

1

Cost Accounting: Information for Decision Making

Solutions to Review Questions

1-1.

Among the goals of an organization, a central one is to create and increase value. Cost accounting systems are designed to provide information to decision makers in the organization with the information they need to accomplish this goal. Therefore, the designers of the cost accounting system need to understand how value is created in the organization in order to design systems for their particular organization.

1-2.

Financial accounting is designed to provide information about the firm to external users. External users include investors, creditors, government authorities, regulators, customers, competitors, suppliers, labor unions, and so on. Cost accounting systems are designed to provide information to internal users (managers).

This difference is important, because it affects the design of the systems. Financial accounting systems are based on standards or rules. This allows the user to compare the results of different firms. Managerial accounting systems do not require rules. Each firm is free to develop managerial accounting systems that best serve the needs of the decision makers (managers).

1-3.

- B Providing cost information for financial reporting
- A Identifying the best store in a chain
- C Determining which plant to use for production

1-4.

The value chain is the set of activities that transforms raw resources into the goods and services end users purchase and consume. The supply chain includes the set of firms and individuals that sells goods and services to the firm. The distribution chain is the set of firms and individuals that buys and distributes goods and services from the firm.

1-5.

The customers of cost accounting are managers, from plant managers to the CEO.

1-6.

Value-added activities are activities that customers perceive as adding utility to the goods or services they purchase. Nonvalue-added activities do not add value to the goods or services. By classifying costs this way, the cost accounting system can help the manager identify areas (processes) that can be improved, lowering costs and adding value to the organization.

1-7.

Answers will vary, but should include some of the following:

Title	Major Responsibilities and Major Duties
Chief financial officer (CFO)	<ul style="list-style-type: none">• Manages entire finance and accounting function
Treasurer.....	<ul style="list-style-type: none">• Manages liquid assets• Conducts business with banks and other financial institutions• Oversees public issues of stock and debt
Controller.....	<ul style="list-style-type: none">• Plans and designs information and incentive systems
Internal auditor	<ul style="list-style-type: none">• Ensures compliance with laws, regulations, and company policies and procedures• Provides consulting and auditing services within the firm
Cost accountant	<ul style="list-style-type: none">• Records, measures, estimates, and analyzes costs• Works with financial and operational manager to provide relevant information for decisions

1-8.

No. Sarbanes-Oxley is a law and violations of it are legal issues. Codes of ethics are necessary to help accountants and managers identify situations that might develop into ethical conflicts, understand what they could do in these situations, and to learn what to do when they believe that an ethical violation has occurred.

Solutions to Critical Analysis and Discussion Questions

1-9.

We would not agree. The role of accountants is to help manage the organization. Part of that role is to report results. Another part is to design systems that assist other managers in making decisions to improve performance. This role requires that accountants understand how value is created in their organizations.

1-10.

The calculation of cost depends on the decision being made. Therefore, the first question to ask is, "What decision (or decisions) are you trying to make?"

1-11.

Costs that you could ask to be reimbursed might include the fuel, a share of the maintenance costs, "wear and tear," or depreciation, and insurance. To avoid disagreements, it would be necessary to negotiate an agreement (even if only informally) between you and your friend considering all factors. For example, you might agree that she should pay for the gas and any other supplies (e.g., oil) needed on the trip.

If you are going along, you might change the agreement so that you split these costs. Alternatively, you might say that because you are going anyway, she can ride along for nothing.

1-12.

Although it is not the "job" of accounting to determine strategy, accounting provides important information to those who do determine strategy. If the cost accounting system provides inaccurate information, the firm may end up with an unintended strategy, because managers are making decisions based on faulty information.

1-13.

Executive performance evaluation systems are designed for a specific company's needs. The systems should be flexible to adapt to the circumstances that exist in that company. A common set of accounting principles would tend to reduce flexibility and usefulness of these systems. As long as all parties know the accounting basis used by the system, the exact rules can be designed in whatever manner the parties deem appropriate.

1-14.

Although not-for-profit organizations are not seeking to make a profit, they must remain financially viable to accomplish their missions. Cost accounting information can help managers of not-for-profit organizations by highlighting the costs of various activities, identifying sources of revenue, and measuring performance of managers. In terms of organizational survival, cost accounting information can be just as (or more) important for a not-for-profit as for a for-profit firm.

1-15.

Airlines are characterized by the need to own a substantial amount of capacity costs. Managers at airlines require very sophisticated load management information that predicts the number of passengers flying on a particular route on a particular day. If they set a single price that would cover their costs given a certain number of passengers, they risk flying with empty seats. Once the plane takes off, they cannot sell the seat. Therefore, they need a flexible pricing system. Such a system requires detailed cost information about passengers and aircraft.

The costs are unlikely to be much different among passengers. The variable costs are relatively low (per passenger) and may include food and beverage, some baggage handling cost, some ticket processing costs, and, depending on the plane, a (very) small amount of fuel.

1-16.

The cost accounting issues for Hostess Brands are the same as for The AM Bakery in the sense that managers at Hostess Brands want the same kind of information as Adam: what are the costs of products, who is performing the best, and so on.

The cost accounting issues are different in the size and complexity of the operations at Hostess compared to The AM Bakery.

1-17.

In decision-making, managers or supervisors may wish to take actions that they believe will increase the firm's value that are difficult to justify given available information. Often, these situations arise when managers are using their intuition and their experience to identify new business opportunities and cannot point to data that support their views. For example, a marketing manager might view investment in a new advertising campaign as necessary for remaining competitive even though it appears to increase costs. Because the controller does not have expertise in this area, she cannot verify the information the marketing manager is using.

In a few cases, however, a marketing manager may wish to pursue a project because of personal reasons (for example, because he was the champion of the product), and hopes to have an economic analysis to justify additional advertising support. In these situations, care must be taken to ascertain the economic merits of the plan, and, if the plan cannot be justified on economic grounds, the manager must make the case for the project on another basis.

The final responsibility for the decision rests with the manager. Therefore, plans that cannot be justified on a cost analysis basis may still be adopted at the discretion of operating management. The controller should be clear that the project is justified on a basis other than (easily measured) costs.

The controller is charged with the responsibility of making certain that plans are executed in an optimal and efficient manner. In some cases this may be viewed as placing restrictions on management actions. Under these circumstances the marketing manager may view the accounting function as placing too great a constraint on him while the controller may view the marketing manager as attempting to circumvent the rules.

1-18.

This is a tricky question. The problem is that if each firm tries to minimize its own cost, some of the necessary processes might not be done satisfactorily. For example, if every firm decides not to hold inventory as a way to lower costs, customers might not be able to obtain products in a timely manner and look elsewhere. The goal is to increase value, not minimize costs.

In addition, as illustrated in the Business Application, it might lower cost if part of the value creation is moved from one firm in the chain to another through in-sourcing or outsourcing.

1-19.

The purpose of accounting is to communicate the economic reality of the firm. This requires estimates of the effect of events not yet realized. Always choosing the most pessimistic outcome does not communicate the reality any more than always choosing the most optimistic outcome. We want accountants to use their best judgment on what will happen. A problem arises when the judgment is affected by a desire to present a particular result.

1-20.

The cost accountant provides information to decision makers in the firm. He or she needs to provide the best information possible, given the costs. As information technology improves, the cost of information falls and the quality of information the cost accountant can provide improves.

1-21.

Studying cost accounting will most likely increase Adam's chances of success with his store. As illustrated in the chapter, he has a better idea of the costs of his business and the financial status of its different operations. Of course, it cannot guarantee success. A successful business depends on many things, including identifying the right products, efficient operations, and good marketing. Cost accounting helps managers make better decisions about these aspects, but cannot forecast trends or overcome bad managerial decision-making.

1-22.

There are two types of costs the airline or hotel incur with such upgrades. One type of cost results from the incremental resources that are a part of the upgraded service (perhaps a free meal on the airline or the costs of cleaning a larger room). These costs will be shown in the accounting records. In addition to these “direct” costs, there are “opportunity” costs. These costs arise when customers purchase a economy airline fare or smaller room in the hopes of an upgrade. If these customers would have purchased a first-class airfare or a more expensive room, this represents a lost opportunity. These opportunity costs will not be recorded in the accounting records.

Solutions to Exercises

1-23. (10 Min.) Value Chain and Classification of Costs: Apple Inc.

Cost	Stage in the Value Chain
Programmer costs for a new operating system.	4. Research & Development
Costs to ship computers to customers.	6. Distribution
Call center costs for support calls.	3. Customer Service
Salaries for employees working on new product designs.	5. Design
Costs to purchase advertising in university stores.	1. Marketing
Costs of memory chips to make computers.	2. Production

1-24. (10 Min.) Value Chain and Classification of Costs: Pfizer Inc.

Cost	Stage in the Value Chain
Salaries for employees to develop most efficient dropper to administer drug.	2. Design
Costs of chemicals to make the drug.	5. Production
Costs to visit doctors to explain value of drug.	4. Marketing
Expenses to deliver product to customers.	6. Distribution
Laboratory experiments to evaluate drug effectiveness.	3. Research and development
Employee costs to work with hospitals to ensure adequate delivery supplies.	1. Customer Service

1-25. (10 Min.) Value Chain and Classification of Costs: Tesla, Inc.

Cost	Stage in the Value Chain
Engineer costs to develop optimal battery.	6. Research & Development
Costs for employees to develop grill logo.	3. Design
Cost to assemble cars.	1. Production
Costs to attend the Detroit Auto Show.	4. Marketing
Costs to ship cars to sales centers.	5. Distribution
Call center to handle maintenance calls from drivers.	2. Customer Service

1-26. (5 Min.) Supply Chain and Supply Chain Costs: Coastal Cabinets.

It is important that costs are minimized in the supply chain. Because it is cheaper for Coastal Cabinets to carry the inventory, the resolution should result in Coastal Cabinets carrying the inventory. You might suggest that the two firms share the inventory savings through price increases or other contractual agreements.

1-27. (10 Min.) Accounting Systems: McDonald's.

Decision Maker	System
a. Investor*	Financial (F)
b. Marketing manager	Cost (C)
c. Competitor*	Financial (F)
d. Labor organization*	Financial (F)
e. Advertising manager	Cost (C)

*Note that all these decision makers might like information from the cost accounting system, but they would be unlikely to be given access to this information.

1-28. (10 Min.) Accounting Systems: Ford Motor Company.

Answers will vary, but examples include the following.

Manager	Example Decision
a. Plant manager	How to layout the plant.
b. Purchasing manager	Which supplier to use.
c. Quality supervisor	Where to focus quality improvement efforts.
d. Personnel manager	Where to recruit workers.
e. Maintenance supervisor .	Whether to repair or replace a machine.

1-29. (10 min.) Cost Data for Managerial Purposes: Delta Air Lines.

- a. Differential costs are costs that would change, which are the labor costs in this situation. Other costs would presumably not be affected by the change in labor. Other issues include the quality and dependability of the new approach.

Differential costs next year are \$0.60 (= \$2.00 – \$1.40) calculated as follows:

	Labor Cost	
	Old Method	New Method
Next year	\$2.00	\$1.40 [= (1 – .30) x \$2.00]

- b. Management would use the information to help decide whether to use the new method. Management would also want to know the effect of quality (lost bags, delays in delivering bags to the baggage claim, etc.).

1-30. (20 Min.) Cost Data for Managerial Purposes: Betty’s Fashions.

Considering the following costs as differential shows that closing the City Division will lower profits for the chain.

Betty’s Fashions, City Division
Divisional Income Statement
Differential Revenues and Costs
For the Year Ending January 31

Sales revenue	<u>\$ 8,600,000</u>	Differential ^a
Costs		
Advertising	350,000	Differential ^b
Cost of goods sold	4,300,000	Differential ^a
Divisional administrative salaries	580,000	Differential
Selling costs (sales commissions)	1,160,000	Differential ^a
Rent	1,470,000	Differential
Share of corporate administration	<u> —0—</u>	Not differential
Total costs	<u>\$ 7,860,000</u>	
Net differential gain before income tax ...	\$ 740,000	
Tax expense at 40% rate	<u>296,000</u>	Differential
 Net differential gain from store	 <u>\$ 444,000</u>	

^a These revenues and costs are differential if the sales (and the associated cost of sales) will be lost to the chain. If customers go to other stores in the chain when the City Division is closed, these revenues and costs will not be differential.

^b If some of the advertising is “brand” advertising that benefits all stores, some of the advertising costs may not be differential.

Before making the decision, it would be important to determine whether closing the City stores will affect the sales at the Mall stores. For example, if people value the convenience of being able to return items during the work week, they might be less likely to shop at the Mall stores. Another possibility is that shoppers see items during the week at the City stores and go into the Mall stores on the weekend.

1-31. (20 Min.) Cost Data for Managerial Purposes: State University Business School.

Considering the following costs as differential shows that dropping the BBA degree will lower profits for the school.

State University Business School
Degree Income Statement
Differential Revenues and Costs
For the Academic Year Ending June 30

Revenue	\$ 6,000,000	Differential ^a
Costs		
Advertising – BBA program	225,000	Differential ^b
Faculty salaries	3,060,000	Differential ^a
Degree operating costs	390,000	Differential ^a
Building maintenance	555,000	Differential ^a
Classroom costs	1,275,000	Differential ^a
Allocated school administration costs	<u> –0–</u>	Not differential
Total costs	<u>\$ 5,505,000</u>	
Net differential gain from BBA program..	<u>\$ 495,000</u>	

^a These revenues and costs are differential to the school, but might not be to the university if students will transfer to other programs and if the faculty and buildings will continue to be maintained by the university.

^b If some of the advertising is “brand” advertising that benefits all programs, some of the advertising costs may not be differential.

Before making the decision, it would be important to determine whether dropping the BBA program will affect the demand for the other degree programs. In addition, it might be important to estimate the impact on philanthropic giving if there is a difference in this behavior among those in the BBA program compared to those in other programs.

1-32. (20 Min.) Cost Data for Managerial Purposes: State University Business School.

a. The following differential analysis shows that the combined contribution of the BBA program will be positive.

State University Business School
Degree Income Statement
Differential Revenues and Costs, BBA Programs
For the Academic Year Ending June 30

Revenue	\$ 6,000,000 x 2	<u>\$12,000,000</u>
Costs		
Advertising – BBA program	225,000 + (225,000 x 3)	900,000
Faculty salaries	3,060,000 x 2	6,120,000
Degree operating costs	390,000 x 1.5	585,000
Building maintenance	unchanged	555,000
Classroom costs	unchanged	1,275,000
Classroom rental	given	300,000
Differential school administration costs	given	<u>30,000</u>
Total costs		<u>\$9,765,000</u>
Net gain from BBA programs		<u>\$ 2,235,000</u>

b. The Dean should consider whether there are sufficient applicants with necessary qualifications. Similarly, the Dean should ensure that there is sufficient faculty to expand the program to this extent.

1-33. (20 Min.) Cost Data for Managerial Purposes—Budgeting

	A	B	C	D	E
1	THE AM BAKERY				
2	Bakery Sales				
3	Budgeted Costs				
4	For the Month Ending October 31				
5		Actual	Budgeted		
6		(August)	(October)		
7	Ingredients				
8	Flour	\$ 3,900	\$ 4,680		(= \$3,900 * 1.2)
9	Butter	3,500	4,200		(= \$3,500 * 1.2)
10	Oil	1,700	2,040		(= \$1,700 * 1.2)
11	Fruit	1,300	1,560		(= \$1,300 * 1.2)
12	Nuts	900	1,080		(= 900 * 1.2)
13	Chocolate	800	960		(= \$800 * 1.2)
14	Other	<u>400</u>	<u>480</u>		(= \$400 * 1.2)
15	Total ingredients	\$ 12,500	\$ 15,000		
16	Labor				
17	Channel manager	\$ 4,500	\$ 5,000		(given)
18	Other	10,700	13,375		(= \$10,700 * 1.25)
19	Utilities	2,400	2,300		(No change)
20	Rent	3,600	3,600		(No change)
21	Marketing	<u>200</u>	<u>200</u>		(No change)
22	Total bakery costs	<u>\$ 33,900</u>	<u>\$ 39,475</u>		
23					
24	Revenues	\$ 52,200	\$ 62,640		(= \$52,200 * 1.2)
25					

1-34. Trends in Cost Accounting

Answers will vary.

- Activity-based costing might be used in the Design component to help designers identify designs that will lead to less costly production requirements.
- Benchmarking might be used in Purchasing to ensure the firm is not paying too much for inputs.
- Cost of quality might be used in Customer Service to monitor the costs associated with producing defective units.
- Customer relationship management might be used in Marketing to identify profitable customers.
- Lean accounting might be used in production to help identify and avoid waste.

1-35. Trends in Cost Accounting

<u>Title</u>	<u>Responsibility</u>
<u>5</u> CFO	Signs off on financial statements.
<u>3</u> Treasurer	Determines where to invest cash balances.
<u>4</u> Controller	Maintains accounting records.
<u>1</u> Internal auditor	Ensures procurement rules are followed.
<u>2</u> Cost accountant	Evaluates costs of products.

1-36. (15 Min.) Ethics and Channel Stuffing: Continental Condiments.

- a. As a management accountant, Maria has a responsibility to perform her professional duties with competence in accordance with relevant laws and regulations. Channel stuffing borders on illegal activity, especially if it is done to defraud investors by presenting results that are not achieved. As a professional, she must communicate both favorable and unfavorable information in an objective and fair manner. Thus, she cannot simply ignore the fact that the managers are engaging in this behavior.
- b. Maria should first follow Continental's established policy on the resolution of ethical conflict (assuming there is one!). If there isn't an established policy Maria should confront the next higher level of management that she believes is not involved in the marketing scheme. This could be the Controller or the CFO. If the matter remains unresolved she should take the issue to the Audit Committee and the Board of Directors. Perhaps Maria should seek a confidential discussion with an objective advisor, such as her personal attorney. When all levels of internal review have been exhausted without satisfactory results, Maria should resign and submit an informative memorandum to the chairman of the Board of Directors.

1-37. (15 Min.) Ethics and Cost Analysis: State University Business School.

- a. As a management accountant, Jon has a responsibility to perform his professional duties with competence in accordance with relevant laws and regulations. Choosing a location in which the decision maker has a financial interest when a lower cost equivalent location is unethical and may be illegal. As a professional, he must communicate both favorable and unfavorable information in an objective and fair manner. Thus, he cannot simply ignore the fact that the dean is engaging in this behavior.
- b. Jon should first follow the School's (or University's) established policy on the resolution of ethical conflict (assuming there is one!). If there isn't an established policy Jon should confront the next higher level of management (the University CFO for example) that he believes is not involved in the decision. If the matter remains unresolved he should take the issue to the oversight board for the University (Regents or Trustees, for example).

Solutions to Problems

1-38. (15 Min.) Responsibility for Ethical Action: Giant Engineering.

- a. As a management accountant Dewi has a responsibility to perform her professional duties with competence in accordance with relevant laws and regulations. Clearly, overbilling the federal government is a violation of the law. As such, Dewi might have both a legal and ethical responsibility to take some action. As a professional, she must communicate both favorable and unfavorable information in an objective and fair manner. Thus, she cannot simply ignore the fact that Giant is involved in illegal contracting activities.
- b. The first possible course of action is to discuss the situation with the controller. This is an appropriate approach to the problem. Always take a problem to your immediate supervisor first. If the controller indicates that he or she is aware of the situation and that Dewi should not worry about it, then she should take the matter up with her controller's superior. Dewi should move up the layers of management until someone is concerned and will deal with the problem. She should also consult her personal attorney to learn her legal rights and responsibilities in this situation.

As for the second course of action, the proper authorities should be notified by someone in the company. The local newspaper, however, is not the proper authority. Dewi should discuss the matter with the Board of Directors only after exhausting possibilities of discussing the matter with internal management.

1-39. (20 Min.) Cost Data for Managerial Purposes: Imperial Devices.

This problem demonstrates the ambiguity of cost-based contracting and, indeed, the measurement of “cost.” This problem can stimulate a lively discussion in class.

Recommended prices may range from the \$324 suggested by the state government to the \$522 charged by Imperial Devices. The key is to negotiate the cost-based price prior to the signing of the contract. Considerations that affect the base costs are reflected in the following options:

Options:

- A. Only the differential production costs could be considered as the cost basis.
- B. The total cost per device for normal production of 60,000 devices could be used as the cost basis.
- C. The total cost per device for production of 66,000 devices, excluding marketing costs, could be used as the cost basis.
- D. The total cost per device for production of 66,000 devices, including marketing costs, could be used as the cost basis.

Costs	Unit Cost Options (One Unit = One Device)				
	A	B	C	D	
Materials (variable)...	\$75.00	\$75.00	\$75.00	\$75.00	\$75.00
Labor (variable)	150.00	150.00	150.00	150.00	150.00
Supplies (variable)....	45.00	45.00	45.00	45.00	45.00
Indirect costs (fixed) .	2,700,000	N/A	45.00 ^a	40.91 ^b	40.91
Marketing (variable)..	30.00	N/A	30.00	N/A	30.00
Administrative (fixed)	5,400,000	<u>N/A</u>	<u>90.00</u> ^c	<u>81.82</u> ^d	<u>81.82</u>
Per device cost basis		\$270.00	\$435.00	\$392.73	\$422.73
Per device price (Cost + 20%)		<u>\$324.00</u>	<u>\$522.00</u>	<u>\$471.28</u>	<u>\$507.28</u>

^a \$45.00 = \$2,700,000 ÷ 60,000 units.

^b \$40.91 = \$2,700,000 ÷ 66,000 units.

^c \$90.00 = \$5,400,000 ÷ 60,000 units.

^d \$81.82 = \$5,400,000 ÷ 66,000 units.

We believe the most justifiable options exclude marketing costs and reflect the potential production level of 66,000 devices. These are Options A and C. (As stockholders in Imperial Devices, we would prefer Option C.) Also, depending on the resolution of the term “cost,” we may want to consider whether the 20 percent markup in the next contract is sufficient.

1-40. (20 Min.) Cost Data for Managerial Purposes: Marco and Jenna.

- a. Answers will vary. The \$0.13 that Marco proposes would be the incremental costs of the trip. The \$0.56 rate used by the local agency almost certainly includes depreciation on the car, some of which is likely to occur regardless of the miles driven.
- b. If Jenna was not going to take the trip, then some of the “wear and tear” costs, for example for tires, would be avoided. Therefore, it would make sense to include these costs in the sharing. (Measuring these costs is more difficult.) However, as noted above, some of the costs in the IRS rate will be incurred regardless of the miles driven.

1-41. (20 Min.) Cost Data for Managerial Purposes: T-Comm.

This problem demonstrates the ambiguity in measuring “costs.”

South Division’s controller included the “per unit” fixed costs, which were calculated for allocation purposes under normal production volume, when he or she calculated the per unit cost of the additional production. The controller charged North Division on that basis, ignoring the differential costs as a basis for interdivision sales.

Possible options available are as follows:

- A. Use the full per unit cost for normal production of 2,400 units.
- B. Use only differential costs as the cost basis.
- C. Use differential costs plus a share of fixed costs, based on actual production volume (with North’s order) of 3,000 units.

Costs	Unit Cost Options:		
	A	B	C
Direct materials (variable) \$ 200 ^a	\$ 200	\$ 200	\$ 200
Direct Labor (variable) 96 ^b	96	96	96
Other variable costs..... 64 ^c	64	64	64
Fixed costs 2,016,000	<u>840</u> ^d	<u>N/A</u>	<u>672</u> ^e
Per unit cost.....	\$ 1,200	\$ 360	\$ 1,032
Cost plus 15%	1,380	414	1,186.80
Total price (600 units).....	<u>\$828,000</u>	<u>\$248,400</u>	<u>\$712,080</u>

- a \$200 = \$480,000 ÷ 2,400 units.
- b \$96 = \$230,400 ÷ 2,400 units.
- c \$64 = \$153,600 ÷ 2,400 units.
- d \$840 = \$2,016,000 ÷ 2,400 units.
- e \$672 = \$2,016,000 ÷ 3,000 units.

If fixed costs are not differential and South has no alternative uses of the excess capacity (between 3,000 units available capacity and 2,400 units used), then Option B is the most defensible. Options A and C overstate the differential cost of production which could inappropriately affect North Division’s decisions about buying internally or externally, or about pricing its product, among other decisions. (If option B is used and managers forget that there are fixed costs of production, then it is also possible that North Division’s pricing decision could be affected inappropriately.)

1-42. (20 Min.) Cost Data for Managerial Purposes: Campus Package Delivery.

a.

	A	B	C	D	E
1	Campus Package Delivery				
2	Income Statement				
3		Status Quo:	Alternative:		
4		No Express Service	With Express Service		Difference
5		(1)	(2)		(3) = (2) - (1)
6					
7	Sales revenue.....	\$ 152,000	\$ 202,000	\$ 50,000	(given)
8	Costs				
9	Vehicle leases	60,000	67,500	7,500	(given)
10	Labor.....	48,000	72,000	24,000	(= 50% x \$48,000)
11	Utilities.....	8,000	12,000	4,000	(= 50% x \$8,000)
12	Rent.....	16,000	19,200	3,200	(= 20% x 16,000)
13	Other costs.....	8,000	9,600	1,600	(= 20% x \$8,000)
14	Manager's salary.....	24,000	24,000	-0-	
15	Total costs.....	\$ 164,000	\$ 204,300	\$ 40,300	
16	Operating profit (loss).....	\$ (12,000)	\$ (2,300)	\$ 9,700	
17					

- b. The decision to expand and offer the express service results in differential profits of \$9,700, so it is profitable to expand. Note that only differential costs and revenues figured in the decision. The manager's salary did not change, so it did not affect the decision.
- c. Managers need to consider whether the new service will have an affect on their current business (perhaps reducing demand).

1-43. (20 Min.) Cost Data for Managerial Purposes: KC Services.

a.

	A	B	C	D
1	KC Services			
2	Annual Income Statement			
3				
4		Before Dropping	After Dropping	
5		Service	Service	
6				
7	Sales revenue.....	\$ 912,000	\$ 762,000	(Revenues fall by \$150,000)
8	Costs			
9	Equipment leases	\$ 360,000	\$ 306,000	(= .85 x \$360,000)
10	Labor.....	\$ 288,000	244,800	(= .85 x \$288,000)
11	Utilities.....	\$ 48,000	38,400	(= .80 x \$48,000)
12	Rent.....	\$ 96,000	76,800	(= .80 x \$96,000)
13	Other costs.....	\$ 48,000	40,800	(= .85 x 48,000)
14	Manager's salary.....	\$ 120,000	120,000	(No change)
15	Total costs.....	\$ 960,000	\$ 826,800	
16	Operating profit (loss).....	\$ (48,000)	\$ (64,800)	
17				

- b. The decision to drop the lawn service results in a differential loss of \$16,800 [= (\$48,000) – (\$64,800)], so it is not profitable to drop that service. Note that only differential costs and revenues figured in the decision. The manager's salary did not change, so it did not affect the decision.
- c. The manager should consider whether there are other, more profitable uses that the resources could be used for instead of lawn services.

1-44. (20 Min.) Cost Data for Managerial Purposes: B-You

a. The following differential costs would be incurred:

	A	B	C
1	Consultant Labor	\$ 85,000	(Given)
2	Equipment Lease	1,764	(= 5% of \$35,280)
3	Supplies	2,268	(= 10% of \$22,680)
4	Other Costs	2,394	(= 15% of \$15,960)
5	Total Costs	<u>\$ 91,426</u>	
6			

- b. Since acceptance of the contract would result in a decrease of operating profits by \$1,426 (= \$90,000 paid according to the contract – \$91,426 in differential costs), it would seem that the contract should be rejected. Of course, as a practical matter the amount is so small that differential profit probably would not be the deciding factor. Errors in estimation alone could change the decision easily.
- c. Other factors would include (1) whether this will enable the company to get into a new, profitable line of business; (2) what other opportunities the company has for expanding; and (3) whether the contract will provide for more revenues in the future. In short, the company must consider the long run as well as the first year's results.

1-45. (20 Min.) Cost Data for Managerial Purposes: Tom's Tax Services.

a. The following differential costs would be incurred:

	A	B	C	Sheets
1	Labor costs	\$ (60,000)	(Given)	
2	Equipment Lease	(5,040)	(= 10% of \$50,400)	
3	Supplies	(1,620)	(= 5% of \$32,400)	
4	Other Costs	(3,420)	(= 15% of \$22,800)	
5	Total Costs	<u>\$ (70,080)</u>		
6				

- b. Since the addition of the customer would result in an increase of operating profits by \$4,920 (= \$75,000 in revenues from the store – \$70,080 differential costs), Tom could offer to lower the fees by this amount and not lose money on the client.
- c. Other factors would include (1) whether this will lead to demands by other clients for lower fees; (2) what other opportunities the company has for its tax professionals; and (3) whether the business is likely to expand in the future. In short, Tom must consider the long run as well as the first year's results.

1-46. (30 Min.) Cost Data for Managerial Purposes: Gilman's Café.

a. The following is the income for dinner service only:

	A	B	C	D
1	Gilman's Café			
2	Annual Income Statement			
3				
4		Lunch and	Dinner	
5		Dinner Service	Service Only	
6				
7	Sales revenue.....	\$ 675,000	\$ 540,000	(= \$675,000 ÷ 1.25)
8	Costs			
9	Food costs	\$ 196,000	\$ 140,000	(= \$196,000 ÷ 1.40)
10	Labor.....	\$ 270,000	225,000	(= \$270,000 ÷ 1.20)
11	Rent.....	\$ 36,000	36,000	(No change)
12	Utilities.....	\$ 52,500	42,000	(= \$52,500 ÷ 1.25)
13	Other costs.....	\$ 39,100	34,000	(= \$39,100 ÷ 1.15)
14	Manager's salary.....	\$ 60,000	60,000	(No change)
15	Total costs.....	\$ 653,600	\$ 537,000	
16	Operating profit (loss).....	\$ 21,400	\$ 3,000	
17				

Adding the lunch service would increase profit from \$3,000 to \$21,400 based on Sarah's estimates. Based on financial projections she should add the lunch service.

- b. Other factors to consider include (1) whether this will lead to customers switching from dinner to lunch (assuming this was not part of Sarah's estimates); (2) what other restaurants might do (one serving lunch might start offering dinner, for example); and (3) whether the longer opening hours might cause the restaurant to lose some of its appeal.

1-47. (30 Min.) Cost Data for Managerial Purposes: Palmetto Computer Shop.

a. The following is the income for repair service only:

	A	B	C	D
1	Palmetto Computer Shop			
2	Annual Income Statement			
3				
4		Repair and	Repair	
5		Training Service	Service Only	
6				
7	Sales revenue.....	\$ 476,000	\$ 380,800	(= \$476,000 ÷ 1.25)
8	Costs			
9	Parts	\$ 101,200	\$ 92,000	(= \$101,200 ÷ 1.10)
10	Labor.....	195,000	130,000	(= \$195,000 ÷ 1.50)
11	Rent.....	49,000	39,200	(= \$49,000 ÷ 1.25)
12	Utilities.....	39,000	30,000	(= \$39,000 ÷ 1.30)
13	Insurance.....	3,910	3,400	(= \$3,910 ÷ 1.15)
14	Other costs.....	22,500	18,750	(= \$22,500 ÷ 1.20)
15	Total costs.....	\$ 410,610	\$ 313,350	
16	Operating profit (loss).....	\$ 65,390	\$ 67,450	
17				

Adding the training service would decrease profit from \$67,450 to \$65,390 based on Jeff's estimates. Based on financial projections he should not add the training service.

- b. Other factors to consider include (1) whether training will lead to customers using Jeff's repair services (assuming this was not part of Jeff's estimates); (2) what Jeff could make by teaching at the local college; and (3) whether the difference in the estimates is really significant enough to base the decision based on financial estimates.

1-48. (20 Min.) Cost Data for Managerial Purposes—Budgeting

a.

	A	B	C	D	E
1	THE AM BAKERY				
2	Bakery Sales				
3	Actual and Budgeted Costs				
4	For the Month Ending November 30				
5		Actual	Budgeted	Difference	Budget Calculations
6	Ingredients				
7	Flour	\$ 4,950	\$ 4,875	\$ 75	(= \$3,900 * 1.25)
8	Butter	4,600	4,375	225	(= \$3,500 * 1.25)
9	Oil	2,030	2,125	(95)	(= \$1,700 * 1.25)
10	Fruit	1,550	1,625	(75)	(= \$1,300 * 1.25)
11	Nuts	1,200	1,125	75	(= \$900 * 1.25)
12	Chocolate	1,030	1,000	30	(= \$800 * 1.25)
13	Other	<u>460</u>	<u>500</u>	<u>(40)</u>	(= \$400 * 1.25)
14	Total ingredients	\$ 15,820	\$ 15,625	\$ 195	
15	Labor				
16	Channel manager	\$ 5,000	\$ 5,000	\$ -	(Given)
17	Other	14,120	13,910	210	(= \$10,700 * 1.30)
18	Utilities	2,400	2,400	-	(No change)
19	Rent	3,600	3,600	-	(No change)
20	Marketing	<u>200</u>	<u>200</u>	<u>-</u>	(No change)
21	Total bakery costs	<u>\$ 41,140</u>	<u>\$ 40,735</u>	<u>\$ 405</u>	
22					
23	Revenues	\$ 68,000	\$ 67,860	140	(= \$52,200 * 1.30)
24					

b. The three items that we would investigate would be (a) butter; (b) other labor; and, (c) oil. These three have the largest difference between what we actually incurred and the budget. Even though we incurred less cost for the oil than expected, we would still investigate this to understand why. For example, if we are using a lower quality oil or less oil in the bakery goods than budgeted, this might eventually affect sales adversely.

1-49. (20 Min.) Cost Data for Managerial Purposes—Budgeting

a.

	A	B	C	D	E
1	THE AM BAKERY				
2	Bakery Sales				
3	Actual and Budgeted Costs				
4	For the Month Ending December 31				
5		Actual	Budgeted	Difference	Budget Calculations
6	Ingredients				
7	Flour	\$ 8,465	\$ 8,580	\$ (115)	(= \$3,900 * 2.20)
8	Butter	7,680	7,700	(20)	(= \$3,500 * 2.20)
9	Oil	3,800	3,740	60	(= \$1,700 * 2.20)
10	Fruit	3,125	2,860	265	(= \$1,300 * 2.20)
11	Nuts	2,200	1,980	220	(= \$900 * 2.20)
12	Chocolate	1,600	1,760	(160)	(= \$800 * 2.20)
13	Other	850	880	(30)	(= \$400 * 2.20)
14	Total ingredients	\$ 27,720	\$ 27,500	\$ 220	
15	Labor				
16	Channel manager	\$ 5,000	\$ 5,000	\$ -	(Given)
17	Other	24,400	24,610	(210)	(= \$10,700 * 2.30)
18	Utilities	3,125	2,760	365	(= \$2,400 * 1.15)
19	Rent	3,600	3,600	-	(No change)
20	Marketing	210	200	10	(No change)
21	Total bakery costs	\$ 64,055	\$ 63,670	\$ 385	
22					
23	Revenues	\$ 103,200	\$ 104,400	(1,200)	(= \$52,200 * 2)
24					

- b. The three items that we would investigate would be (a) utilities; (b) fruit; and, (c) nuts. These three have the largest difference between what we actually incurred and the budget. For example, we would like to understand why our utility costs are much more than expected. Perhaps there has been an increase in rates and we can expect higher costs in the future. Alternatively, perhaps some of our heating systems are inefficient and we can save money by replacing them. Although the actual cost of the three items we identify are greater than the budget, we would still investigate if the actual cost was less than budget. Consider, for example, the chocolate. If this difference was large (meaning we spent much less than budgeted), we might want to investigate to see if we are using lower quality chocolate in the bakery goods than budgeted. This might affect their quality and, as a result, future sales adversely.

1-50. (20 Min.) Cost Data for Managerial Purposes—Finding Unknowns: Quince Products.

	A	B	C	D	E	F	G	H	I
1	QUINCE PRODUCTS								
2	Projected Income Statement								
3	For One Month								
4		Status Quo: Single Product		% Increase (Decrease)		Alternative: Two Products		Difference	
5	Sales revenue.....	\$ 10,000	d	30%		\$ 13,000		\$ 3,000	e
6									
7	Costs.....								
8	Material.....	2,000		40%		2,800		800	
9	Labor.....	2,500	k	20%		3,000	m	500	o
10	Rent.....	1,800	l	0%		1,800	n	-	p
11	Depreciation.....	400		25%		500		100	
12	Utilities.....	200		25%		250	h	50	i
13	Other.....	700		50%	j	1,050		350	
14	Total costs.....	\$ 7,600				\$ 9,400	g	1,800	f
15	Operating profit.....	\$ 2,400		50%	a	\$ 3,600	b	\$ 1,200	c
16									
17	a. From statement that profit would	increase by 50%							
18	b. = \$2,400 x 1.50								
19	c. = \$3,600 - 2,400								
20	d. = \$13,000/1.30								
21	e. = \$13,000 - \$10,000								
22	f. = \$3,000 (from e) - \$1,200 (from c)								
23	g. = \$13,000 - \$3,600								
24	h. = \$200 x 1.25								
25	i. = \$250 - \$200								
26	j. = \$350 ÷ 700								
27	k. - p. Labor plus Rent with a single product is \$4,300 (= \$7,600 - \$2,000 - \$400 - \$200 - \$700)								
28	Labor plus Rent with two products is \$4,800 (= \$9,400 - \$2,800 - \$500 - \$250 - \$1,050)								
29	The increase of \$500 (= \$4,800 - \$4,300) in the Labor plus Rent is all due to the 20% increase in Labor								
30	because there is no change in Rent. Therefore, Labor with a single product must be \$2,500 (= \$500 ÷ 20%).								
31	Rent with a single product (and with two products) is \$1,800 (= \$4,300 - \$2,500, or \$4,800 - \$3,000).								
32									

1-51. (40 Min.) Cost Data for Managerial Purposes—Finding Unknowns: Rigney Manufacturing.

Note: This is more difficult than Problem 1-50 because you cannot use the lettering to determine the order in which to solve for the individual cells.

	A	B	C	D	E	F	G	H	I
1	RIGNEY MANUFACTURING								
2	Projected Income Statement								
3									
4	For One Quarter								
5									
6		Status Quo:		% Increase		Alternative			
7		Single Product		(Decrease)		Two Products		Difference	
8	Sales revenue	\$ 50,000	(a)	25%	(b)	\$ 62,500	(c)	\$ 12,500	
9									
10	Costs								
11	Material	\$ 15,000		22%		\$ 18,300	(d)	\$ 3,300	(e)
12	Labor	8,000	(f)	30%	(g)	10,400		2,400	
13	Rent	2,000		10%	(h)	2,200	(i)	200	(j)
14	Depreciation	5,000		15%		5,750		750	
15	Utilities	8,000	(k)	30%		10,400		2,400	(l)
16	Other	<u>3,000</u>		25%	(m)	<u>3,750</u>	(n)	<u>750</u>	
17	Total costs	<u>\$ 41,000</u>				<u>\$ 50,800</u>	(o)	<u>\$ 9,800</u>	(p)
18	Operating profit	<u>\$ 9,000</u>	(q)			<u>\$ 11,700</u>		<u>\$ 2,700</u>	(r)
19									

The following is one approach to the solution. There are many paths that will lead to the same solution.

- | | | | |
|----|--|----|--------------------------------|
| h. | 10% (given in the problem) | b. | $= (\$62,500 \div 50,000) - 1$ |
| i. | $= \$2,000 \times 1.10$ (h) | f. | $= \$10,400 - \$2,400$ |
| j. | $= \$2,200 - \$2,000$ | g. | $= (\$10,400 \div 8,000) - 1$ |
| d. | $= \$15,000 \times 1.22$ | k. | $= \$10,400 \div 1.3$ |
| n. | $= \$3,000 + \750 | l. | $= \$10,400 - \$8,000$ |
| m. | $= (\$3,750 \div \$3,000) - 1$ | p. | $= \$50,800 - \$41,000$ |
| o. | $= (\$18,300 + \$10,400 + \$2,200 + \$5,750 + \$10,400 + \$3,750)$ | | |
| c. | $= \$50,800 + \$11,700$ | q. | $= \$50,000 - \$41,000$ |
| a. | $= \$62,500 - \$12,500$ | r. | $= \$11,700 - \$9,000$ |

1-52. (40 Min.) Cost Data for Managerial Purposes—Finding Unknowns: Davenport Services.

Note: This is more difficult than Problem 1-50 because you cannot use the lettering to determine the order in which to solve for the individual cells. In addition, it is not possible to determine all of the cells.

	A	B	C	D	E	F	G	H	I			
1	DAVENPORT SERVICES											
2	Projected Income Statement											
3												
4	For the Month											
5												
6		Status Quo:			% Increase			Alternative				
7		Current Services			(Decrease)			Enhanced Services				
8	Sales revenue	\$	375,000	(a)	20%	(b)	\$	450,000	\$	75,000	(c)	
9												
10	Costs											
11	Equipment lease	\$	100,000		10%		\$	110,000	\$	10,000		
12	Labor		72,000	(d)	30%	(e)		93,600		21,600	(f)	
13	Rent		12,500	(g)	20%			15,000		2,500	(h)	
14	Depreciation		20,000		5%			21,000	(i)	1,000	(j)	
15	Utilities		55,000		??	(k)		??	(l)	??	(m)	
16	Other		20,000		??	(n)		??	(o)	??	(p)	
17	Total costs	\$	279,500	(q)			\$	330,600	(r)	\$	51,100	(s)
18	Operating profit	\$	95,500				\$	119,400	(t)	\$	23,900	
19												
20												

The following is one approach to the solution. There are many paths that will lead to the same solution.

- f. = 21,600 (given in the problem)
- d. = \$93,600 – \$72,000
- g. = \$15,000 ÷ 1.20
- q. = \$100,000 + \$72,000 + \$12,500 + \$20,000 + \$55,000 + \$20,000
- a. = \$279,500 + \$95,500
- b. = (\$450,000 ÷ \$375,000) – 1
- c. = \$450,000 – \$375,000
- i. = \$20,000 × 1.05
- j. = \$21,000 – \$20,000
- f. = \$93,600 – \$72,000
- h. = \$15,000 – \$12,500
- e. = (\$93,600 ÷ \$72,000) – 1
- t. = \$95,500 + \$23,900
- r. = \$450,000 – \$119,400
- s. = \$330,600 – \$279,500
- k. – p. Cannot be determined. The total cost for utilities and other labor under the alternative can be calculated as \$91,000 (= \$330,600 – \$110,000 – \$93,600 – \$15,000 – \$21,000) but cannot be separated into the two components. Similarly, the increase or decrease for the total, but not the separate components, can be determined.

Solutions to Integrative Cases

1-53. (20 Min.) Identifying Unethical Action – Appendix

- a. We recommend that Accountant B be retained to help Quince Products with their expansion plans. Accountant B has experience with small companies and growth. Although Accountant A has experience in the local area, the experience is with not-for-profit firms and, therefore, might not be particularly applicable. We would not retain Accountant C because he or she is willing to share information from another company's experience. Therefore, he or she might be willing to divulge our information to another competitor.
- b. Accountant C is violating the IMA's code of ethics, specifically the portion of the code dealing with confidentiality. Accountant C could use general knowledge of expansion plans gained as part of his or her work, but, unless legally obligated to, cannot offer to share another company's experience.

1-54. (20 Min.) Cost Data for Managerial Purposes—Finding Unknowns

	A	B	C	D	E	F	G	H	I
1	MILLER CEREALS								
2	Projected Income Statement								
3	For One Year								
4		Status Quo: Single Product		% Increase (Decrease)		Alternative: Two Products		Difference	
5	Sales revenue.....	\$ 150,000	(a)	40%		\$ 210,000 (b)		\$ 60,000	
6									
7	Costs.....								
8	Material.....	40,000		50% (j)		60,000		20,000 (k)	
9	Labor.....	50,000	(l)	20%		60,000		10,000 (m)	
10	Rent.....	6,000	(q)	50%		9,000 (s)		3,000 (u)	
11	Depreciation.....	8,000		0% (n)		8,000		-	
12	Utilities.....	4,000	(o)	25% (p)		5,000		1,000	
13	Other.....	12,000	(r)			36,500 (t)		24,500 (v)	
14	Total costs.....	\$ 120,000	(g)			\$ 178,500 (i)		58,500 (h)	
15	Operating profit.....	\$ 30,000	(c)	5% (f)		\$ 31,500 (e)		\$ 1,500 (d)	
16									
17	a. = \$60,000/0.40								
18	b. = \$150,000 + \$60,000								
19	c. = .2 x \$150,000								
20	d. = .025 x \$60,000								
21	e. = \$30,000 + \$1,500								
22	f. = \$1,500/\$30,000								
23	g. = \$150,000 - \$30,000								
24	h. = \$60,000 - \$1,500								
25	i. = \$120,000 + \$58,500								
26	j. = (\$60,000/\$40,000) - 1								
27	k. = \$60,000 - \$40,000								
28	l. = \$60,000/1.2								
29	m. = \$60,000 - \$50,000								
30	n. no change								
31	o. = \$5,000 - \$1,000								
32	p. = \$1,000/\$4,000								
33	q. to r. Rent (q) + Other (r) = \$120,000 - \$40,000 - \$50,000 - \$8,000 - \$4,000 = \$18,000								
34	Other costs are twice rent, so rent is \$6,000 and Other costs are \$12,000.								
35	s. = \$6,000 x 1.5								
36	t. = \$178,500 - \$60,000 - \$60,000 - \$9,000 - \$8,000 - \$5,000								
37	u. = \$9,000 - \$6,000								
38	v. = \$36,500 - \$12,000								
39									

1-55. (20 Min.) Identifying Unethical Actions (Appendix)

Yes. This action would violate both the Integrity and Credibility Principles.

1-56. (20 Min.) Responsibility for Unethical Action

- a. We can understand, but not justify, what Charles did. He was under considerable pressure in both his professional and personal life and he probably felt that he had no choice. The problem is that his behavior was unethical and illegal.
- b. People in this situation should contact a personal attorney (not the company attorney) for advice. The next step would normally be to contact the most trustworthy member of the board of directors. If the board failed to take action, Charles could have used the IMA confidential call-in number or contacted the Securities and Exchange Commission.

Charles told us that he should have developed a sufficient financial reserve so he could have quit when his boss told him to manipulate the numbers. Also, he should have contacted the former CFO during the first few months after he took the CFO job.

- c. Answers will vary. Here is what actually happened. The Securities and Exchange Commission and the U.S. Department of Justice investigated this fraud. Both Charles and his boss were brought up on criminal and civil charges. Both did jail time. Charles has had difficulty getting a good job. He says that prospective employers shy away from hiring him because he has to answer “yes” to the question on employment forms: “Have you ever been convicted of a felony?”