost of goods manufactured	110,680	153,860
Cost of goods available for sale	124,680	172,310
Less ending finished goods inventory	19,650	15,300
Cost of goods sold	$105,030	$157,010

Exercise 1-10 (25 minutes)

Account	Balance Sheet	Income Statement	Manufacturing Statement	Overhead Report
Accounts receivable.....	✓			
Computer supplies used in office.....		✓		
Beginning finished goods inventory		✓		
Beginning goods in process inventory.....			✓	
Beginning raw materials inventory...			✓	
Cash.....	✓			
Depreciation expense—Factory building.....				✓
Depreciation expense—Factory equipment				✓
Depreciation expense—Office building.....		✓		
Depreciation expense—Office equipment		✓		
Direct labor			✓	
Ending finished goods inventory.....	✓	✓		
Ending goods in process inventory..	✓		✓	
Ending raw materials inventory	✓		✓	
Factory maintenance wages.....				✓
Computer supplies used in factory...				✓
Income taxes.....		✓		
Insurance on factory building				✓
Rent cost on office building		✓		
Office supplies used		✓		
Property taxes on factory building ...				✓
Raw materials purchases			✓	
Sales.....		✓		

Exercise 1-11 (25 minutes)

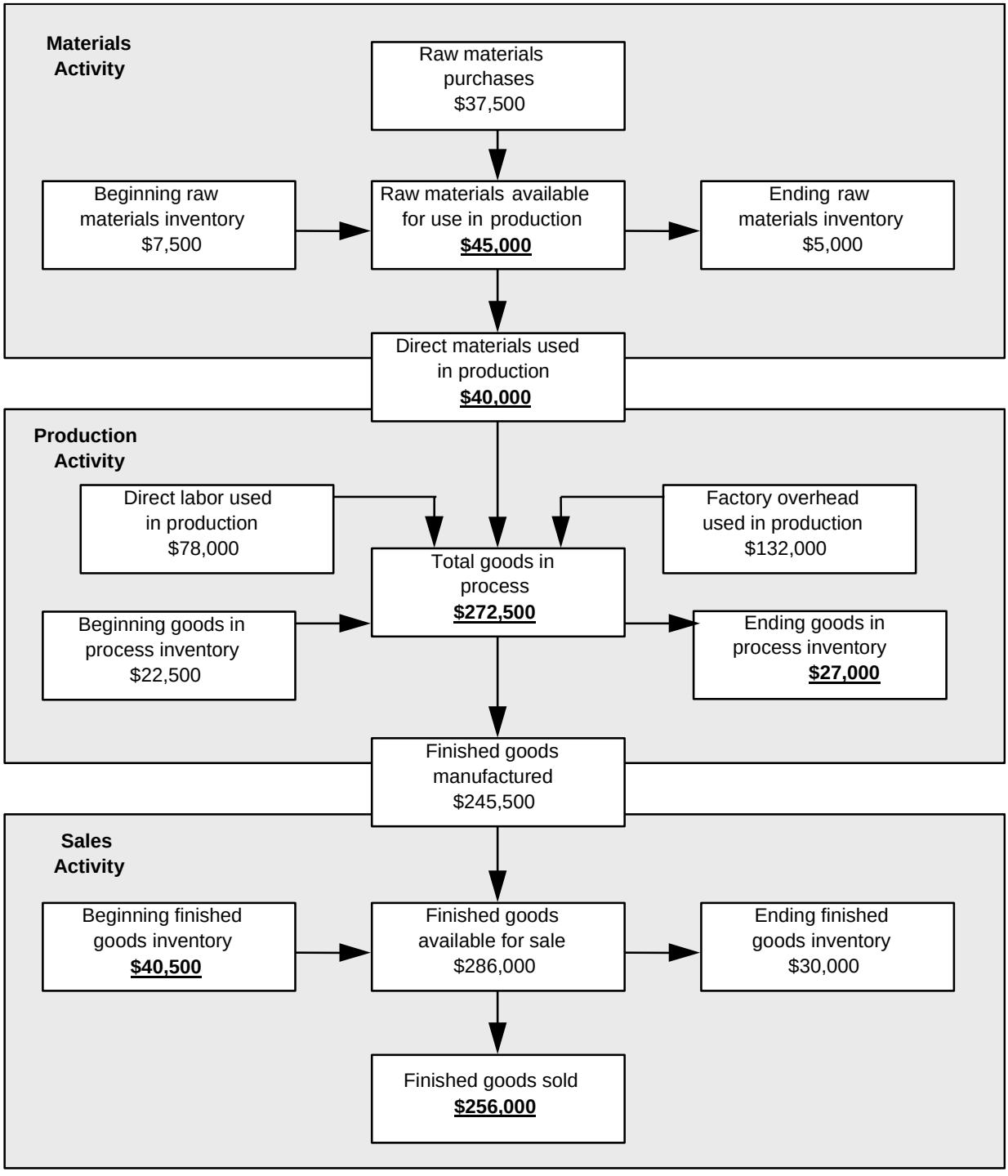
RANDA COMPANY
Manufacturing Statement
For Year Ended December 31, 2011

Direct materials		
Raw materials inventory, December 31, 2010	$ 39,000	
Raw materials purchases	177,600	
Raw materials available for use	216,600	
Less raw materials inventory, December 31, 2011	44,700	
Direct materials used		$171,900
Direct labor		227,000
Factory overhead		
Factory computer supplies used	19,840	
Indirect labor	49,000	
Repairs—Factory equipment	7,250	
Rent cost of factory building	59,000	
Total factory overhead costs		135,090
Total manufacturing costs		533,990
Goods in process inventory, December 31, 2010		55,900
Total cost of goods in process		589,890
Less goods in process inventory, December 31, 2011		43,500
Cost of goods manufactured		$546,390

Exercise 1-12 (20 minutes)

RANDA COMPANY Income Statement For Year Ended December 31, 2011		
Sales		$1,252,000
Cost of goods sold		
Finished goods inventory, December 31, 2010	$ 64,750	
Cost of goods manufactured	546,390	
Cost of goods available for sale	611,140	
Less finished goods inventory, December 31, 2011	69,300	
Cost of goods sold		541,840
Gross profit		710,160
Operating expenses		
Advertising expenses	96,000	
General and administrative expenses	131,300	
Total operating expenses		227,300
Operating income		$ 482,860

Exercise 1-13 (15 minutes)



Exercise 1-14 (10 minutes)

a.

1.	**B**		**3.**	**A**
2.	**C, D**		**4.**	**A**

b. If customers rate any of the factors on the survey as anything other than "very satisfied," managers should investigate the reasons for the customer's lack of satisfaction. The survey itself does not identify the reasons, only the lack of satisfaction. It would be helpful for management to include an open-ended question after each of the factors to ask the customer to elaborate on their satisfaction or lack of satisfaction.

Exercise 1-15 (10 minutes)

1. (b)

2. (a), (c), and (d)

3. (a) and (c)

PROBLEM SET A

Problem 1-1A (20 minutes)

The managerial accounting professional must do more than assign value to ending inventory and cost of goods sold. S/he must understand the industry and the current business environment of the company. The managerial accounting professional must be able to estimate the costs and benefits of business plans. This can include, for example, cost/benefit analyses of (1) a JIT manufacturing system and/or (2) a new computer or technology system to better serve the customer.

Specifically for the automobile industry, the managerial accountant must estimate the potential revenue of a new vehicle and the costs of production. To properly estimate the revenue and costs of production, the managerial accountant must understand the automobile industry and the competitive forces in the global automobile industry.

Problem 1-2A (45 minutes)

Part 1 **Cost classification and amounts**

	Cost by Behavior		Cost by Function	
Costs	**Variable**	**Fixed**	**Product**	**Period**
Plastic for casing—$12,000	$12,000		$12,000	
Wages of assembly workers—$60,000	60,000		60,000	
Property taxes on factory—$4,500		$ 4,500	4,500	
Accounting staff salaries—$45,000		45,000		$45,000
Drum stands (1,000 stands outsourced)—$25,000	25,000		25,000	
Rent cost of equipment for sales staff—$7,000		7,000		7,000
Upper management salaries—$100,000		100,000		100,000
Annual flat fee paid for maintenance service—$9,000		9,000	9,000	
Sales commissions—$10 per unit	$10 x units sold			$10 x units sold
Machinery depreciation—$10,000		10,000	10,000	

Problem 1-2A (concluded)

Part 2

NeatBeat
Calculation of Manufacturing Cost per Drum Set
For Year Ended December 31, 2011

Item	Total cost	Per unit cost*
Variable manufacturing costs		
Plastic for casing	$ 12,000	$ 12
Wages of assembly workers	60,000	60
Drum stands	25,000	25
Total variable manufacturing costs	97,000	97
Fixed manufacturing costs		
Property taxes on factory	6,000	6
Annual fee for maintenance service	9,000	9
Machinery depreciation	10,000	10
Total fixed manufacturing costs	25,000	23
Total manufacturing cost	$122,000	$120

*Total cost / 1,000 drum sets

Part 3

If 1,200 drum sets are produced, we would expect the total cost of the plastic for the casings to increase to $14,400 (1,200 drum sets x $12/set), but the cost per unit to stay at $12 per drum set. Variable costs increase in total as the number of units produced increases, but the unit cost remains constant.

Part 4

If 1,200 drum sets are produced, we would expect the total cost of the property taxes to remain at $6,000 because it is a fixed cost. However, the cost per unit will decrease to $5.00/drum set ($6,000 / 1,200 sets). Fixed costs do not change in total as production increases, but the unit cost will decrease as production increases.

Problem 1-3A (30 minutes)

MEMORANDUM

TO:
FROM:
DATE:
SUBJECT:

The memorandum content should include the following points:

Product and period costs are different. Product costs are defined as direct material, direct labor, and factory overhead. Moreover, product costs are capitalized and expensed as sold. All other costs, such as administrative and selling expenses, are reported and expensed in the period incurred and are called period costs. Period costs are the types of expenses usually identified as operating expenses.

Product costs can be further understood by thinking about what takes place in the production process. Direct material and direct labor are primary components to the production process, thus these costs are labeled prime costs. Direct labor and factory overhead are key resources applied to the conversion of the raw materials to a finished product, so these costs are labeled conversion costs. A merchandising business does not transform a raw material to a finished product. Therefore, a merchandising business does not have to be concerned with prime and conversion costs. Purchases are the only product cost category for a merchandiser.

Problem 1-4A (60 minutes)

Instructor note: There can be more than one right answer to this problem. Students can experience some frustration in completing this assignment. Their reaction is normal and a part of the process in learning how difficult it is to make estimates of opportunity costs.

A good answer to this problem should show estimates for:

(*a*) lost revenue from both repeat business and referrals from satisfied customers, and

(*b*) the added costs associated with both re-work and lost production.

A good answer would also show that purchasing a higher-quality product at a greater cost will result, under the conditions specified in this case, in losing money in the long-run. Specifically, the answer should appear similar to the following:

(1) From the data available in *Decision Maker*, the company saves $90,000, computed as 3,000 motorcycles multiplied by $30 per seat ($145 - $115).

(2) Estimates must be made of opportunity costs (and revenues):

- **(*a*) Lost gross profit from repeat business and referrals (10 lost customers x $3,000 lost gross profit per motorcycle) = $30,000.**
- **(*b*) Lost production (1% x 250 days x 8 hours x $2,000 per hour) = $40,000.**

(3) Recommend to buy from Supplier (B) based on the following:
The $90,000 out-of-pocket cost savings exceed the total cost of lost gross profit ($30,000) and lost production ($40,000).

Problem 1-5A (40 minutes)

Part 1

Units and dollar amounts of raw materials inventory in heels

Beginning inventory, December 31, 2010 (1,500 units x $5)	$ 7,500
Purchases during 2011 (50,000 units x $5)	250,000
Inventory available for production	257,500
Inventory transferred into production (40,000* x $5)	200,000
Ending inventory, December 31, 2011 (11,500** x $5)	$ 57,500

*Note: 20,000 pairs of boots require 40,000 heels.

**(1,500 + 50,000 – 40,000) = 11,500.

Part 2 Analysis Component

Topics of discussion for this memorandum include:

- Description (general) of the JIT inventory system and how it operates.
- Cutting the heel inventory in half would free up $28,750 of working capital (11,500 units x ½ x $5 cost).
- The funds freed up could be used to reduce debt, train employees, or purchase new equipment.
- The company would save on insurance, tracking, warehouse space, time, and material handling costs, if inventory is reduced.
- Additional costs from a JIT system would arise from more frequent ordering, deliveries, and possibly handling.

Problem 1-6A (40 minutes)

Part 1

MERCHANDISING BUSINESS

PINNACLE RETAIL Partial Income Statement For Year Ended December 31, 2011	
Cost of goods sold	
Merchandise inventory, December 31, 2010	$150,000
Merchandise purchases	250,000
Goods available for sale	400,000
Less merchandise inventory, December 31, 2011	100,000
Cost of goods sold	$300,000

MANUFACTURING BUSINESS

SLOPE BOARD MFG Partial Income Statement For Year Ended December 31, 2011	
Cost of goods sold	
Finished goods inventory, December 31, 2010	$300,000
Cost of goods manufactured	586,000
Goods available for sale	886,000
Less finished goods inventory, December 31, 2011	200,000
Cost of goods sold	$686,000

Part 2

MEMORANDUM

TO:
FROM:
DATE:
SUBJECT:

The answers will vary but should include:

- **The Merchandise Inventory account on December 31 for Pinnacle and the Finished Goods Inventory account on December 31 for Slope Board are computed and reported on the income statement as part of cost of goods sold.**
- **The inventory accounts must also be included in the current asset section of the balance sheet. Since Slope Board is a manufacturer, it will also have raw materials and goods in process inventory accounts.**

Problem 1-7A (10 minutes)

1.	C	6.	B
2.	A	7.	B, C
3.	C	8.	B
4.	C	9.	A, B
5.	A	10.	C

Problem 1-8A (75 minutes)

Part 1

PLAZA COMPANY Manufacturing Statement For Year Ended December 31, 2011		
Direct materials		
Raw materials inventory, December 31, 2010	$ 168,850	
Raw materials purchases	927,000	
Raw materials available for use	1,095,850	
Less raw materials inventory, December 31, 2011	184,000	
Direct materials used		$ 911,850
Direct labor		677,480
Factory overhead		
Depreciation expense—Factory equipment	35,550	
Factory supervision	104,600	
Factory supplies used	9,350	
Factory utilities	35,000	
Indirect labor	58,875	
Miscellaneous production costs	10,425	
Rent expense—Factory building	78,800	
Maintenance expense—Factory equipment	37,400	
Total factory overhead costs		370,000
Total manufacturing costs		1,959,330
Goods in process inventory, December 31, 2010		17,700
Total cost of goods in process		1,977,030
Less goods in process inventory, December 31, 2011		21,380
Cost of goods manufactured		$1,955,650

Problem 1-8A *(Continued)*

Part 2

PLAZA COMPANY Income Statement For Year Ended December 31, 2011		
Sales		$4,527,000
Less sales discounts		64,500
Net sales		4,462,500
Cost of goods sold		
Finished goods inventory, December 31, 2010	$ 169,350	
Cost of goods manufactured	1,955,650	
Goods available for sale	2,125,000	
Less finished goods inventory, December 31, 2011	138,490	
Cost of goods sold		1,986,510
Gross profit from sales		2,475,990
Operating expenses		
Selling expenses		
Advertising expense	30,750	
Depreciation expense—Selling equipment	10,600	
Rent expense—Selling space	28,100	
Sales salaries expense	394,560	
Total selling expenses		464,010
General and administrative expenses		
Depreciation expense—Office equipment	9,250	
Office salaries expense	65,000	
Rent expense—Office space	24,000	
Total general and administrative expenses		98,250
Total operating expenses		562,260
Income before state and federal taxes		1,913,730
Income taxes expense		235,725
Net income		$1,678,005

Problem 1-8A *(Continued)*

Part 3

	Raw Materials	Finished Goods
Cost of raw materials used	$911,850	
Cost of finished goods sold		$1,986,510
Beginning inventory	$168,850	$ 169,350
Ending inventory	184,000	138,490
Total beginning plus ending inventory	$352,850	$ 307,840
Average inventory (Total / 2)	$176,425	$ 153,920
Inventory turnover (COGS* / Average inventory)	5.2	12.9
Days' sales in inventory [(Ending inv./COGS*) x 365]	73.7	25.4

***To calculate the turnover and days' sales in inventory for raw materials, use raw materials used rather than cost of goods sold. Turnover and days' sales are rounded to one decimal place.**

Discussion: The inventory turnover ratio for the raw materials inventory is substantially lower than the turnover ratio for finished goods.

One reason for the difference could be that the source of supply for raw materials is relatively undependable, so that management believes it is necessary to carry a larger inventory to sustain operations through periods when the supply might be interrupted. Another possible reason is that significant volume discounts can be obtained by making larger purchases of the raw materials. It is also possible that management has been carrying too much in the inventory of raw materials, and could reduce the level without harming the company's ability to operate. On the other hand, the turnover ratio for finished goods might be higher because the market for the product is so active that items are sold very quickly after they are available. This implies that the demand for the product is very strong. It is also possible that the finished goods turnover ratio is too high and that the company is risking lost sales by not having enough product on hand.

Similar inferences are drawn from the days' sales in inventory ratio results. In particular, the company is carrying 73.7 days' supply of raw materials inventory. Note that the company carries less than half as many days' supply (25.4 days) in its finished goods inventory.

Problem 1-9A (15 minutes)

Part 1

Process time	**16.0 days**
Inspection time	**0.5 days**
Move time	**5.5 days**
Wait time	**18.0 days**
Manufacturing cycle time	**40.0 days**

Part 2

Manufacturing cycle efficiency (16.0 days/ 40.0 days)	**0.40**

This means that the company is spending 40% of its time in value-added activities, and 60% of its time on non-value-added activities.

Part 3

To increase the manufacturing cycle efficiency to 0.75, the company needs to reduce the total manufacturing cycle time to 21.3 days without changing the process time (16 days / 0.75 = 21.3 days). To do this, they must reduce the 24 days of non-value-added time (0.5 + 5.5 + 18.0) down to 5.3 days or less. One way to do this might be to rearrange the manufacturing facility so that materials and work in process do not have to move as far, reducing the move time. In addition, better scheduling and planning can help the company to reduce the wait time.

PROBLEM SET B

Problem 1-1B (20 minutes)

The managerial accounting professional must do more than assign value to ending inventory and cost of goods sold. S/he must understand the industry and the current business environment of the company. The managerial accounting professional must be able to estimate the costs and benefits of business plans. This can include, for example, cost/benefit analyses of (1) a JIT manufacturing system and/or (2) a new computer or technology system to better serve the customer.

Specifically for the home electronics industry, the managerial accountant must estimate the potential revenue of new home electronic lines and the costs of production. To estimate the revenue and costs of production s/he must understand the home electronics industry and its competitive forces.

Problem 1-2B (45 minutes)

Part 1 **Cost classification and amounts**

	Cost by Behavior		Cost by Function	
Costs	**Variable**	**Fixed**	**Product**	**Period**
Plastic for BDs—$1,000.....	$ 1,000		$ 1,000	
Wages of assembly workers—$20,000	20,000		20,000	
Rent cost of factory—$4,500		$ 4,500	4,500	
Systems staff's salaries—$10,000....		10,000		$ 10,000
Labeling (12,000 outsourced)—$2,500 total	2,500		2,500	
Rent cost of office equipment—$700..		700		700
Upper management salaries—$100,000		100,000		100,000
Annual fees for cleaning service—$3,000		3,000		3,000
Sales commissions—$0.50 per BD .	$0.50 x BDs sold			$0.50 x BDs sold
Machinery depreciation—$15,000		15,000	15,000	

Problem 1-2B (*concluded*)

Part 2

Hip-Hop Calculation of Manufacturing Cost per BD For Year Ended December 31, 2011		
Item	**Total cost**	**Per unit cost ***
Variable manufacturing costs		
Plastic for BDs	**$ 1,000**	**$0.10**
Wages of assembly workers	**20,000**	**2.00**
Labeling	**2,500**	**0.25**
Total variable manufacturing cost	**23,500**	**2.35**
Fixed manufacturing costs		
Cost of factory rent	**4,500**	**0.45**
Machinery depreciation	**15,000**	**1.50**
Total fixed manufacturing costs	**19,500**	**1.95**
Total manufacturing costs	**$43,000**	**$4.30**

*** Total cost / 10,000 BDs.**

Part 3

If 15,000 BDs are produced, we would expect the cost of the plastic for the BDs to increase to $1,500 (15,000 BDs x $0.10/BD), but the cost per unit to stay at $0.10 per BD. Variable costs increase in total as the number of units produced increases, but the unit cost remains constant.

Part 4

If 15,000 BDs are produced, we would expect the cost of the factory rent to remain at $4,500 in total because it is a fixed cost. However, the cost per unit will decrease to $0.30 per BD ($4,500 / 15,000 BDs). Fixed costs do not change in total as production increases, but the unit cost will decrease as production increases.

Problem 1-3B (30 minutes)

MEMORANDUM

TO:
FROM:
DATE:
SUBJECT:

The memorandum content should include the following points:

The memorandum should begin with a clarification between prime and conversion costs. Prime costs are resources consumed with direct production of a good. Thus, prime costs consist of direct materials and direct labor. Conversion costs are resources consumed by converting the product to a finished good. Thus, conversion costs are direct labor and factory overhead. Prime and conversion costs are also classified as product costs because they <u>are capitalized</u> as inventory and expensed when the product is sold.

Period costs are resources committed to support sales and administration. For example, sales commission and office rent are labeled period costs. Period costs are <u>not capitalized</u>.

Problem 1-4B (60 minutes)

Instructor note: There can be more than one right answer to this problem. Students can experience some frustration in completing this assignment. Their reaction is normal and a part of the process in learning how difficult it is to make estimates of opportunity costs.

A good answer to this problem should show estimates for:

(*a*) lost revenue from both repeat business and referrals from satisfied customers, and

(*b*) the added costs associated with both re-work and lost production.

A good answer would also show that purchasing a higher-quality product component at a greater cost will result, under the conditions specified in this case, in losing money in the long run. Specifically, the answer should appear similar to the following:

(1) From the data available in *Decision Maker*, the company saves $60,000, computed as 2,000 motorcycles multiplied by $30 per seat ($145 - $115).

(2) Estimates must be made of opportunity costs (and revenues):

- **(*a*) Lost gross profit from repeat business and referrals (8 lost customers x $4,000 lost gross profit per motorcycle) = $32,000.**
- **(*b*) Lost production (1% x 250 days x 8 hours x $500 per hour) = $10,000.**

(3) Recommend to buy from Supplier (B) based on the following:
The $60,000 out-of-pocket cost savings exceed the total cost of lost gross profit ($32,000) and lost production ($10,000).

Problem 1-5B (40 minutes)

Part 1

Unit and dollar amounts of raw materials inventory in blades

Beginning inventory, December 31, 2010 (2,000 x $15)	**$ 30,000**
Purchases of blades during 2011 (45,000 x $15)	**675,000**
Blade inventory available for production	**705,000**
Blade inventory transferred to production (40,000* x $15)	**600,000**
Ending inventory, December 31, 2011 (7,000 x $15) .....**	**$105,000**

***20,000 pairs of skates = 40,000 blades**
****(2,000 + 45,000 – 40,000) = 7,000.**

Part 2 **Analysis Component**

Topics of discussion for the memorandum include:

- **General description of the JIT inventory system and how it operates.**
- **Cutting the blade inventory in half would free up $52,500 of working capital (7,000 units x ½ x $15).**
- **The funds freed up could be used to reduce debt, train employees, or purchase new equipment.**
- **The company would save on insurance, tracking, warehouse space, time, and material handling costs if inventory is reduced.**
- **Additional costs from a JIT system would arise from more frequent ordering, deliveries, and possibly handling.**

Problem 1-6B (40 minutes)

Part 1

MERCHANDISING BUSINESS

CARDINAL DRUG (Retail) Partial Income Statement For Year Ended December 31, 2011	
Cost of goods sold	
Merchandise inventory, December 31, 2010	$ 50,000
Merchandise purchases	350,000
Goods available for sale	400,000
Less merchandise inventory, December 31, 2011	25,000
Cost of goods sold	$375,000

MANUFACTURING BUSINESS

NANDINA (Manufacturing) Partial Income Statement For Year Ended December 31, 2011	
Cost of goods sold	
Finished goods inventory, December 31, 2010	$200,000
Cost of goods manufactured	686,000
Goods available for sale	886,000
Less finished goods inventory, December 31, 2011	300,000
Cost of goods sold	$586,000

Part 2

MEMORANDUM

TO:
FROM:
DATE:
SUBJECT:

The answers will vary slightly but should include:

- **The Merchandise Inventory account on December 31 for Cardinal Drug and the Finished Goods Inventory account on December 31 for Nandina Mfg. are computed and reported on the income statement as part of cost of goods sold.**
- **The inventory accounts must also be included in the current asset section of the balance sheet. Since Nandina Mfg. is a manufacturer, it will also have raw materials and goods in process inventory accounts.**

Problem 1-7B (10 minutes)

1.	B	6.	A
2.	B	7.	A
3.	A	8.	B
4.	B, C	9.	A
5.	C	10.	C, A

Problem 1-8B (75 minutes)

Part 1

FIRETHORN FURNITURE Manufacturing Statement For Year Ended December 31, 2011		
Direct materials		
Raw materials inventory, December 31, 2010	$ 42,375	
Raw materials purchases	896,375	
Raw materials available for use	938,750	
Less raw materials inventory, December 31, 2011	72,430	
Direct materials used		$ 866,320
Direct labor		564,500
Factory overhead		
Depreciation expense—Factory equipment	37,400	
Factory supervision	123,500	
Factory supplies used	8,060	
Factory utilities	39,500	
Indirect labor	61,000	
Miscellaneous production costs	10,440	
Rent expense—Factory building	95,500	
Maintenance expense—Factory equipment	32,375	
Total factory overhead costs		407,775
Total manufacturing costs		1,838,595
Goods in process inventory, December 31, 2010		14,500
Total cost of goods in process		1,853,095
Less goods in process inventory, December 31, 2011		16,100
Cost of goods manufactured		$1,836,995

Problem 1-8B *(Continued)*

Part 2

FIRETHORN FURNITURE Income Statement For Year Ended December 31, 2011		
Sales		$5,002,000
Less sales discounts		59,375
Net sales		4,942,625
Cost of goods sold		
Finished goods inventory, December 31, 2010	$ 179,200	
Cost of goods manufactured	1,836,995	
Goods available for sale	2,016,195	
Less finished goods inventory, December 31, 2011	143,750	
Cost of goods sold		1,872,445
Gross profit from sales		3,070,180
Operating expenses		
Selling expenses		
Advertising expense	22,250	
Depreciation expense—Selling equipment	12,125	
Rent expense—Selling space	29,000	
Sales salaries expense	297,300	
Total selling expenses		360,675
General and administrative expenses		
Depreciation expense—Office equipment	10,440	
Office salaries expense	72,875	
Rent expense—Office space	25,625	
Total general and administrative expenses		108,940
Total operating expenses		469,615
Income before state and federal taxes		2,600,565
Income taxes expense		138,700
Net income		$2,461,865

Problem 1-8B *(Continued)*

Part 3

	Raw Materials	Finished Goods
Cost of raw materials used	$866,320	
Cost of finished goods sold		$1,872,445
Beginning inventory	$ 42,375	$ 179,200
Ending inventory	72,430	143,750
Total beginning plus ending inventory	$114,805	$ 322,950
Average inventory (Total / 2)	$ 57,403	$ 161,475
Turnover ratios (COGS / Average inventory)	15.1	11.6
Days' sales in inventory [(Ending inv./COGS) x 365]	30.5	28.0

***To calculate the turnover and days' sales in inventory for raw materials, use raw materials used rather than cost of goods sold. Turnover and days' sales are rounded to one decimal place.**

Discussion: The inventory turnover ratio for the raw materials inventory is higher than the turnover ratio for finished goods. One reason for the difference could be that the source of supply for raw materials is relatively dependable, so that the management believes it is not necessary to carry a larger inventory to sustain operations through periods when the supply might be interrupted.

The company is carrying 30.5 days' supply of raw materials inventory and 28.0 days of finished goods inventory. During the year, the company increased its inventory of raw materials by 71% but decreased its inventory of finished goods by 20%.

Problem 1-9B (60 minutes)

Part 1

Process time	**16.0 hours**
Inspection time	**3.4 hours**
Move time	**9.0 hours**
Wait time	**21.6 hours**
Manufacturing cycle time	**50.0 hours**

Part 2

Manufacturing cycle efficiency (16.0 hours/ 50.0 hours)	**0.32**

This means that Quick Dry Ink is spending 32% of its time in value-added activities, and 68% of its time on non-value-added activities.

Part 3

To increase the manufacturing cycle efficiency to 0.80 Quick Dry Ink needs to reduce the total manufacturing cycle time to 20 hours without changing the process time (16 hours/ 0.80 = 20 hours). To do this, they must reduce the 34 hours of non-value-added time (3.4 + 9.0 + 21.6) down to 4 hours or less. One way to do this might be to rearrange the manufacturing facility so that materials and work in process do not have to move as far, reducing the move time. In addition, better scheduling and planning may help Quick Dry Ink to reduce the wait time.

SERIAL PROBLEM — SP 1

Serial Problem, Business Solutions (50 minutes)

1.

Product Costs	Cost by Behavior: Variable	Cost by Behavior: Fixed	Cost by Traceability: Direct	Cost by Traceability: Indirect
1. Monthly flat fee to clean workshop		x		x
2. Laminate coverings for desktops	x		x	
3. Taxes on assembly workshop		x		x
4. Glue to assemble workstation component parts	x			x
5. Wages of desk assembler	x		x	
6. Electricity for workshop	x			x
7. Depreciation on tools		x		x

2.

Business Solutions Manufacturing Statement For Month Ended January 31, 2012	
Direct materials	$2,200
Direct labor	900
Factory overhead costs	490
Total manufacturing costs	3,590
Add goods in process, December 31, 2011	0
Total cost of goods in process	3,590
Less goods in process, January 31, 2012	540
Cost of goods manufactured	$3,050

3.

Business Solutions Partial Income Statement For Month Ended January 31, 2012	
Cost of goods sold	
Finished goods inventory, December 31, 2011	$ 0
Cost of goods manufactured	3,050
Goods available for sale	3,050
Less finished goods inventory, January 31, 2012	350
Cost of goods sold	$2,700

Reporting in Action — BTN 1-1

1. The "Use of Estimates" section indicates that there are many estimates that Research In Motion (RIM) must make in preparing its financial statements. Selected estimates follow.

Estimate*	Effects if actual results differ from assumptions
Inventory reserves: RIM must value its inventory at the lower of cost or market and establish an inventory loss reserve.	If the loss is not correctly estimated, RIM could be exposed to material losses or gains.
Reserves for litigation claims: RIM must establish liabilities if a loss from litigation is probable and reasonably estimable.	If this is not done correctly, then RIM may have to record additional material litigation losses in future years.
Provisions for warranty claims: RIM must accrue warranty liabilities for future warranty claims.	If this is not done correctly, then RIM's income will be lower in future years when it pays the additional warranty claims

*** There are also estimates made in the accounting for business combinations, taxes, and financial instruments.**

2. It is commonly the managerial accountant's responsibility to try to attach a dollar value to the individual estimates. The less certain the estimate, the greater the risk that there will be future restatements of information.

3. Solutions depend on the annual report information collected.

Comparative Analysis — BTN 1-2

1. **RIM operates some of its own manufacturing facilities and also outsources some of its manufacturing function. From its February 28, 2009 annual report, the company made "strategic investments in our Waterloo manufacturing facility" and engaged "new outsourcing partners."**

2. **Apple outsources most of its manufacturing function. The "Risk Factors" section of its annual report states: "Most of the Company's components and products are manufactured in whole or in part by a few third-party manufacturers."**

3. **RIM reports the following inventory components:**

Inventory Components ($ millions)	RIM (Feb. 28, 2009)
Raw materials	$ 464.5
Work in process	250.7
Finished goods	35.3
Less: Provision for excess and obsolete inv..	(68.1)
Total inventories	$682.4

Apple does not report detailed inventory components in its September 26, 2009 annual report. It reports total inventories of $455 million on its balance sheet and in a footnote indicates: "The company's inventories consist primarily of finished goods for all periods presented." As Apple primarily outsources its manufacturing function, it holds no raw materials inventory and has no work-in-process inventory, unlike RIM.

Ethics Challenge — BTN 1-3

1. **Raw materials are part of inventory and should be capitalized (set up as assets). Their costs are subsequently reported as part of cost of goods sold when the finished goods that require these materials are sold. If the CD raw materials were expensed in the current period, the financial statements would not be in conformance with GAAP, nor with standard practices in managerial accounting.**

Ethics Challenge BTN 1-3 (*concluded*)

2. The challenge is how to handle a request to use one's accounting skills in an inappropriate manner. It is important to remember that the behavior of the managerial accountant is governed by rules of ethical behavior. This means that one's response to the chief financial officer can rely on the rules of ethical behavior by the managerial accounting profession (these guidelines are available at www.IMAnet.org or www.aicpa.org). Moreover, it is better that the managerial accountant not make an argument of "me versus CFO." That is, it is much more difficult for the chief financial officer to argue against a profession compared to an individual.

Communicating in Practice — BTN 1-4

Instructor note: The solution to this project depends on the database and career fields reviewed.

The objective of this Communicating in Practice project is to make students aware of the earnings potential of different professions—particularly, the often higher salaries of accounting professionals with several years of experience. It also directs them to the school's career services and placement office or relevant information in the library or on the Web. Finally, it provides useful experience in effectively communicating financial information in memorandum format.

Taking It to the Net — BTN 1-5

1. Standards of Ethical Conduct for Management Accountants are posted at the Web site: http://www.IMAnet.org

These standards (in abbreviated form) are:

<u>Competence</u> – maintain an appropriate level of professional competence.

<u>Confidentiality</u> – refrain from disclosing confidential information.

<u>Integrity</u> – professional behavior at all times; for example, avoid conflict of interest situations.

<u>Objectivity</u> – communicate information fairly and objectively.

2. The four overarching principles are: Honesty, Fairness, Objectivity, and Responsibility.

3. The IMA suggests first trying to resolve ethical conflicts by applying the policies of your organization. If this is unsuccessful, contact your immediate supervisor (unless he or she is involved in the ethical conflict). Continue presenting the issue to the next supervisory level until the conflict is resolved. Communicating information to authorities or others not employed or engaged by the organization is not appropriate unless there is a clear violation of the law. For additional help you might seek advice from an IMA Ethics Counselor, an impartial advisor, and/or your personal attorney.

Teamwork in Action — BTN 1-6

Part 1

a. Materials used = Beg. Materials + Materials purchased - End. materials
= $177,500 + $872,500 - $168,125
= $881,875

b. Factory overhead
= Depreciation on factory equipment + factory supervision + factory supplies used + factory utilities + Indirect labor + Miscellaneous production costs + Rent on factory building + Maintenance on factory equipment
= $32,500 + $122,500 + $15,750 + $36,250 + $60,000 + $8,500 + $79,750 + $27,875
= $383,125

c. Total manufacturing costs
= Materials used (from a) + Direct labor + Factory overhead (from b)
= $881,875 + $650,750 + $383,125
= $1,915,750

d. Total cost of goods in process
= Beg. GIP Inv. + Total manufacturing costs (from c)
= $15,875 + $1,915,750
= $1,931,625

e. Cost of goods manufactured
= Total cost of goods in process (from d) - Ending GIP Inventory
= $1,931,625 - $14,000
= $1,917,625

Part 2

Requires that the team check answer to part (1e) with instructor before proceeding to part (3).

Teamwork in Action *(Continued)*

Part 3

a. Net sales
= Sales - Sales discounts
= $3,275,000 - $57,500
= $3,217,500

b. Cost of goods sold
= Beg. finished goods + Cost of goods manuf. (from 1e) - End. finished goods
= $164,375 + $1,917,625 - $129,000
= $1,953,000

c. Gross profit
= Net sales (from a) - Cost of goods sold (from b)
= $3,217,500 - $1,953,000
= $1,264,500

d. Total operating expenses
= Advertising expense + Depreciation expense on office equipment + Depreciation expense on selling equipment + Office salaries expense + Rent expense on office space + Rent expense on selling space + Sales salaries expense
= $19,125 + $8,750 + $10,000 + $100,875 + $21,125 + $25,750 + $286,250
= $471,875

e. Net income before taxes
= Gross profit (from c) - Total operating expenses (from d)
= $1,264,500 - $471,875
= $792,625

Entrepreneurial Decision — BTN 1-7

1. Manufacturing costs for Hot Box Cookies include (a) direct materials such as butter, spices, flour, and chocolate (b) direct labor such as mixing, baking, and packing, and (c) factory overhead such as building insurance, depreciation, and utilities.

Each of these manufacturing cost components must be monitored and controlled for the company to be most efficient and profitable.

2. First, the owners must identify those manufacturing costs to be monitored and controlled. Second, Corey, Adam, and David should try to reduce non-value-added activities such as inspection time, move time, and wait time. The more production time that is spent toward value-added activities, the more cost effective the manufacturing process will be, and the more profitable will be the company. Two useful managerial measures the owners can use are cycle time and cycle efficiency.

3. Four goals of a total quality management (TQM) process include reduced waste, better inventory control, fewer defects, and continuous improvement. Hot Box Cookies can use TQM to ensure its key raw materials, such as spices and flour, are of the highest quality. That will result in less waste throughout the production process and less subpar cookies.

Hitting the Road — BTN 1-8

Instructor note: Student responses will vary depending on the restaurant chosen.

The general framework of a good response includes:

1. **The usual activities are**
   - **serving customer at counter**
   - **serving customer at drive-up**
   - **preparing food**
   - **taking orders**
   - **clean-up**
   - **miscellaneous "others"**

2. **Costs associated with each activity include**
   - **Direct and indirect materials – such as meat, bread, pickles, and other direct and indirect material costs.**
   - **Direct and indirect labor**
   - **Overhead—such as rent, heat, and electricity**

   The student should observe that most available cost information is classified by function such as rent, wages, and cleaning supplies. This makes it difficult to understand the cost behavior of each process. We will see in a later chapter how activity-based costing can help measure the costs of each process.

3. **Answers will vary because classification of fixed or variable depends on the costs identified in part 2.**

Global Decision — BTN 1-9

1. **The Board Practices section of the annual report identifies the board's main responsibilities:**
   - **Evaluate the strategic direction of the company, management policies and the effectiveness with which management implements them**
   - **Overseeing the structure and composition of the company's top management**
   - **Monitoring legal compliance**
   - **Management of risks related to the company's operations**
   - **Set annual ranges and/or individual limits for capital expenditures, investments and divestitures and financial commitments not to be exceeded without Board approval**
   - **Appointing and discharging the Chief Executive Officer, the Chief Financial Officer and the other members of the Group Executive Board**
   - **Confirm the remuneration (pay) the President and CEO**

2. **Management accountants would be involved in:**
   - **Helping to prepare the annual budgets.**
   - **Providing information so that management of operations is competent and prudent.**
   - **Assisting in the planning process.**
   - **Helping to maintain an adequate system of internal controls.**
   - **Providing the information necessary for acquisitions and divestments through capital budgeting techniques.**