

Chapter 12 Pricing

True/False

1. Managers have little discretion in setting prices in market situations which are not competitive.
2. The two ends of the decision-time spectrum are the time-horizon and the one-time-only horizon.
3. Pricing decisions that are long-run based should focus on more than short-run costs.
4. Knowledge of long-run product costs helps guide decisions about entering or remaining in the market for a given product when in a highly competitive price-setting situation.
5. Target pricing requires four steps: (1) developing a needed product, (2) pricing the product, (3) deriving the costs, and (4) performing value engineering.
6. Cost systems emphasize cost occurrence by recognizing and recording costs only when they are incurred.
7. Value engineering is a time-and-motion system that can result in: improvements in product designs, changes in material specifications, or modifications in process methods.
8. Locked-in costs are costs that have been incurred.
9. The "plus" relates to the percentage target return on investment in cost-plus pricing.
10. The target rate of return on investment is the target operating income that an organization must earn, divided by invested capital.
11. Including unit fixed costs for pricing is often used because of its simplicity.
12. Peak-load pricing focuses on direct costs when setting prices for peak and nonpeak periods.
13. Life-cycle budgeting is necessary before a company can determine the product life cycle of a given product.
14. Price dumping occurs when a company is trying to get rid of out-of-style products and substantially reduces their prices.

15. Pricing for one-time-only special orders is a type of
 - a. pricing decision using the time horizon.
 - b. short-run decision.
 - c. long-run decision.
 - d. main product pricing used with job-order costing.
16. A price-bidding decision for a one-time-only special order includes an analysis of
 - a. only marketing costs.
 - b. all cost drivers related to the product.
 - c. direct and indirect costs of each category in the value chain.
 - d. only fixed manufacturing costs.
17. Decisions on the price to bid on a one-time-only special order should include
 - a. only cost data.
 - b. only the potential bids of competitors.
 - c. cost data and potential bids of competitors.
 - d. cost data, potential bids of competitors, and use of variable costing income statements.
18. For long-run pricing decisions, using stable prices has the advantage of
 - a. helping build buyer-seller relationships.
 - b. reducing the need to change cost structures frequently.
 - c. reducing competition.
 - d. minimizing the need to monitor competitors' prices frequently.

19-20. Action Mopeds manufactures mopeds. The following information pertains to the company's normal operations per month:

Direct manufacturing labor -hours	5,000 hours
Direct manufacturing labor per hour	\$ 24
Direct materials per unit	\$200
Variable manufacturing overhead costs	\$322,500
Fixed manufacturing overhead costs	\$1,200,000
Marketing and distribution costs	\$1,125,000
Research and development costs	\$900,000

19. What is the unit cost when establishing a long-run price for mopeds?
 - a. \$309.50
 - b. \$325.48
 - c. \$444.50
 - d. \$460.50
20. What is the unit cost for establishing a minimum bid on a one-time-only special order of 1,000 units from an overseas city if all cost relationships remain the same except for a one-time setup charge of \$40,000?
 - a. \$269.50
 - b. \$309.50
 - c. \$444.50
 - d. \$260.50

21-22. Movies and More is evaluating rental prices for its video rentals. Historical data that it has collected have shown that Sunday and Monday have the lowest video rentals of the week. The following information pertains to the store's normal operations per week.

Average rentals per day on Tuesday through Saturday	400
Average rentals per day on Sunday and Monday	200
Store hours per day	12
Total units available for rent	10,000
Variable operating costs per hour	\$80
Marketing costs per week	\$3,000
Customer service costs per week	\$500

21. What is the minimum long-run price for each video rental, assuming all rentals are priced the same?
 - a. \$2.40
 - b. \$3.33
 - c. \$3.61
 - d. \$4.26
22. The store manager wants to increase the rentals on Sundays and Mondays to an average of 300 videos. She thinks this can be done by lowering the price of rentals. What minimum price should be used for the off-peak nights?
 - a. \$2.40
 - b. \$3.20
 - c. \$4.80
 - d. \$4.26
23. For setting long-term prices, a company should use full product costs. Full product costs for pricing purposes
 - a. include all costs that are traceable to the product.
 - b. include all manufacturing and selling costs.
 - c. include all direct costs plus an appropriate allocation of the indirect costs of all business functions.
 - d. allow for the highest possible product prices.
24. When target costing and target pricing are used together,
 - a. the target cost is established first, then the target price.
 - b. the target cost is the estimated long-run cost that enables a product or service to achieve a desired profit.
 - c. the target price is set to undercut the competition.
 - d. target costs are higher than current costs because of inflation over time.

Output units	15,000 mopeds
Machine-hours	4,000 hours

25. In summary form, the steps, in sequence, for developing target prices and costs are
- design a product, engineer the product, set target cost and set target price.
 - set target price, set profit desired, and derive target cost.
 - set target cost, set profit desired, and set target price.
 - develop a product, set target price, derive target cost, and perform value engineering.

26-27. Acorn Products currently sells small boats for \$360. It has costs of \$280. A competitor is bringing a new small boat to market that will sell for \$300. Management believes it must lower the price to \$300 to compete in the market for small boats. Marketing believes that the new price will cause sales to increase by 10 percent, even with a new competitor in the market. Acorn's sales are currently 100,000 per year.

26. What is the target cost if target profit is 25 % of sales?
- \$75
 - \$90
 - \$225
 - \$270
27. What is the target selling price if costs cannot be reduced and target profit is changed to 20 % of sales?
- \$336.00
 - \$350.00
 - \$353.33
 - \$360.00

28. The product strategy in which companies first determine the price at which they can sell a new product and then design a product that can be produced at a low enough cost to provide an adequate profit margin is referred to as

- full costing.
- target costing.
- predatory pricing.
- discriminatory pricing.

29. A graph comparing locked-in costs with incurred costs will have
- locked-in costs rising much faster initially, but dropping to zero after the product is manufactured.
 - locked-in costs rising much faster initially than the incurred cost, but joining the incurred cost line at the completion of the value chain functions.
 - the two cost lines running parallel until the end of the process, when they join.
 - no differences unless the product is manufactured inefficiently.

30. Graphic analysis of incurred and locked-in costs provides several insights as to how the different concepts influence decisions. Which of the following statements is FALSE?
- Costs are locked in before they are incurred.
 - After a product's design has been approved, costs are difficult to influence.
 - When and how costs are locked in are more important than when and how costs are incurred.
 - Timing of the manufacturing process is the most important aspect of locking in costs.

31, 49, 50. Pershing Company budgeted the following costs for the production of its one and only product, blades, for the next fiscal year:

Direct materials		\$187,500
Direct labor		130,000
Factory overhead:	Variable	140,000
	Fixed	107,500
Selling and administrative:	Variable	60,000

	Fixed	80,000
Total costs		\$705,000

Pershing has a target profit of \$150,000.

31. The average target profit percentage for setting prices as a percentage of total manufacturing costs would be

- 245 percent.
- 185 percent.
- 125 percent.
- 51 percent.

49. The average target profit percentage for setting prices as a percentage of prime costs would be

- 54 percent.
- 87 percent.
- 169 percent.
- 122 percent.

50. The average target profit percentage for setting prices as a percentage of total variable costs would be

- 328 percent.
- 36 percent.
- 228 percent.
- 65 percent.

51. The average target profit percentage for setting prices as a percentage of total costs would be

- 328 percent.
- 36 percent.
- 228 percent.
- 21 percent.

32. The cost-plus pricing approach is generally in the form

- Cost base + Markup component = Prospective selling price.
- Prospective selling price - Cost base = Markup component.
- Cost base + Gross margin = Prospective selling price.
- Variable cost + Fixed cost + Contribution margin = Prospective selling price.

33. Seneca Company has invested \$1,000,000 in a plant to make gas pumps for service stations. The average long-run income desired from the plant is \$150,000 annually. The annual cost base for each pump is \$1,000. What should be the prospective selling price for each pump if the company uses a target return on investment as the markup base?

- \$1,150
- \$2,500
- \$16,000
- \$1,000

34. When does a product's markup percentage need to cover fixed manufacturing costs?

- when a company has only fixed manufacturing costs
- when the company wants to break even during the fiscal period
- when the company plans on losing money
- when the cost base does not include fixed manufacturing costs

35. When are all fixed and variable costs relevant to a company's decision process?

- during all product pricing decisions
- when the cost base is based on variable costing
- during the determination of long-term pricing decisions relative to the shutting-down alternative
- when one-time-only special order situations need pricing

36. Johnson Petroleum Company is considering pricing its 5,000 gallon petroleum tanks using either variable manufacturing or full product costs as the base. The variable cost base provides a prospective price of \$2,800 and the full cost base provides a prospective price of \$2,850. The difference between the two prices is

- the amount of profit to be included.

- b. because the variable cost base must estimate all fixed costs, other variable costs, and desired profit while the full cost base must estimate only desired profit.
 c. known as price discrimination.
 d. caused by the inability of most companies to estimate fixed cost per unit with any degree of reliability.
37. Price discrimination to customers is the practice of
 a. setting different prices for different products.
 b. charging different prices for quantity amounts.
 c. using variable costing for some products and full costing for other products when setting prices.
 d. charging different prices to different customers or clients for the same products or services.
38. Iowa Utility Company charges its high-usage commercial customers a lower rate per kilowatt hour than other customers. This is an example of
 a. customer-preference pricing. b. high-load pricing.
 c. peak-load pricing. d. price discrimination.
39. Life-cycle budgeting differs from life-cycle costing in that
 a. budgeting includes revenues and costs, and costing includes only the costs.
 b. budgeting includes all products of a company and costing is only for individual products.
 c. budgeting is for the development and production of a product, while costing is for only the production activities.
 d. budgeting is for one accounting period and is a total dollar concept, while costing is a per unit concept.
40. Satellite, Inc. is in the process of evaluating its new products. A new signal receiver has two production runs each year. Setup costs are \$20,000 per setup. The new receiver incurred \$60,000 in development costs and is expected to be produced for three years. The direct costs of producing the receivers are \$80,000 per run of 5,000 receivers. Indirect manufacturing costs charged to each run are \$90,000. Destination charges for each receiver average \$2.00. Customer service expenses average \$0.40 per receiver. The receivers are going to sell for \$50 the first year and increase by \$6 each year thereafter. Sales units equal production units each year.
40. What is the amount of the nonrecurring costs?
 a. \$12,000 b. \$60,000
 c. \$72,000 d. \$192,000
52. What is the operating income for the first year?
 a. \$36,000 b. \$40,000
 c. \$96,000 d. \$238,000
53. What is the life-cycle operating income?
 a. \$348,000 b. \$408,000
 c. \$1,272,000 d. \$1,680,000
41. The life-cycle reporting process
 a. is the same as traditional accounting reporting.
 b. matches the company's normal fiscal year reporting.
 c. usually includes several accounting reporting periods.
 d. tracks costs, but not revenues, from the beginning to the end of a product's, or service's, life.

42. Customer life-cycle costs
 a. are the costs the selling company incurs to satisfy the customer.
 b. are the costs to the customer for buying and using a product.
 c. are the same as the selling life-cycle prices.
 d. are the replacement costs of using a product or service.
43. Predatory pricing is a type of price discrimination that
 a. allows prices to be cut to the level of variable costs.
 b. is required when a company declares bankruptcy so that it can sell its remaining goods quickly.
 c. is used in the food industry for perishable goods.
 d. deliberately sets prices very low, sometimes even below costs, so as to minimize competition.
44. Collusive pricing occurs when
 a. a company wants two products to sell for the same, or almost the same, amount.
 b. a company wants a product to sell for the same as a competitor's product.
 c. two or more companies agree to sell a product at a price higher than should be expected.
 d. competitors are part of the same large parent organization.

45. Sec Taylor Stadium is evaluating ticket prices for its baseball games. Studies have shown that Monday and Tuesday ballgames average less than half the fans of games on other days. The following information pertains to the stadium's normal operations per season.

Average fans per game	5,000 fans
Average fans per Monday/Tuesday game	2,000 fans
Number of home games per season	60 games
Stadium capacity	7,000 seats
Variable operating costs per operating hour	\$2,000
Marketing costs per season for baseball	\$277,500
Customer service costs per season for baseball	\$50,000

The stadium is open for 5 operating hours on each day a game is played. The stadium is available for some type of use 300 days a year. All employees work by the hour except for the administrators. In addition, only one game is played per day and each fan would have only one ticket per game.

45. What is the minimum long-run price for ballgames assuming all tickets are priced the same?
 a. \$2.20 b. \$3.09
 c. \$4.30 d. \$85.73
46. The stadium authority wants to increase the attendance on Mondays and Tuesdays to an average of 4,000 fans. It thinks it can do this by lowering the price of tickets. What is the minimum price that can be charged for the off-peak nights?
 a. \$0.68 b. \$2.00
 c. \$2.50 d. \$5.00
- 47,48. Acorn Products currently sells small boats for \$360. It has costs of \$280. A competitor is bringing a new small boat to market that will sell for \$300. Management believes it must lower the price to \$300 to compete in the market for small boats. Marketing believes that the new price will cause sales to increase by 10 percent, even with a new competitor in the market. Acorn's sales are currently 100,000 per year.
47. What is the change in operating income if marketing is correct and only the sales price is changed?

- a. \$2,200,000
- b. \$600,000
- c. \$(2,200,000)
- d. \$(5,800,000)

48. What is the target cost if the company wants to maintain its same income level, and marketing is correct?

- a. \$225.00
- b. \$227.27
- c. \$246.67
- d. \$280.00

54. Nicholas, Critelli and Associates is in the process of evaluating its new client services for the business consulting division. Estate Planning, a new service, incurred \$600,000 in development costs and employee training. The direct costs of providing this service, which is all labor, averages \$100 per hour. Other costs for this service are estimated at \$2,000,000 per year. The current program for estate planning is expected to last for two years. At that time a new law will be in place which will require new operating guidelines for the tax consulting. Customer service expenses average \$400 per client, with each job lasting an average of 400 hours. The current staff expects to bill 40,000 hours for each of the two years the program is in effect. Billing averages \$140 per hour.

54. What is the operating income for the first year?

- a. \$(1,040,000)
- b. \$(1,400,000)
- c. \$5,600,000
- d. \$6,640,000

55. What is the life-cycle operating income?

- a. \$(1,480,000)
- b. \$(1,400,000)
- c. \$3,200,000
- d. \$11,200,000

56. Products which incur a high percentage of their total costs early in their life-cycle

- a. require managers to start managing the process or task sooner than for other similar processes with smaller early costs.
- b. create the need for accurate predictions of revenues.
- c. highlight the interrelationships with other parts of the life-cycle.
- d. are highly visible and, therefore, must be carefully controlled.

57. To minimize the chances of violating pricing laws, a company should

- a. maintain records so that fixed, variable and mixed costs can be identified.
- b. use a variable cost plus markup method of pricing.
- c. keep a record of the upstream costs associated with low cost products.
- d. use dumping only when a product is at the end of its life cycle.

58. Valley West Amusement Park is evaluating its ticket prices. It is open during the summer months for 15 weeks. The following information pertains to last year's tourist season. Costs are expected to remain the same for this year.

Average tourists per day on Friday through Tuesday	2,500
Average tourists per day on Wednesday and Thursday	1,000
Variable operating costs per day when open	\$4,100
Fixed overhead costs per year	\$180,000
Marketing costs per year	\$62,500
Customer service costs per year	\$5,000

Required:

- a. What is the minimum long-run price for tour tickets?
- b. Studies have shown that Wednesdays and Thursdays have the fewest tourists. The director wants to increase attendance on these days to an average of 1,500 tourists. One suggestion the director has received is to lower ticket prices. A special promotion for the discount days will cost \$5,250. What minimum ticket price should be charged for the off-

peak days?

59. Arizona Travel offers guided tours through the Grand Canyon. Arizona Travel provides a guide, necessary equipment, and food for a fee of \$75 per person per day. Currently, the company is providing an average of 600 guide-days per month. Based on available equipment and guides, the maximum capacity is 800 guide-days (customers taken on the equivalent of an all-day tour) per month.

Variable costs per guide-day	Fixed costs per month during 19x1 were as for 19x1 were as follows:
Food	Equipment rental
Guide's salary	Marketing
Supplies	Administration
Insurance	Customer service

Required:

- a. What will be the effect on monthly operating income if the fee is increased by \$18 in 19x2 and trips decline by 200 a month?
- b. A group of foreign tourists has offered Arizona Travel a proposal of 300 guide-days in July if they will cut the fee to \$67.50 per guide-day. They have their own food and do not want to use the Arizona Travel menus. Arizona Travel will incur \$300 in additional costs for busing the tourists back and forth to the camp site. Should Arizona Travel accept the special offer?

60. Do-It Company manufactures sinker molds for fishing. Sinker molds have a price of \$7.00. It has costs of \$5.44. A competitor is introducing a new sinker mold that will sell for \$6.00. Management believes it must lower the price to \$6.00 in order to compete in the highly cost-conscious sinker mold market. Marketing believes that the new price will maintain the current sales level. Do-It Company's sales are currently 200,000 molds per year.

Required:

- a. What is the target cost for the new price if target profit is 20% of sales?
- b. What is the target selling price if costs cannot be reduced and target profit is changed to 15% of sales?
- c. What is the change in operating income for the year if \$6.00 is the new price and costs remain the same?
- d. What is the target cost per unit if the selling price is reduced to \$6.00 and the company wants to maintain its same income level?

61. Central Dental Company manufactures dental chairs. Its most popular model, Deluxe, sells for \$2,500. It has variable costs totaling \$1,400 and fixed costs of \$500 per unit, based on an average production run of 5,000 units. It normally has four production runs a year, with \$200,000 setup costs each time. Plant capacity can handle up to six runs a year for a total of 30,000 chairs.

A competitor is introducing a new dental chair similar to Deluxe that will sell for \$2,000. Management believes it must lower the price in order to compete. Marketing believes that the new price will increase sales by 25% a year. The plant manager thinks that production can increase by 25% with the same level of fixed costs. The company currently sells all the Deluxe chairs it can produce.

Required:

- a. What is the annual operating income from Deluxe at the current price of \$2,500?
- b. What is the annual operating income from Deluxe if the price is reduced to \$2,000 and sales in units increase by 25 percent?
- c. What is the target cost per unit for the new price if target profit is 20% of sales?

62. Bridget Lynch, a college student, plans to operate a hot dog stand at the beach during the

summer for three months. Her fixed costs for the booth, which include utilities, will be \$2,600. Variable costs per hot dog will be \$0.50 for materials and \$0.10 for a franchise fee from the hot dog supplier. This year's sales are expected to be 20,000 units, based on the operation of the same booth the prior year. Bridget needs to earn \$5,000 so that she can pay part of her college expenses for the coming academic year.

Required:

Determine the price she needs to charge to earn a profit of \$5,000.

63. Frost, Inc. has budgeted sales of \$150,000 with the following budgeted costs:

Direct materials		\$31,500
Direct labor		20,500
Factory overhead:	Variable	18,500
	Fixed	28,000
Selling and administrative expenses:	Variable	12,000
	Fixed	16,000

Compute the average target profit percentage for setting prices as a percentage of:

- Prime costs
- Total costs
- Total variable costs
- Variable manufacturing costs
- Total manufacturing costs

64. Ellingson Company has budgeted sales of \$487,500 with the following budgeted costs:

Direct materials		\$105,000
Direct labor		82,500
Factory overhead:	Variable	\$60,000
	Fixed	67,500
Selling and administrative expenses:	Variable	\$45,000
	Fixed	62,500

Compute the average target profit percentage for setting prices as a percentage of:

- Total manufacturing costs
- Total variable costs
- Prime costs
- Total costs
- Variable manufacturing costs

65. Brady Lumber Company, a producer of oak lumber for furniture companies, has an offer to supply a special load of lumber for an exporter. It will take three months to fill the order of 1,000,000 board feet. During the three months, half of its production capacity will be utilized for the special order. The total fixed costs for the three months will be \$6,000,000. Variable costs per 1,000 board feet will be \$2,500.

The marketing manager believes that half of the capacity taken up by the special order can be utilized with regular business which will generate income of \$240,000.

Required:

Determine the minimum price that needs to be charged for the special order.

66. Max and Marv are starting a new business venture and are in the process of evaluating their product lines. One new product, hand-made wooden tables, has incurred \$30,000 in development costs. These costs are to be amortized over a three-year period. The direct costs of each table averages \$90. Other costs for making the tables are estimated at \$100,000 per year. The current sales program for tables is expected to change every six months. At that time, a new pattern will be put in place with \$7,000 of setup costs. Each table requires 12 labor-hours and 2 machine-hours. Current sales are expected to be 2,000 units of each table. Each table sells for \$140. Customer service expenses average \$10 per table.

Required:

What is the life-cycle operating income?

67. Image Products is in the process of evaluating its new cosmetic products for 19x1. One new product, Nice Hair, has one production run each month with \$8,000 in setup costs. Nice Hair incurred \$20,000 in development costs and is expected to be produced for three years. The direct costs of producing Nice Hair are \$28,000 per run of 15,000 bottles. Indirect manufacturing costs charged to each run are \$44,000. Destination charges for each batch average \$9,000. Nice Hair sells for \$10 in the United States and \$20 in all other countries. Sales are one-third domestic and two-thirds exported. Assume everything produced is sold.

Required:

- What is the life-cycle budgeted revenue?
- What is the operating income for the first year?

68. Hans Carpenter, controller, discusses the pricing of a new product with the sales manager, Mary Bass. What major influences must Mary and Hans consider in pricing the new product? Discuss each briefly.

69. Latest Designs is a manufacturer of ladies shoes. It is in the process of its annual planning for the new designs for winter, which includes adding matching accessories to its shoe line.

One square yard of leather can be used to make a matching set of shoes and handbag. A pair of shoes requires one-third square yard and a handbag averages three-fifths square yard. The leftover material can be used to make matching belts. However, to get the proper lengths for belts, the cutting process requires more care and slows down the production workers.

The current market allows for the sale of 1,500 pairs of shoes if no accessories are available. Market research reveals that shoe sales will be 20% higher if matching handbags and belts are available. However, handbags and belts do not sell well as separate items. The marketing department has provided the following tentative information about the items

	Cost	Price	Percentage
Complete set of three items	\$100	\$200	70%
Shoes and Handbag	90	180	15
Shoes and Belt	60	120	10
Shoes	50	100	5

If the shoes are made with the belt and handbag the scrap can be sold. However, if either the handbag or belt is made there is not enough scrap to sell.

Required:

Given the relationships provided by the marketing department, identify nonquantitative factors that could influence management in its decisions to manufacture and set prices for the matching shoes, handbag and belt.

70. Learning-4-Fun provides materials that let people teach themselves how to snow ski. It has six different skill-level programs. Each one includes visual and audio learning aids along with a workbook that can be submitted to the company for grading and evaluation purposes, if the person so desires.

The accounting system of Learning-4-Fun is very traditional in its reporting functions with the calendar year being the company's fiscal year. It does include an abundance of information that can be used for various reporting purposes.

The company has found that any new idea soon runs it, course with an effective life of about three years. Therefore, the company is always in the development stage of some new program. Program development requires experts in the area to provide the know-how of the item being developed and a development team that puts together the video, audio, and

workbook materials. The actual costs of reproducing the packages is relatively cheap when compared to the development costs.

Required:

How might product life-cycle reporting aid the company in improving its overall operations?

Answers

1. False 2. False 3. True 4. True
 5. True 6. True 7. False 8. False
 9. False 10. True 11. True 12. False
 13. False 14. False 15. B 16. c
 17. c 18. a

19. c

Direct materials	\$200.00
Direct manufacturing labor (\$24 x 5,000)/15,000	8.00
Variable manufacturing (\$322,500/15,000)	21.50
Fixed manufacturing (\$1,200,000/15,000)	80.00
Marketing and distribution (\$1,125,000/15,000)	75.00
Research and development (\$900,000/15,000)	<u>60.00</u>
Total	\$444.50

20. a

Direct materials	\$200.00
Direct manufacturing labor	8.00
Variable manufacturing	21.50
Setup	40.00
Total	\$269.50

21. d

Variable costs (\$80 x 12 x 7)	\$6,720
Marketing	3,000
Customer service	<u>500</u>
Total	\$10,220

Average rental cost per customer $\$10,220 / [(5 \times 400) + (2 \times 200)] = \4.26

22. b

Variable costs per day (\$80 x 12) = \$960

Average rental per customer = $\$960 / 300 = \3.20

23. c

24. b

25. d

26. c $\$300 - \$300(0.25) = \$225$

27. b $\$280 / 0.80 = \350

28. b

29. b

30. d

31. d $(\$150,000 + \$60,000 + \$80,000) / (\$187,500 + \$130,000 + \$140,000 + \$107,500) = 51.3\%$

32. a

33. a

Target return = $\$150,000 / \$1,000,000 = 0.15$

Prospective selling price = $\$1,000 + (\$1,000 \times 0.15) = \$1,150$

34. d

35. c

36. b

37. d

38. d

39. a

40. b The only nonrecurring cost is the development costs of \$60,000.

41. c

42. b

43. d

44. c

45. b

Attendance = $60 \times 5,000 = 300,000$ fans

Percent use per year for baseball $60 / 300 = 0.20$

Variable costs $300 \times \$2,000$	\$600,000
Marketing	277,500
Customer service	<u>50,000</u>
Total	\$927,500

Average cost per fan = $\$927,500 / 300,000 = \3.09

46. c

Variable cost per game $\$2,000 \times 5$ hours = \$10,000

Average cost per fan = $\$10,000 / 4,000 = \2.50

47. d $(100,000 \times (\$360 - \$280)) - (110,000 \times (\$300 - \$280)) = \$5,800,000$

48. b

Current income = $100,000 \times (\$360 - \$280) = \$8,000,000$

Target cost y: $\$8,000,000 = (110,000 \times \$300) - 110,000y$

$y = \$25,000,000 / 110,000 = \227.27

49. c

$(\$140,000 + \$107,500 + \$60,000 + \$80,000 - \$150,000) / (\$187,500 + \$130,000) = 169.3$ percent

50. d

$(\$150,000 + \$107,500 + \$80,000) / (\$187,500 + \$130,000 + \$140,000 + \$60,000) = 65.2$ percent

51. d $\$150,000 / \$705,000 = 21.3$ percent

52. a

Sales (5,000 units x 2 runs x \$50)		\$500,000
Development costs	\$60,000	
Setup costs (2 x \$20,000)	40,000	
Direct costs (2 x \$80,000)	160,000	
Indirect manufacturing costs (2 x \$90,000)	180,000	
Destination costs (\$2.00 x 10,000)	20,000	
Customer service (\$0.40 x 10,000)	4,000	
Life-cycle operating income		<u>\$36,000</u>

53. b

	Year1	Year2	Year3	Totals
Life-cycle revenue (from #58)	\$500,000	\$560,000	\$620,000	\$1,680,000
Life-cycle costs:				

Development	\$60,000			\$60,000
Setup	40,000	\$40,000	\$40,000	120,000
Direct costs	160,000	160,000	160,000	480,000
Indirect manufacturing	180,000	180,000	180,000	540,000
Destination	20,000	20,000	20,000	60,000
Customer service	4,000	4,000	4,000	12,000
Total costs	\$464,000	\$404,000	\$404,000	1,272,000
Life-cycle operating income				\$408,000

54. a

Revenue (40,000 hours x \$140)		\$5,600,000
Development costs	\$600,000	
Direct costs (40,000 x \$100)	4,000,000	
Indirect costs	2,000,000	
Customer service (\$400 x 100 clients)	40,000	6,640,000
Operating income (loss)		\$(1,040,000)

55. a

	Year1	Year2	Totals
Life-cycle revenue	\$5,600,000	\$5,600,000	\$11,200,000
Life-cycle costs:			
Development	\$600,000		\$600,000
Direct costs	4,000,000	\$4,000,000	8,000,000
Indirect costs	2,000,000	2,000,000	4,000,000
Customer service	<u>40,000</u>	<u>40,000</u>	<u>80,000</u>
Total costs	\$6,640,000	\$6,040,000	\$12,680,000
Life-cycle operating income			\$(1,480,000)

56. b
57. a

58. a. Attendance = (15 x 5 x 2,500) + (15 x 2 x 1,000) = 217,500 people
 Variable costs (15 x 7 x \$4,100) \$430,500
 Fixed 180,000
 Marketing 62,500
 Customer service 5,000
 Total \$678,000
 Average cost per tourist = \$678,000/217,500 = \$3.12

b. Wednesdays and Thursdays costs:
 Variable costs = \$4,100 x 15 weeks x 2 days \$123,000
 Promotion costs 5,250
 Total \$128,250
 Total desired tourist = 15 x 2 x 1,500 = 45,000
 Average variable cost per tourist = \$128,250/45,000 = \$2.85

59. a. Guide tickets \$75.00
 Variable costs:
 Food \$7.50
 Supplies 3.00
 Insurance 12.00
 Guide's salary 37.50 60.00
 Contribution margin \$15.00

Profit decrease from reduced sales if there were no changes in prices or costs (200 units x

\$15) \$(3,000) . Profit increase from increase in selling price
 (400 tours x \$18) 7,200
 Increase in monthly profit \$4,200

b. Special tickets (300 x \$67.50) \$20,250
 Costs:
 Guide salaries (300 x \$37.50) \$11,250
 Supplies (300 x \$3) 900
 Insurance (300 x \$12) 3,600
 Special costs 300 16,050
 Contribution margin \$4,200
 Opportunity costs:
 100 over capacity x \$15 (1,500)
 Increase in operating income \$2,700

60. a. \$6.00 - \$6.00(0.20) = \$4.80
 b. \$5.44/0.85 = \$6.40
 c. Change = (200,000 x (\$7.00 - \$5.44)) - (200,000 x (\$6.00 - \$5.44))
 = \$312,000 - \$112,000 = \$200,000 reduction in income
 d. Current income = 200,000 x (\$7.00 - \$5.44) = \$312,000
 Target cost per unit:
 \$312,000 = (200,000 x \$6.00) - 200,000y
 200,000y = \$888,000
 y = \$4.44

61. a. Sales (20,000 x \$2,500) \$50,000,000
 Costs:
 Variable costs (20,000 x \$1,400) \$28,000,000
 Fixed costs (\$500 x 5,000 x 4) 10,000,000
 Setup costs (\$200,000 x 4) 800,000 38,800,000
 Operating income \$11,200,000

b. Sales (25,000 x \$2,000) \$50,000,000
 Costs:
 Variable costs (25,000 x \$1,400) \$35,000,000
 Fixed costs, same 10,000,000
 Setup costs (\$200,000 x 5) 1,000,000 46,000,000
 Operating income \$4,000,000

c. \$2,000 - \$2,000(0.20) = \$1,600

62. Use an inverted income statement as follows:
 Profit \$5,000
 Fixed expenses 2,600
 Contribution margin \$7,600
 Variable expenses [20,000 x (\$0.50 + \$0.10)] 12,000
 Sales (20,000 x ?) \$19,600
 Price per unit = \$19,600/20,000 = \$0.98

63. a. \$31,500 + \$20,500 = \$52,000
 (\$150,000 - \$52,000)/\$52,000 = 188 percent

b. \$31,500 + \$20,500 + \$18,500 + \$28,000 + \$12,000 + \$16,000 = \$126,500

$$(\$150,000 - \$126,500)/\$126,500 = 19 \text{ percent}$$

c. $\$31,500 + \$20,500 + \$18,500 + \$12,000 = \$82,500$
 $(\$150,000 - \$82,500)/\$82,500 = 82 \text{ percent}$

d. $\$31,500 + \$20,500 + \$18,500 = \$70,500$
 $(\$150,000 - \$70,500)/\$70,500 = 113 \text{ percent}$

e. $\$31,500 + \$20,500 + \$18,500 + \$28,000 = \$98,500$
 $(\$150,000 - \$98,500)/\$98,500 = 52 \text{ percent}$

64. a. $\$105,000 + \$82,500 + \$60,000 + \$67,500 = \$315,000$
 $(\$487,500 - \$315,000)/\$315,000 = 55 \text{ percent}$

b. $\$105,000 + \$82,500 + \$60,000 + \$45,000 = \$292,500$
 $(\$487,500 - \$292,500)/\$292,500 = 67 \text{ percent}$

c. $\$105,000 + \$82,500 = \$187,500$
 $(\$487,500 - \$187,500)/\$187,500 = 160 \text{ percent}$

d. $\$105,000 + \$82,500 + \$60,000 + \$67,500 + \$45,000 + \$62,500 = \$422,500$
 $(\$487,500 - \$422,500)/\$422,500 = 15 \text{ percent}$

e. $\$105,000 + \$82,500 + \$60,000 = \$247,500$
 $(\$487,500 - \$247,500)/\$247,500 = 97 \text{ percent}$

65. Opportunity costs to be recovered \$240,000

Variable costs [$\$2,500 \times (1,000,000/1,000)$] \$2,500,000

Relevant cost (minimum revenue needed) \$2,740,000

Price = $\$2,740,000/1,000 = \$2,740$ per 1,000 board feet

66. Revenue (2,000 x \$140)		\$280,000
Development costs (1/6 of total)	\$5,000	
Direct costs (2,000 x \$90)	180,000	
Indirect costs (1/2 year)	50,000	
Setup costs	7,000	
Customer service (\$10 x 2,000 tables)	20,000	<u>262,000</u>
Operating income		\$18,000

67. a. Domestic (\$10 x 12 months x 15,000 x 3 yrs. x 1/3)	\$1,800,000
Export (\$20 x 12 months x 15,000 x 3 yrs. x 2/3)	7,200,000
Total life-cycle budgeted revenue	\$9,000,000

b. Sales		
Domestic (\$10 x 12 months x 15,000 x 1/3)	\$600,000	
Export (\$20 x 12 months x 15,000 x 2/3)	<u>2,400,000</u>	
Total Sales		\$3,000,000

Costs:

Development costs	\$20,000	
Setup costs (12 x \$8,000)	96,000	
Direct costs (12 x \$28,000)	336,000	
Indirect manufacturing costs (12 x \$44,000)	528,000	
Destination costs (12 x \$9,000)	108,000	<u>1,088,000</u>

Life-cycle operating income, first year

\$1,912,000

68. The major influences are customers, competitors, and costs.

Customers: Managers must always examine pricing problems through the eyes of their customers. A price increase may cause customers to reject a company's product and choose a competing or substitute product.

Competitors: Competitors' reactions influence pricing decisions. At one extreme, a rival's prices and products may force a business to lower its prices to be competitive. At the other extreme, a business without a rival in a given situation can set higher prices. A business with knowledge of its rivals' technology, plant capacity, and operating policies is able to estimate its rivals' costs, which is valuable information in setting competitive prices.

Costs: Companies price products to exceed the costs of making them. The study of cost-behavior patterns gives insight into the income that results from different combinations of price and output quantities sold for a particular product.

69. Nonquantitative factors that could influence the decisions to manufacture and price the items include:

- accuracy of sales mix by marketing department,
- accuracy of sales increase of shoes if accessories are available,
- company image as a manufacturer of items other than shoes,
- maintenance of quality if more time is taken to cut out handbags and belts,
- competition from other manufacturers of similar lines,
- is there enough capacity to meet increased demand, and
- adaptability of assembly line and workers for the new items.

70. Because the product cycle for Learning-4-Fun extends over several traditional accounting periods, it is critical for the company to consider a reporting concept that evaluates each one of its products during its entire life cycle. Reporting procedures that highlight an entire life cycle can include items for overall profitability, and which products might be repeated in a few years. With a large portion of their expenses in the development area, life cycle reporting can assist in predicting the sales needs for the entire life of a product.

It is probably more important to evaluate company performance on a product basis rather than year-to-year. Life cycle reporting would allow the company to compare products to each other rather than just comparing one year to the next.