Chapter 19

Introduction to Management Accounting

Decision Guidelines – Excel

Solution

1. The expected value of the benefits is $1,299,200 ($1,624,000 × .60) + ($812,000 × .40). Total costs are $958,000. Yes, the net benefits exceed the costs. Net benefits are total expected benefits minus total costs of expansion: $341,200 ($1,299,200 ! $958,000).

2. The expected value of the benefits exceeds costs where there is at least a 20% probability of gas price increase. The expected value of the net benefits at this point is $16,400.

T Questions

1. Text Exhibit 19-2 shows seven distinctions between management accounting and financial accounting (although students are required to explain only four). Exhibit 19-2 is summarized below:

	Management Accounting	Financial Accounting
1. Primary users	Internal—the company's managers	External—investors, creditors, and government authorities, such as the IRS and SEC
2. Purpose of information	Help managers plan and control business operations	Help investors, creditors, and others make investment, credit, and other decisions
3. Focus and time dimension	Relevance and focus on the future; example: 2004 budget prepared in 2003	Reliability, objectivity, and focus on the past; example: 2001actual performance reported in 2002
4. Type of report	Internal reports not restricted by GAAP—determined by cost-benefit analysis	Financial statements restricted by GAAP

5.	Verification	No independent audit	Annual independent audit by certified public accountant
6.	Scope of information	Detailed reports on parts of the company (products, departments, territories), often on a daily, weekly, or monthly basis	Summary reports primarily on the company as a whole, usually on a quarterly or annual basis
7.	Behavioral implications	Concern about how reports will affect employee behavior	Concern about adequacy of disclosure; behavioral implications are secondary

2. Merchandising companies buy ready-made inventory for resale and then sell these products without changing their basic form. They use a single inventory account. Manufacturing companies use labor, plant, and equipment to convert raw materials into new finished products. They use Materials Inventory, Work in Process Inventory, and Finished Goods Inventory accounts. Service companies provide services to their customers, and they have no inventory of tangible products intended for sale.

3.

Value Chain

Research & Development	Design	Production or Purchases	Marketing	Distribution	Customer Service

Management accounting is relevant to the entire value chain.

4. Cost of goods manufactured.

5. Direct materials for a home builder: lumber, shingles, plumbing fixtures, bricks. Indirect materials: nails, sandpaper, glue.

   Note: Student responses may vary.

6. Indirect materials, indirect labor, plant utilities, manufacturing supervisor salaries, and all other indirect costs related to the plant and equipment, including plant or equipment-related repairs, maintenance, rent, insurance, property taxes, and depreciation.

   Note: Student responses may vary. (Note that students are required to give only six examples.)

7. *Inventoriable product costs* are all costs of a product regarded as an asset for external financial reporting under GAAP. Thus, inventoriable product costs are initially an asset. These costs do not become expense (cost of goods sold) until the inventory is sold. *Period costs* are operating costs that are expensed in the period in which they are incurred. Period costs are never traced through the inventory accounts. Period costs are never an asset, only an expense.

8. In deciding on the long-term sale price of a product, managers should consider full product costs, including research and development, design, production or purchases, marketing, distribution, and customer service. Over the long term, selling price must cover all these costs for the company to earn a profit.

9. Service companies' income statements have no cost of goods sold computation (and no gross profit), in contrast to those of merchandisers and manufacturers.

10. The primary difference between a merchandiser's and a manufacturer's income statement is in the cost of goods sold section. The merchandiser's cost of goods sold is merchandise

purchases adjusted for changes in merchandise *inventory*. The manufacturer's cost of goods sold is the *cost of goods manufactured* adjusted for changes in *finished goods inventory.*

MERCHANDISER'S COST OF GOODS SOLD	MANUFACTURER'S COST OF GOODS SOLD
Beginning inventory	Beginning finished goods inventory
+ Purchases and freight-in	+ Cost of goods manufactured*
Cost of goods available for sale	Cost of goods available for sale
! Ending inventory	! Ending finished goods inventory
Cost of goods sold	Cost of goods sold

* *Cost of goods manufactured is computed in a separate schedule.*

Note: Schedules above are not required.

11. Cost of goods manufactured:

Beginning work in process inventory.....		$15,000
Add: Direct materials used.....	$31,000	
Direct labor.....	19,000	
Manufacturing overhead.....	32,000	
Total manufacturing costs incurred during the period		82,000
Total manufacturing costs to account for.....		97,000
Less: Ending work in process inventory.....		(4,000)
Cost of goods manufactured.....		$93,000

Note: Assumed numbers will vary across students.

12. Recent changes in the business environment include:
    1. *Shift toward a service economy* – Service companies are the largest sector of the U.S. economy. Moreover, many manufacturers are shifting focus away from manufacturing toward more service-related business elements (e.g., GE's shift away from producing jet engines toward providing overhaul services).
    2. *Global marketplace* – Increased international trade can provide a global market for highly competitive U.S. companies. However, it is also easier for foreign companies to enter and compete in U.S. markets.
    3. *Time-based competition* – The increasing pace of business in the new millennium means that, to survive in the globally wired economy, companies must quickly satisfy customer demands. e-Commerce, using the Internet in everyday business practices such as budgeting, planning, purchasing, and selling, is one means of speeding the company response. Another is the just-in-time management philosophy: companies purchase materials and complete finished goods only as needed to fill customer orders.
    4. *Quality* – Total quality management (TQM) is a key to success in a global economy. The goal is to delight customers by providing them with superior products and services. Companies do this through continuous improvement programs that eliminate defects and waste.

    Note: Student responses will probably be less detailed.

13. Globalization affects management accounting as follows:
    1. Stiffer competition means that managers need more accurate information to make wise decisions.
    2. Companies must decide whether to expand into foreign countries. To make these decisions, managers need estimates of the costs and benefits of expansion.
    3. Globalization fosters the transfer of management philosophy (such as JIT) across international borders.

    Note: Students are required to explain only *two* ways.

14. e-Commerce and the just-in-time management philosophy are two ways managers can respond to time-based competition. e-Commerce includes Web sites that instantly serve hundreds or even thousands of customers. Business-to-business e-commerce allows fast, paperless purchasing when the buyer has pre-negotiated allowable items and prices with the vendor. It may also provide suppliers with a "virtual window" into customers' production

processes that allows the supplier to quickly and accurately forecast customer demand. e-Commerce gives companies fast access to (and the ability to provide) price quotes around the world.

The just-in-time management philosophy speeds the transformation of raw materials into new finished products. Materials are purchased just in time for use in production, and goods are completed just in time to fill customer orders.

15. Costs of adopting a just-in-time philosophy include:
    - Employee training
    - Reorganizing plant layout to streamline production process
    - Identifying reliable suppliers
    - Lost sales from initial production slowdown

    Benefits of adopting a just-in-time philosophy include:
    - Lower inventory levels
      - Less capital tied up in inventory
      - Less warehouse and storage space needed
    - Faster throughput time
    - Better-quality products

16. The broad requirements of the IMA's *Standards of Ethical Conduct for Management Accountants* include:
    1. **Competence** – management accountants must maintain and perform their work with professional competence.
    2. **Confidentiality** – management accountants must maintain the confidentiality of the information with which they are entrusted.
    3. **Integrity** – management accountants must avoid actual or apparent conflicts of interest.
    4. **Objectivity** – management accountants must report information objectively and fairly.

    Note: Students are required to explain only three of the four requirements.

T Daily Exercises

(10 min.) **DE 19-1**

Even if you don't want to be an accountant, it is worthwhile to learn about management accounting, which is very different from financial accounting. Financial accounting reports to external parties (investors, creditors, the government) about the firm's past activities. The external financial statements are constrained by GAAP and therefore emphasize the reliability and objectivity of the information. These statements, provided quarterly or annually, focus on the whole firm and are audited by external auditors.

Management accounting provides information to help managers plan and control internal business operations. Management accounting provides detailed reports on parts of the company (products, departments, territories) often on a daily, weekly, or monthly basis. Management accounting reports are tailored to managements' decision needs, so they focus on the future. These reports are not constrained by GAAP. Instead, management accounting reports are determined by cost-benefits analysis. Since managers use these internal reports to plan and control operations, managers are also concerned about how this information affects employees' motivation and behavior. The bottom line is that even though you don't plan to be an accountant, you need to understand how management accounting works so that you can use it to make more informed decisions about planning and controlling your business operations.

Note: Students' answers may vary, but Exhibit 19-2 is a good guide for responding to the question.

(5-10 min.) DE 19-2

R & D – development of a special battery, gearing to operate with both an electric and a gas engine.

Design – redesign the car to incorporate the two engines.

Production – direct materials, direct labor, and manufacturing overhead incurred in producing the car.

Marketing – new advertising campaign, marketing allowances, and rebates to dealers to encourage promotion.

Distribution – payments to contract haulers for delivering the finished cars.

Customer service – customer hotline for reporting problems.

Note: Students' examples will vary.

(10 min.) DE 19-3

R & D – perform research on new Web page capabilities, develop new security or privacy software, or develop additional services for customers.

Design – design computer software to provide customers with information, stock selection tools, efficiently process transactions.

Production – labor of employees who maintain computer hardware, software, and databases. Depreciation on servers.

Marketing – cost of Web and newspaper advertisements.

Distribution – cost to deliver stock transaction confirmations and stock certificates.

Customer service – providing customer hotline and e-mail services to respond to questions.

E*TRADE might decide to spend more money on R & D (in-depth research) and design (of better software) to provide more online instruction to new customers, thus reducing customer service costs.

Note: Students' examples will vary.

(5-10 min.) DE 19-4

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

(5-10 min.) DE 19-5

a. **Direct materials** – wood, glass, plastic.

b. **Direct labor** – assembly-line workers' wages, saw operators' wages, paint robot operators' wages.

c. **Indirect materials** – glue, nails, paint.

d. **Indirect labor** – wages of storehouse workers, janitors, and plant manager.

e. **Other manufacturing overhead** – depreciation on plant and equipment, plant utilities, insurance on the plant, property taxes on the plant.

Note: Students' examples will vary.

(5-10 min.) DE 19-6

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

*Since the software is for tracking inventory, the cost would be associated with production. It would therefore likely be classified as part of manufacturing overhead, an inventoriable cost. However, some companies might consider the software an administrative cost, which would be a period cost.

(5 min.) DE 19-7

a. *Period cost* is expensed in the period incurred.

b. The product cost used for external reporting is called *inventoriable product cost*.

c. *Full product cost* includes all the elements of the value chain and is used for internal decisions such as setting long-run average selling prices.

d. *Inventoriable product cost* is initially considered an asset, and is not expensed until the related products are sold.

e. The sum of direct materials, direct labor, and manufacturing overhead is *inventoriable product cost* for a manufacturing company.

f. *Manufacturing overhead* is all costs incurred in the plant other than direct materials and direct labor.

(10 min.) DE 19-8

	Toyota	United Parcel Service	Home Depot
1.	Manufacturer	Service	Merchandiser
2.	Automobiles	Shipping services	Consumer products, mostly for home improvement
3.	Materials Inventory Work in Process Inventory Finished Goods Inventory	None	Inventory
4.	Direct materials + Direct labor + Manufacturing overhead	No	Purchases + Freight-in

(5-10 min.) **DE 19-9**

Apex Showrooms		
Partial Income Statement (Revised)		
Month Ended December 31, 20X2		
Sales revenue		$150,000
Cost of goods sold:		
Beginning inventory	$ Z	
Purchases and freight-in	110,000	
Cost of goods available for sale	Y	
Ending inventory	(13,000)	
Cost of goods sold		X
Gross profit		$ 45,000

Cost of goods sold:

Sales revenue ! Cost of goods sold = Gross profit

$150,000 ! X = $ 45,000

X = $105,000

Cost of goods available for sale:

Cost of goods available for sale ! Ending inventory = Cost of goods sold

Y ! $13,000 = $105,000

Y = $118,000

Beginning inventory:

Beginning inventory + Purchases and freight-in = Cost of goods available for sale

Z + $110,000 = $118,000

Z = $ 8,000

(5 min.) **DE 19-10**

Gemz		
Cost of Goods Sold Computation		
Cost of goods sold:		
Beginning inventory		$ 3,000
Purchases	$30,000	
Freight-in	2,500	32,500
Cost of goods available for sale		35,500
Ending inventory		(5,500)
Cost of goods sold		$30,000

(5 min.) **DE 19-11**

Top-Flight		
Income Statement		
Year Ended December 31, 20X2		
Sales revenue		$65,000
Cost of goods sold:		
Beginning finished goods inventory	$ 6,000	
Cost of goods manufactured	35,000	
Cost of goods available for sale	41,000	
Ending finished goods inventory	(8,000)	
Cost of goods sold		33,000
Gross profit		32,000
Operating expenses:		
Sales salary expense	3,000	
Delivery expense	5,000	
Administrative expense	2,000	10,000
Operating income		$22,000

Note: Students may answer this question using algebra, without preparing an income statement.

(5-10 min.) **DE 19-12**

Top-Flight			
Schedule of Cost of Goods Manufactured			
Year Ended December 31, 20X2			
Beginning work in process inventory			$ 2,000
Add: Direct materials used:			
Beginning materials inventory	$ 9,000		
Purchases of direct materials	35,000		
Available for use	44,000		
Ending materials inventory	(22,000)		
Direct materials used		$22,000	
Direct labor		19,000	
Manufacturing overhead (total)		12,000	
Total manufacturing costs incurred during year			53,000
Total manufacturing costs to account for			55,000
Less: Ending work in process inventory			(5,000)
Cost of goods manufactured			$50,000

Note: Some students may answer this question using algebra, without preparing a new schedule of the cost of goods manufactured.

(5 min.) **DE 19-13**

Jell's	
Total Manufacturing Overhead Computation	
Manufacturing overhead:	
Ink for printing shoe boxes	$ 100
Plant depreciation expense	10,000
Plant foreman's salary	2,000
Plant janitor's salary	1,000
Oil for manufacturing equipment	25
Total manufacturing overhead	$13,125

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

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

The plastic for the shoes is a direct material, not manufacturing overhead.

(5 min.) **DE 19-14**

Mountain Gear, Inc.		
Computation of Direct Materials Used		
Direct materials used:		
Beginning materials inventory		$ 4,000
Purchases of direct materials	$25,000	
Freight-in	200	25,200
Available for use		29,200
Ending materials inventory		(1,500)
Direct materials used		$27,700

(5-10 min.) DE 19-15

Total manufacturing costs are the sum of:

- direct materials
- direct labor
- manufacturing overhead

In Exhibit 19-12, this sum equals $45,000. This is the amount spent on materials, labor, and manufacturing overhead this year. The cost of goods manufactured ($42,000 from Exhibit 19-12) is *not* the same as total manufacturing costs incurred this year ($45,000).

This $3,000 difference between *manufacturing costs* and the *cost of goods manufactured* can be explained as follows: The cost of goods manufactured is the cost of the goods *finished* this year. The cost of goods manufactured therefore *does not* include the cost of work done this period to start the ending inventory ($5,000). It *does* include costs incurred in the prior period to start what was last period's ending inventory and is this period's beginning inventory ($2,000).

Note: You may want to go into a little more detail in class discussion:

In Exhibit 19-12, the cost of goods manufactured is $42,000. $2,000 of this was incurred in the prior period to start the beginning work in process inventory. So $42,000 ! $2,000 = $40,000 of this cost of goods manufactured (which can also be computed as $45,000 current manufacturing costs less $5,000 ending work in process inventory) is current period costs used to: (1) finish the beginning inventory, and (2) start and finish some new goods during the year.

(5 min.) DE 19-16

X-Treme is a *merchandiser*, because it has a single inventory account.

Y-Not? is a *service* company, because it has no inventory.

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

(5 min.) DE 19-17

X-Rays will most likely be hurt if it does not also acquire online sales capability:

- Growth may slow as potential new customers bypass X-Rays in favor of SunStop because Sunstop offers more ways to purchase sunglasses.
- X-Rays' sales may even decline if its present customers decide it is more convenient (or less expensive) to order on the Web from SunStop.
- If SunStop reaps cost savings from Web-based sales, it could undercut X-Rays' prices, thereby luring away even more customers.

Note: Students' answers will vary.

(5 min.) DE 19-18

JIT would be more appropriate for Amazon.com, a book, music, and electronics e-tailer. Under JIT, inventory is purchased only as needed to satisfy customer orders. The ability to fill orders quickly and have little inventory left over is a key to profitability in e-business.

In contrast, the production of fine red wines must begin long before customers demand the wine, because fine red wines require aging. One of the goals of JIT is to reduce throughput time—the time between buying raw materials and selling the finished products. This, too, is not appropriate for the production of fine red wines. Finally, rather than becoming obsolete, red wines often increase in value over time. Mouton-Rothschild may want to keep ending inventories of finished wine.

(5-10 min.) DE 19-19

Expected value of additional benefits:

Outcome	Benefits		Probability		Expected value
Moderately successful	$20 million	×	0.90	=	$18 million
Extremely successful	$80 million	×	0.10	=	$ 8 million
					$26 million

Total benefits:

Benefits already realized.....	$170 million
Expected value of additional benefits.....	26 million
Total expected benefits.....	$196 million

Total costs.....over $200 million

The costs of over $200 million exceed the total expected benefits of $196 million. Under these circumstances, the quality program does not appear to have been a worthwhile investment.

(10 min.) DE 19-20

Each of the four ethical standards contributes to maintaining the IMA's (and society's) expectation that management accountants will uphold the highest standards of ethical behavior.

Competence. Without the necessary competence, management accountants will be unable to perform their responsibilities. Even if they do recognize an ethical dilemma, they could lack the competence required to determine all the alternative courses of action and the implications of each alternative.

Confidentiality. Management accountants have access to confidential information. If they do not maintain that confidentiality, their companies could suffer. Their companies would be reluctant to provide access to information, which would prevent management accountants from performing their responsibilities.

Integrity. Employers must have confidence that management accountants have the integrity to apply their skills appropriately.

Objectivity. An important part of management accountants' responsibilities is communicating information and providing reports to senior management. To be able to rely on these reports, management must have confidence that the management accountant is not hiding inconvenient facts or presenting a biased view.

Note: Students' answers may vary.

(5 min.) DE 19-21

a. Providing earnings information to your brother before it is publicly announced violates the *confidentiality* standard.

b. Stealing from your employer is a violation of the *integrity* standard.

c. Skipping continuing education sessions could violate the requirement to maintain *professional competence*. If your company paid for you to attend the conference, skipping the sessions also violates the *integrity* standard.

d. Failing to read the specifications of the software package before purchasing it violates the *competence* standard.

e. Failing to provide job description information to management because you fear it may be used to cut a position in your department violates the *objectivity* standard

T Exercises

(5 min.) E 19-1

a. Financial accounting develops reports for external parties, such as *creditors* and *shareholders*.

b. When managers evaluate the company's performance compared to the plan, they are performing the *controlling* role of management.

c. Companies must follow GAAP in their *financial accounting* systems.

d. *Managers* are decision makers inside a company.

e. *Financial accounting* provides information on a company's past performance.

f. *Management accounting* systems are not restricted by GAAP, but are chosen by comparing the costs versus the benefits of the system.

g. Choosing goals and the means to achieve them is the *planning* function of management.

(15 min.) E 19-2

Reqs. 1 and 2

Gateway, Inc.
Cost Classification

	R & D	Design of Products, Services, or Processes	Production			Marketing	Distribution	Customer Service
			Direct Materials	Direct Labor	Manufacturing Overhead			
Salaries of telephone salespeople						$ 4		
Depreciation on plant and equipment					$52			
Exterior case for computer			$ 6					
Scientists' salaries	$12							
Delivery expense							$ 7	
Hard drives			50					
Rearrange production process		$ 2						
Assembly-line workers' wages				$10				
Technical support hotline								$ 3
1-800 (toll-free) line for customer orders						1		
Total costs	$12	$ 2	$56	$10	$52	$ 5	$ 7	$ 3

Req. 3

Total inventoriable product costs:

Direct materials	$ 56
Direct labor	10
Manufacturing overhead	52
Total inventoriable product cost	$118

Reqs. 1 and 2

	Target Cost Classification					
	R & D	Design of Products, Services, or Processes	Purchases of Merchandise Inventory	Marketing	Distribution	Customer Service
Research on adding travel agency service	$ 400					
Purchases of merchandise			$50,000			
Rearranging store layout		$1,500				
Newspaper advertisements				$10,000		
Depreciation expense on delivery trucks					$2,000	
Payment to consultant for advice on location of new store	2,500					
Freight-in			3,000			
Salespersons' salaries				8,000		
Customer complaint deptartment						$800
Total	$2,900	$1,500	$53,000	$18,000	$2,000	$800

Req. 3

The total inventoriable product costs are the $50,000 of purchases plus the $3,000 freight-in = $53,000.

(10 min.) E 19-4

a. *Service companies* do not have tangible products intended for sale.

b. *Merchandising companies* resell products they previously purchased ready-made from suppliers.

c. *Manufacturing companies* produce their own inventory.

d. *Merchandising companies* typically have a single category of inventory.

e. *Manufacturing companies* use their workforce and equipment to transform raw materials into new finished products.

f. Swaim, a company based in North Carolina, makes furniture. Partially completed sofas are *work in process inventory* . Completed sofas that remain unsold in the warehouse are *finished goods inventory* . Fabric and wood are classified as *materials inventory* .

g. For Kellogg's, corn, cardboard boxes, and waxed paper liners are classified as *materials inventory* .

(10 min.) E 19-5

Boyds		
Current Assets		
Current assets:		
Cash		$ 19,000
Accounts receivable		75,000
Inventories:		
Materials inventory	$10,000	
Work in process inventory	42,000	
Finished goods inventory	72,000	
Total inventories		124,000
Prepaid expenses		6,000
Total current assets		$224,000

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

Strike Marine Company			
Schedule of Cost of Goods Manufactured			
Beginning work in process			
inventory			$ 42,000
Add: Direct materials used:			
Beginning materials inventory	$ 22,000		
Purchases of materials	78,000		
Available for use	100,000		
Ending materials inventory	(28,000)		
Direct materials used		$72,000	
Direct labor		82,000	
Manufacturing overhead:			
Indirect labor	$ 15,000		
Insurance on plant	9,000		
Depreciation - plant			
building and equipment	16,000		
Repairs and maintenance - plant	4,000	44,000	
Total manufacturing costs			
incurred during the year			198,000
Total manufacturing costs to			
account for			240,000
Less: Ending work in process			
inventory			(30,000)
Cost of goods manufactured			$210,000

Strike Marine Company	
Schedule of Cost of Goods Sold	
Beginning finished goods inventory	$ 18,000
Cost of goods manufactured*	210,000
Cost of goods available for sale	228,000
Ending finished goods inventory	(25,000)
Cost of goods sold	$203,000

*From schedule of cost of goods manufactured.

(15-20 min.) **E 19-7**
(continues E 19-6)

Strike Marine Company		
Income Statement		
Year Ended 20X5		
Sales revenue (28,000 × $14)		$392,000
Cost of goods sold:		
Beginning finished goods inventory	$ 18,000	
Cost of goods manufactured		
(Exercise 19-6)	210,000	
Cost of goods available for sale	228,000	
Ending finished goods inventory	(25,000)	
Cost of goods sold		203,000
Gross profit		189,000
Operating expenses:		
Marketing expenses	$ 77,000	
General and administrative expenses	29,000	106,000
Operating income		83,000
Income tax expense		30,000
Net income		$ 53,000

Note: Students may simply use the $203,000 cost of goods sold computation from E 19-6, rather than repeating the details of the computation here.

(15-20 min.) **E 19-8**

Alon Plastics				
Gross Profit Computation				
Sales revenue				$473,000
Cost of goods sold:				
Beginning finished				
goods inventory			$ 91,000	
Cost of goods				
manufactured:				
Beginning work in				
process inventory		$ 52,000		
Direct materials used	$ 64,000			
Direct labor	111,000			
Manufacturing				
overhead	51,000			
Total manufacturing				
costs incurred				
during the period		226,000		
Total manufacturing				
costs to account for		278,000		
Ending work in				
process inventory		(40,000)		
Cost of goods				
manufactured			238,000	
Cost of goods				
available for sale			329,000	
Ending finished goods				
inventory			(107,000)	
Cost of goods sold				222,000
Gross profit				$251,000

(10 min.) E 19-9

a. To account for uncertainty in the amounts of future costs and benefits, we compute the *expected value* by multiplying the probability of each outcome by the dollar value of that outcome.

b. To make a cost-benefit decision today, we must find the *present value* of the costs and benefits that are incurred in the future.

c. The goal of *TQM* is to delight customers by providing them with superior products and services by eliminating defects and waste throughout the value chain.

d. Most of the costs of adopting JIT, expanding into a foreign market, or improving quality are incurred in the *present* , but most of the benefits occur in the *future* .

e. *Throughput time* is the time between buying raw materials and selling the finished products.

f. The main purpose of *North American Free Trade Agreement (NAFTA)* is to loosen trade restrictions and promote trade among the United States, Canada, and Mexico.

g. Firms adopt *e-commerce* to conduct business on the Internet.

(10 min.) E 19-10

Req. 1

Total costs of adopting JIT:

Employee training	$27,000
Streamline plant's production process	49,500
Supplier identification	8,000
Total costs	$84,500

Req. 2

Benefits of adopting JIT:

Savings in warehouse expenses	$113,000
Lower spoilage costs	67,800
Total benefits	$180,800

Req. 3

Expected total benefits	$180,800
Expected total costs	(84,500)
Excess of benefits over costs	$ 96,300

Cool Cuts should adopt JIT because the expected benefits exceed the costs.

(15 min.) E 19-11

Req. 1

While the amount is not large now, the repeated nature of the thefts means that they add up over time. Also, the repeated nature of the thefts increases the severity of Cory Loftus' unethical behavior. A new employee who has engaged in repeated thefts is unlikely to become a valued and trusted employee.

As controller, Mary Gonzales probably hired Cory, and she is also responsible for the lack of controls that permitted a new employee to commit this theft. However, this is no excuse for Cory's unethical behavior. The controller should think carefully whether it is in her or the company's interest to keep Cory. This incident also reflects poorly on Mary's competence. She needs to learn from the experience and supervise the next bookkeeper more carefully.

Req. 2

The new information makes Mary's decision more complex. Being new, she may want to discuss the situation with the company president. Even if the bookkeeper believed he was just "borrowing" the money, his behavior is still unethical. It will probably be difficult to confirm whether or not Cory did in fact repay money he had taken in the past. Another possibility is that Cory did repay the amounts and the previous controller turned a blind eye. Unless Mary can obtain additional clarifying information, one alternative would be to indicate to Cory that this behavior will not be tolerated in the future and to establish bettter controls and closer supervision.

Note: Students' responses will vary.

(25 min.) E 19-12

a.

Revenues	$27,000
Cost of goods sold	16,900
Gross profit	$10,100

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

Beginning materials inventory	$ 1,000
Purchases of materials	9,000
Available for use	10,000
Ending materials inventory	(2,000)
Direct materials used	$ 8,000

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

Beginning work in process inventory		$ 0
Direct materials used	$8,000	
Direct labor	3,000	
Manufacturing overhead	7,000	18,000
Total manufacturing costs to account for		18,000
Ending work in process inventory		(1,000)
Cost of goods manufactured		$17,000

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

Beginning finished goods inventory	$ 4,000
Cost of goods manufactured (from above)	17,000
Cost of goods available for sale	21,000
Ending finished goods inventory	(4,100)
Cost of goods sold (from part A)	$16,900