

TRUE/FALSE. Write 'T' if the statement is true and 'F' if the statement is false.

- 1) Relevant information is future data that differs among alternatives. 1) _____
- 2) Management accountants gather and analyze relevant information to compare alternatives. 2) _____
- 3) One key to analyzing short-term business decisions is to use a contribution margin approach that separates variable costs from fixed costs. 3) _____
- 4) Costs that differ between alternatives are relevant. 4) _____
- 5) Expected future costs and revenues are relevant to decision making. 5) _____
- 6) One cost that is irrelevant in decision making is a sunk cost. 6) _____
- 7) Managers' decisions are based on qualitative as well as quantitative factors. 7) _____
- 8) Qualitative factors can differ between alternatives. 8) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 9) Which of the following best describes an "opportunity cost"? 9) _____
 - A) Expected future costs that differs among alternatives
 - B) The distribution of all products to be sold
 - C) Benefits foregone by not choosing an alternative course of action
 - D) Costs that were incurred in the past and cannot be changed
- 10) Which of the following best describes a "relevant cost"? 10) _____
 - A) Expected future costs that differs among alternatives
 - B) Costs that were incurred in the past and cannot be changed
 - C) Cost of developing, producing, and delivering a product or service
 - D) A factor that restricts production or sales of a product
- 11) Which of the following best describes "contribution margin per unit"? 11) _____
 - A) Sales price per unit minus variable cost unit
 - B) Sales price per unit minus fixed cost per unit
 - C) Sales price per unit minus fixed and variable costs per unit
 - D) Units sold time contribution margin ratio

- 12) Expected future data that differs among alternative courses of action are referred to as 12) _____
A) relevant information. B) historical information.
C) predictable information. D) irrelevant information.
- 13) Which of the following is irrelevant when making a decision? 13) _____
A) The cost of further processing a product that could be sold as is
B) Fixed overhead costs that differ among alternatives
C) The expected increase in contribution margin of one product line as a result of a decision to drop a separate unprofitable product line
D) The cost of an asset that the company is considering replacing
- 14) Fixed costs that do not differ between two alternatives are 14) _____
A) important only if they represent a material dollar amount.
B) relevant to the decision.
C) considered opportunity costs.
D) irrelevant to the decision.
- 15) Which of the following is a sunk cost? 15) _____
A) Purchase price of new vehicle B) Operating costs for a new vehicle
C) Trade in value of old vehicle D) Purchase price of vehicle to be traded in
- 16) Fixed costs that may be avoided in the future are referred to as 16) _____
A) opportunity costs. B) relevant costs.
C) sunk costs. D) replacement costs.
- 17) Which of the following describes a sunk cost? 17) _____
A) An outlay expected to be incurred in the future
B) A historical cost that is always irrelevant
C) One that is relevant to a decision because it changes depending on the alternative course of action selected
D) A historical cost that may be relevant
- 18) The effect of a plant closing on employee morale is an example of which of the following? 18) _____
A) A qualitative factor B) A variable cost
C) A quantitative factor D) A sunk cost
- 19) Which of the following is the format of the income statement most useful in decision-making? 19) _____
A) Traditional format B) Single-step format
C) Absorption costing format D) Contribution margin format

- 20) Smith Industries is considering replacing a machine that is presently used in its production process. The following information is available:

20) _____

	Old Machine	Replacement Machine
Original cost	\$45,000	\$35,000
Remaining useful life in years	5	5
Current age in years	5	0
Book value	\$25,000	
Current disposal value in cash	\$8,000	
Future disposal value in cash (in 5 years)	\$0	\$0
Annual cash operating costs	\$7,000	\$4,000

Which of the information provided in the table is irrelevant to the replacement decision?

- A) The current disposal value of the old machine
B) The annual operating cost of the old machine
C) The original cost of the old machine
D) Both A and C
- 21) When making any sort of decision, managers should consider
- A) revenues that differ among alternatives. B) only fixed costs.
C) sunk costs. D) only variable costs.

21) _____

- 22) When making decision managers should ignore
- A) sunk costs.
B) revenues that differ among alternatives.
C) variable costs.
D) fixed costs that differ among alternatives.

22) _____

- 23) The Gameshop manufactures specialized board games. Management is attempting to search for ways to reduce costs and is considering two alternatives for an upcoming project of special games that must be delivered to the customer in 12 months' time. Management agreed to the special project job as they have an idle plant that is scheduled for demolition 18 months from now, and either alternative will easily meet the delivery deadline.

23) _____

Alternative 1 requires 10 machine operators and 2.5 individuals to handle direct materials. Employee pay averages \$17.50 per hour and will increase to \$18.50 at the mid-point (July 1) of next year. Each employee currently works 2,500 hours but will decrease to 2,400 hours if Alternative 2 is implemented. The second proposal only requires 8.5 workers.

Which of the following items of information are relevant to this decision?

- A) The timing of the wage increase
B) Hourly wage rates
C) The delivery deadline
D) The number of employees required in each alternative

- 24) Jansen Industries is considering replacing a machine that is presently used in its production process. The following information is available:

24) _____

	Old Machine	Replacement Machine
Original cost	\$25,000	\$35,000
Remaining useful life in years	1	5
Current age in years	5	0
Book value	\$5,000	
Current disposal value in cash	\$3,000	
Future disposal value in cash (in 5 years)	\$0	\$2,000
Annual cash operating costs	\$7,000	\$4,000

Which of the information provided in the table is irrelevant to the replacement decision?

- A) The current disposal value of the old machine
- B) The future disposal value of the replacement machine
- C) The annual operating cost of the old machine
- D) The original cost of the old machine

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

- 25) Green Lumber Inc is considering buying a new piece of equipment. The new equipment will replace an existing machine and will produce lumber 30% faster than the old machine. The increased flow of production will require Green Lumber to hire additional salespeople (at salaries).
The old machine requires frequent repairs and maintenance while the new one will require maintenance only once per year. The new machine will be purchased on credit requiring Green Lumber to pay interest on the amount borrowed. The old machine is completely paid for.

25) _____

Identify whether the following costs are relevant or irrelevant to Green Lumber's decision

- a The cost of the new machine
- b The original price of the old machine
- c Interest expense on the new machine
- d Fixed selling expenses
- e Variable cost of raw materials
- f The book value of the old machine
- g The market value of the old machine
- h The repairs and maintenance cost of the old machine
- i The maintenance cost of the new machine

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

- 26) What is the difference between relevant and irrelevant information for making decisions? Provide examples of each.
- 27) In 2013 Yahoo CEO, Marissa Mayer, made news when the company's policy of allowing employees to work from home was eliminated. Provide two examples each of advantages and disadvantages to the company from implementing this policy change. How will this change effect environmental sustainability?

28) Explain what is meant by the term sunk cost and why sunk costs are irrelevant to decisions.

MATCHING. Choose the item in column 2 that best matches each item in column 1.

Match the following:

- | | | |
|---|---------------|-----------|
| 29) Cost of previous year's insurance policy on old equipment being evaluated for replacement | A) Irrelevant | 29) _____ |
| | B) Relevant | |
| 30) The cost of insurance on a new vehicle when deciding to buy a new vehicle | | 30) _____ |
| 31) Cost of roof repair made on rental property last year | | 31) _____ |
| 32) Original cost of old equipment that is being evaluated for replacement | | 32) _____ |
| 33) Cost of new equipment under evaluation to replace used equipment evaluation to replace used equipment | | 33) _____ |
| 34) Accumulated depreciation on old equipment being evaluated for replacement | | 34) _____ |

TRUE/FALSE. Write 'T' if the statement is true and 'F' if the statement is false.

- | | |
|--|-----------|
| 35) When setting prices, a company must consider whether it is a price-taker or a price-setter for each product that it sells. | 35) _____ |
| 36) A price-setter company emphasizes a target costing approach to pricing. | 36) _____ |
| 37) For a product, revenue at market price plus desired operating profit equals target total cost. | 37) _____ |
| 38) Price-setters sell products that lack uniqueness. | 38) _____ |
| 39) Price-takers can apply cost plus pricing. | 39) _____ |
| 40) Price-takers emphasize target costing. | 40) _____ |
| 41) When a company is a price-setter, it emphasizes a cost-plus approach to pricing. | 41) _____ |

- 42) In setting regular sales prices it does not matter if the costs are fixed or variable. 42) _____
- 43) Cost-plus price minus desired profit equals total cost. 43) _____
- 44) Product differentiation allows companies to become more of a price-taker, and less of a price setter. 44) _____
- 45) Managers only need to consider inventoriable product costs when setting prices. 45) _____
- 46) Managers only need to consider variable costs when setting prices. 46) _____
- 47) Cost-plus pricing is essentially the opposite of target-costing. 47) _____
- 48) Companies tend to be price-setters when there is less competition. 48) _____
- 49) A cost-plus approach to pricing is more likely than a target costing approach when the product is unique in terms of features, service, or quality. 49) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 50) Which of the following best describes "total cost of product or service"? 50) _____
A) All costs incurred along the value chain in connection with the product or service
B) Benefits foregone by not choosing an alternative course of action
C) Costs that were incurred in the past and can not be changed
D) A factor that restricts production or sales of a product
- 51) Which of the following describes the products and services of companies that are price-setters? 51) _____
A) They are priced by managers using a target-costing emphasis.
B) They tend to be commodities.
C) They tend to have a lot of competitors.
D) They tend to be unique.
- 52) Which of the following describes the cost-plus price? 52) _____
A) Variable cost plus desired profit
B) Total cost plus desired profit
C) Target total cost plus desired profit
D) Revenue at market price plus desired profit
- 53) When pricing a product or service, managers must consider which of the following? 53) _____
A) Only manufacturing costs
B) Only period costs
C) Only variable costs
D) All costs

- 54) Which of the following pairs are characteristics of price-takers? 54) _____
- A) Cost-plus pricing and lack of product uniqueness
 - B) Target costing and heavy competition
 - C) Less competition and target pricing
 - D) Cost-plus pricing and less competition
- 55) Which of the following pairs are characteristics of price-setters? 55) _____
- A) Less competition and lack of product uniqueness
 - B) Lack of product uniqueness and heavy competition
 - C) Less competition and target costing
 - D) Cost-plus pricing and less competition
- 56) Big-box retailers such as Best Buy are considered price-takers because 56) _____
- A) there is less competition in the consumer electronics retail sector.
 - B) their products are not unique.
 - C) they emphasize cost-plus pricing.
 - D) their products are unique.

Use the information below to answer the following question(s):

Green Pastures golf course is planning for the coming season. Investors would like to earn a 10% return on the company's \$40 of assets. The company primarily incurs fixed costs to groom the greens and fairways. Fixed costs are projected to be \$15,000,000 for the golfing season. About 400,000 golfers are expected each year. Variable costs are about \$20 per golfer.

- 57) Using a cost-plus approach, what price should Green Pastures charge for a round of golf? 57) _____
- A) \$0.17 B) \$61.25 C) \$67.50 D) \$47.50
- 58) If the Green Pastures golf course is a price-taker and won't be able to charge more than its competitors who charge \$75 per round of golf. What profit will it earn in terms of dollars? 58) _____
- A) \$(15,000,000) B) \$(7,000,000) C) \$15,000,000 D) \$7,000,000
- 59) If the Green Pastures golf course is a price-taker and won't be able to charge more than its competitors who charge \$75 per round of golf. What profit will it earn as a percent of assets? 59) _____
- A) Profit of 57.50% B) Loss of 17.50%
- C) Profit of 17.50% D) Loss of 57.50%

Use the information below to answer the following question(s):

Mountaintop golf course is planning for the coming season. Investors would like to earn a 12% return on the company's \$45 million assets. The company primarily incurs fixed costs to groom the greens and fairways. Fixed costs are projected to be \$20,000,000 for the golfing season. About 400,000 golfers are expected each year. Variable costs are about \$15 per golfer.

- 60) Using a cost-plus approach, what price should Mountaintop charge for a round of golf? 60) _____
- A) \$51.50 B) \$78.50 C) \$71.00 D) \$ 0.21

- 61) If the Mountaintop golf course is a price-taker and won't be able to charge more than its competitors who charge \$75 per round of golf. What profit will it earn as a percent of assets? 61) _____
- A) Profit of 35.56% B) Loss of 8.89%
C) Profit of 8.89% D) Loss of 57.67%

- 62) If the Mountaintop golf course is a price-taker and won't be able to charge more than its competitors who charge \$75 per round of golf. What profit will it earn in terms of dollars? 62) _____
- A) \$4,000,000 B) \$(20,000,000) C) \$(4,000,000) D) \$16,000,000

Use the information below to answer the following question(s):

Rosemont Tennis is planning for the coming year. Investors would like to earn a 12% return on the company's \$25 million of assets. The company primarily incurs fixed costs to maintain the tennis courts. Fixed costs are projected to be \$12,500,000 for the year. 500,000 court time hours are expected to be played each year. Variable costs are about \$5 per hour of court time.

- 63) Using a cost-plus approach, what price should Rosemont Tennis charge for an hour of court time? 63) _____
- A) \$33.00 B) \$0.20 C) \$36.00 D) \$24.00
- 64) If Rosemont Tennis is a price-taker and won't be able to charge more than its competitors who charge \$32.50 per hour of court time. What profit will it earn in terms of dollars? 64) _____
- A) \$(1,250,000) B) \$(12,500,000) C) \$6,250,000 D) \$1,250,000
- 65) If Rosemont Tennis is a price-taker and won't be able to charge more than its competitors who charge \$32.50 per hour of court time. What profit will it earn as a percent of assets? 65) _____
- A) Profit of 25% B) Loss of 25% C) Profit of 5% D) Loss of 5%

Use the information below to answer the following question(s):

Philadelphia Swim Club is planning for the coming year. Investors would like to earn a 10% return on the company's \$30 million assets. The company primarily incurs fixed costs to maintain the swimming pool. Fixed costs are projected to be \$12,500,000 for the year. About 500,000 members are expected to swim each year. Variable costs are about \$10 per swimmer.

- 66) Using a cost-plus approach, what price should Philadelphia Swim Club charge for a membership? 66) _____
- A) \$41.00 B) \$ 0.17 C) \$29.00 D) \$37.50
- 67) If the Philadelphia Swim Club is a price-taker and won't be able to charge more than its competitors who charge \$37.00 for a membership. What profit will it earn in terms of dollars? 67) _____
- A) \$1,000,000 B) \$(1,000,000) C) \$11,000,000 D) \$(12,500,000)
- 68) If the Philadelphia Swim Club is a price-taker and won't be able to charge more than its competitors who charge \$37.00 for a membership. What profit will the Philadelphia Swim Club earn as a percent of assets? 68) _____
- A) Loss of 58.17% B) Profit of 3.33%
C) Loss of 3.33% D) Profit of 36.67%

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

- 69) Burr Hill golf course is planning for the coming season. Investors would like to earn a 10% return on the company's \$50 million of assets. The company primarily incurs fixed costs to groom the greens and fairways. Fixed costs are projected to be \$25 million for the golfing season. About 500,000 golfers are expected each year. Variable costs are about \$10 per golf. The Burr Hill course has a favourable reputation in the area and therefore, has some control over the price of a round of golf. 69) _____

Required:

1. What are Burr Hill's total costs?
2. What is Burr Hill's target revenue?
3. What will Burr Hill's revenue be at a market price of \$65/round?
4. What will Burr Hill's expected profit shortfall be if it charges \$65/round?

- 70) Good Looks Fitness operates a large fitness centre in a University Town. Being the newest fitness centre in the area with the most modern and best equipment and staff Good Looks believes they can set their price at a level above their competition. The owners would like to earn a 15% return on the company's \$2,000,000 in assets. The company incurs primarily fixed costs to maintain and staff the centre. Good Looks projects fixed costs to be \$580,000 fixed for the upcoming year. Good Looks is a pay per use facility and expects to serve 55,000 customers during the year. Variable costs are estimated at \$5 per customer visit. 70) _____

Required:

1. What price per visit must Good Looks charge to earn the owners desired profit?
2. What is the revenue surplus or shortfall if Good Looks charges \$20 per customer visit?

- 71) Holsom Cakes is an independent gourmet bakery specializing in special occasion cakes. Being a small operation Holsom is a price taker. The current market price for cakes similar to Holsom is \$45. Holsom incurs monthly fixed costs for rent, equipment depreciation and salaries of \$6,500. While there are small differences between cakes management believes using the average cost for ingredients and variable overhead of \$15 would be sufficiently accurate for planning purposes. Holsom's owners believe they will sell 250 cakes per month at the market price of \$45. 71) _____

Required:

Can Holsom's owners earn an 18% annual return on their invested capital of \$200,000 under this cost structure and pricing?

- 72) Holsom Cakes is an independent gourmet bakery specializing in special occasion cakes. Being a small operation Holsom is a price taker. The current market price for cakes similar to Holsom is \$40. Holsom incurs monthly fixed costs for rent, equipment depreciation and salaries of \$7,500. While there are small differences between cakes management believes using the average cost for ingredients and variable overhead of \$12 would be sufficiently accurate for planning purposes. Holsom's owners believe they will sell 300 cakes per month at the market price of \$40. 72) _____

Required:

Can Holsom's owners earn an 18% annual return on their invested capital of \$200,000 under this cost structure and pricing?

- 73) Holsom Cakes is an independent gourmet bakery specializing in special occasion cakes. Because of its small operation Holsom is a price taker. The current market price for cakes similar to Holsom's is \$40. Holsom incurs monthly fixed costs for rent, equipment depreciation and salaries of \$7,500. While there are small differences between cakes management believes using the average cost for ingredients and variable overhead of \$12 would be sufficiently accurate for planning purposes. Holsom's owners believe they will sell 300 cakes per month at the market price of \$40.

Required:

1. Can Holsom's owners earn an 18% annual return on their invested capital of \$200,000 under this cost structure and pricing?
2. What is the minimum number of cakes Holsom's would have to sell in order to earn their owners' desired rate of return on investment?

- 74) Green Valley golf course is planning for the coming season. Investors would like to earn a 14% return on the company's \$45 million of assets. The company primarily incurs fixed costs to groom the greens and fairways. Fixed costs are projected to be \$18,000,000 for the golfing season. About 400,000 golfers are expected each year. Variable costs are about \$8 per golfer. The Green Valley golf course has a favourable reputation in the area and therefore, has some control over the price of a round of golf. Using a cost-plus approach, what price should Green Valley charge for a round of golf?

- 75) Ramar Builders builds townhomes in a new subdivision just outside of Halifax. Land and labour are cheap, and competition among developers is fierce. The homes in the subdivision are identical to one another, but buyers can upgrade features by paying the difference. Ramar Builders' costs per developed sub-lot are as follows:

Land	\$ 55,000
Construction (labour and materials)	\$125,000
Landscaping	\$ 7,000
Variable marketing costs	\$ 1,500

Ramar Builders would like to earn a profit of 12% of the variable cost of each home sale. Since the homes offered by competing builders sell for \$200,000 each.

Requirements:

1. Which approach to pricing should Ramar Builders emphasize? Why?
2. Will Ramar Builders be able to achieve its target profit levels? Show your computation.

- 76) Ramar Builders builds townhomes in a new subdivision just outside of Halifax. Land and labour are cheap, and competition among developers is fierce. The homes in the subdivision are identical to one another, but buyers can upgrade features by paying the difference. Ramar Builders' costs per developed sub-lot are as follows: 76) _____

Land	\$ 45,000
Construction (labour and materials)	\$125,000
Landscaping	\$ 6,500
Variable marketing costs	\$ 2,500

Ramar Builders would like to earn a profit of 12% of the variable cost of each home sale. Since homes offered by competing builders sell for \$205,000 each.

Requirements:

1. Which approach to pricing should Ramar Builders emphasize? Why?
2. Will Ramar Builders be able to achieve its target profit levels? Show your computation

Use the information below for the next group of questions:

Aire Breeze makes furnace air filters. It has been able to develop a unique product. Its budget for the upcoming year for the production of 200,000 filters is \$200,000 in fixed manufacturing costs and \$125,000 in fixed marketing and administrative cost. Variable costs are \$1.50 per unit for manufacturing and \$0.25 for marketing and administration. Aire Breeze's shareholders expect a 15% annual return on their \$1,000,000 investment.

- 77) What approach to pricing should Aire Breeze use? Why? 77) _____

- 78) What price should Aire Breeze set for its filter? 78) _____

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

- 79) Explain the three basic questions managers typically start with when setting the regular price of their product or service.

TRUE/FALSE. Write 'T' if the statement is true and 'F' if the statement is false.

- 80) When using a target costing approach, the company starts with revenue at market price, and then subtracts its desired profit, to yield the target total cost. 80) _____

- 81) When using a target costing approach, the company starts with total costs then adds desired profit and divides by the expected number of units to determine the price. 81) _____

- 82) When using a target costing approach, if the target cost is lower than the company's cost one consideration is to accept a lower profit. 82) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 83) Which of the following describes the target total cost? 83) _____
- A) Total cost minus actual cost
 - B) Revenue at market price minus desired profit
 - C) Revenue at market price plus desired profit
 - D) Total cost plus desired profit
- 84) Target total cost is defined as 84) _____
- A) cost of goods sold less desired profit.
 - B) revenue at market price less variable costs.
 - C) revenue at market price less desired profit.
 - D) revenue at market price less fixed costs.

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

- 85) Good Looks Fitness operates a large fitness centre in a University Town. Being the newest fitness centre in the area Good Looks believes they must be a price taker until they establish a reputation for quality service. Other fitness centres in the area are charging \$20 per customer visit. The owners would like to earn a 15% return on the company's \$2,000,000 in assets. The company incurs primarily fixed costs to maintain and staff the centre. Good Looks projects fixed costs to be \$580,000 fixed costs for the upcoming year. Good Looks is a pay per use facility and expects to serve 55,000 customers during the year. Variable costs are estimated at \$5 per customer visit. The management accountant employed by Good Looks has determined that the target profitability cannot be achieved under the present cost structure at a price of \$20 per customer visit. The accountant believes fixed costs can be reduced by \$27,500. 85) _____

Required:

If the fixed cost reduction is achieved what is the maximum variable cost per customer visit will allow Good looks to achieve the target profitability?

- 86) Green Pastures golf course is planning for the coming season. Investors would like to earn a 12% return on the company's \$40 million of assets. The company primarily incurs fixed costs to groom the greens and fairways. Fixed costs are projected to be \$20 million for the golfing season. About 500,000 golfers are expected each year. Variable costs are about \$12 per golfer. Green Pastures golf course is a price-taker and won't be able to charge more than \$60 per round because of local competition. 86) _____

What will Green Pastures' expected profit shortfall be if it charges \$60/round?

- 87) Green Valley golf course is planning for the coming season. Investors would like to earn a 14% return on the company's \$45 million of assets. The company primarily incurs fixed costs to groom the greens and fairways. Fixed costs are projected to be \$18,000,000 for the golfing season. About 400,000 golfers are expected each year. Variable costs are about \$8 per golfer. The Green Valley golf course is a price-taker and won't be able to charge more than its competitors who charge \$65 per round of golf. What profit will it earn compared to what investors wanted? State your answer in dollars and as a percent of assets. Will investors be happy with the profit level? 87) _____

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

- 88) What the reasons a firm would adopt target costing?

MATCHING. Choose the item in column 2 that best matches each item in column 1.

Match the following:

- | | | |
|------------------------------|-----------------|-----------|
| 89) Less competition | A) Price-setter | 89) _____ |
| 90) Cost-plus pricing | B) Price-taker | 90) _____ |
| 91) Product lacks uniqueness | | 91) _____ |
| 92) Target pricing | | 92) _____ |
| 93) Heavy competition | | 93) _____ |

TRUE/FALSE. Write 'T' if the statement is true and 'F' if the statement is false.

- 94) Special orders increase income if the revenue from the order exceeds the incremental variable and fixed costs incurred to fill the order. 94) _____
- 95) In deciding whether to accept a special sales order, any fixed costs that would remain unchanged are considered irrelevant data. 95) _____
- 96) Variable costs are relevant to a special decision when those variable costs differ between alternatives. 96) _____
- 97) Managers should consider the potential long-run effect of a special order. 97) _____
- 98) When deciding whether to accept a special order, managers need not consider whether they have available excess capacity. 98) _____
- 99) If the expected increase in revenues from a special order is less than the expected increase in variable and fixed costs, then the special order should be accepted. 99) _____

100) Absorption costing should be used when making special order decisions. 100) _____

101) A company's capacity must be considered when making special order decisions. 101) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

102) In a special sales order decision, incremental fixed costs that will be incurred if the special order is accepted are considered to be 102) _____

- A) sunk costs.
- B) irrelevant to the decision.
- C) opportunity costs.
- D) relevant to the decision.

103) When deciding whether to accept a special order, which of the following is irrelevant? 103) _____

- A) The variable costs associated with the special order
- B) The effect of the order on regular sales
- C) Fixed costs that will not be affected by the order
- D) Available excess capacity

104) A manager should always reject a special order if 104) _____

- A) the special order will require variable nonmanufacturing expenses.
- B) the special order price is less than the regular sales price.
- C) there is available excess capacity.
- D) the special order price is less than the variable costs of the order.

105) When making a short-term special order decision, a company should 105) _____

- A) focus on quantitative factors only.
- B) separate variable costs from fixed costs.
- C) focus on qualitative factors only.
- D) use a traditional direct costing approach.

Clear Sky Sailmakers manufactures sails for sailboats. The company has the capacity to produce 15,000 sails per year, but is currently producing and selling 10,000 sails per year. The following information relates to current production:

Sale price per unit	\$1,050
Variable costs per unit:	
Manufacturing	\$615
Marketing and administrative	\$150
Total fixed costs:	
Manufacturing	\$750,000
Marketing and administrative	\$200,000

- | | | | |
|------|---|------|--------------------------|
| 106) | If Clear Sky Sailmakers accepts a special order for 200 sails at a price of \$850 per unit, and fixed costs remain unchanged, how would operating income be affected? (NOTE: Assume regular sales are not affected by the special order.) | 106) | _____ |
| | A) Increase by \$170,000 | | B) Decrease by \$17,000 |
| | C) Increase by \$17,000 | | D) Decrease by \$10,000 |
| 107) | If Clear Sky Sailmakers accepts a special order for 300 sails at a price of \$650 per unit, fixed costs remain unchanged, and no variable marketing and administrative costs will be incurred for this order, how would operating income be affected? (NOTE: Assume regular sales are not affected by the special order.) | 107) | _____ |
| | A) Increase by \$13,500 | | B) Increase by \$195,000 |
| | C) Decrease by \$13,500 | | D) Decrease by \$63,000 |
| 108) | If Clear Sky Sailmakers accepts a special order for 500 sails at a price of \$820 per unit, and fixed costs increase by \$15,000, how would operating income be affected? (NOTE: Assume regular sales are not affected by the special order.) | 108) | _____ |
| | A) Increase by \$12,500 | | B) Decrease by \$15,000 |
| | C) Increase by \$3,000 | | D) Decrease by \$35,000 |
| 109) | If Clear Sky Sailmakers accepts a special order for 250 sails at a price of \$805 per unit, fixed costs increase by \$45,000, and variable marketing and administrative costs for that order are \$25 per unit, how would operating income be affected? (NOTE: Assume regular sales are not affected by the special order.) | 109) | _____ |
| | A) Increase by \$23,500 | | B) Decrease by \$23,500 |
| | C) Decrease by \$3,750 | | D) Increase by \$3,750 |

Use the information below to answer the following question(s):

Woodson Corporation provided the following information regarding its only product:

Sale price per unit	\$65.00
Direct materials used	\$160,000
Direct labour incurred	\$185,000
Variable manufacturing overhead	\$120,000
Variable selling and administrative expenses	\$70,000
Fixed manufacturing overhead	\$65,000
Fixed selling and administrative expenses	\$12,000
Units produced and sold	10,000
Assume no beginning inventory	

- 110) Assuming there is excess capacity at Woodson Corporation, what would be the effect on operating income of accepting a special order for 1,000 units at a sale price of \$55 per product? (NOTE: Assume regular sales are not affected by the special order.) 110) _____
- A) Decrease by \$1,500 B) Increase by \$108,500
C) Increase by \$1,500 D) Increase by \$55,000
- 111) Assuming there is excess capacity at Woodson Corporation, what would be the effect on operating income of accepting a special order for 1,200 units at a sale price of \$60 per product assuming additional fixed manufacturing overhead costs of \$5,000 is incurred? (NOTE: Assume regular sales are not affected by the special order.) 111) _____
- A) Increase by \$72,000 B) Increase by \$2,800
C) Decrease by \$2,800 D) Increase by \$7,800
- 112) Assuming there is excess capacity at Woodson Corporation, what would be the effect on operating income of accepting a special order for 800 units at a sale price of \$52 per product? The 800 units would not require any variable selling and administrative expenses. (NOTE: Assume regular sales are not affected by the special order.) 112) _____
- A) Increase by \$78,800 B) Decrease by \$1,200
C) Decrease by \$4,400 D) Increase by \$4,400
- 113) Swisser Vase Company manufactures and sells vases. Great Products Company has offered Swisser Vase \$16 per vase for 5,000 vases. Swisser Vase's normal selling price is \$28 per vase. The total manufacturing cost per vase is \$18 and consists of variable costs of \$14 per vase and fixed overhead costs of \$4 per vase. (NOTE: Assume excess capacity and no effect on regular sales.) 113) _____
- Should Swisser Vase accept or reject the special sales order?
- A) Accept, because operating income would increase \$150,000.
B) Accept, because operating income would increase \$10,000.
C) Reject, because operating income would decrease \$70,000.
D) Reject, because operating income would decrease \$10,000.

- 114) Glow Sticks Corporation manufactures and sells glow-in-the-dark necklaces for \$10 each. The company has the capacity to produce 25,000 necklaces in a year, but is currently producing and selling 20,000 necklaces per year. The company currently is incurring the following costs at its current production level of 20,000 necklaces:

114) _____

Variable manufacturing costs	\$60,000
Fixed manufacturing costs	\$90,000
Variable selling and administrative costs	\$75,000
Fixed selling and administrative costs	\$50,000

An amusement park is interested in purchasing the excess capacity of 5,000 necklaces if it can receive a special price. This special order would not affect Glow Sticks Corporation's regular sales or its cost structure. Glow Sticks Corporation's profits would increase from this special order if the special order price per necklace is greater than

- A) \$5.40. B) \$3.00. C) \$6.75. D) \$7.50.

- 115) Forge Company produces cast-iron skillets. A local campground recently made a special order offer; the campground would like to purchase 1,000 skillets branded with their logo. Forge Company is currently producing and selling 20,000 skillets; the company has the excess capacity to handle this special order. The campground has offered to pay \$30 for each skillet. An accountant at Forge Company provides an estimate of the unit product cost as follows:

115) _____

Direct materials	\$6.00
Direct labour (variable)	\$3.50
Variable manufacturing overhead	\$1.00
Fixed manufacturing overhead	\$4.00
Total unit cost	\$14.50

This special order would require an investment of \$5,000 for the molds required for the custom logo brand. These molds would have no other purpose and would have no salvage value. The special order skillets would also have an additional variable cost of \$2.00 per unit associated with the custom logo. This special order would not have any effect on the company's other sales. If the special order is accepted, the company's operating income would increase (decrease) by

- A) \$12,500. B) \$15,500. C) \$10,500. D) \$19,500.

Use the information below to answer the following question(s):

The following information relates to current production of bench seats for boats at Aquamarine Manufacturing:

Variable manufacturing costs per unit	\$102
Total fixed manufacturing costs	\$525,000
Variable marketing and administrative costs per unit	\$30
Total fixed marketing and administrative costs	\$250,000

The regular selling price per bench seat is \$200. The company has the capacity to produce 15,000 bench seats per year, but is currently producing and selling 10,000 bench seats per year.

- 116) Aquamarine Manufacturing is analyzing the opportunity to accept a special sales order for 3,000 bench seats at a price of \$175 per unit. Fixed costs would remain unchanged. Regular sales will not be affected by the special order. If the company were to accept this special order, how would operating income be affected? 116) _____
- A) Increase by \$129,000 B) Decrease by \$129,000
C) Increase by \$525,000 D) Decrease by \$525,000
- 117) Aquamarine Manufacturing is analyzing the opportunity to accept a special sales order for 2,000 bench seats at a price of \$150 per unit. Fixed costs would remain unchanged. The variable marketing and administrative costs of \$30 per unit would NOT be incurred on this special order. Regular sales will not be affected by the special order. If the company were to accept this special order, how would operating income be affected? 117) _____
- A) Decrease by \$36,000 B) Increase by \$96,000
C) Increase by \$36,000 D) Decrease by \$96,000
- 118) Aquamarine Manufacturing is analyzing the opportunity to accept a special sales order for 2,500 bench seats at a price of \$155 per unit. Fixed costs would increase by \$10,000. Regular sales will not be affected by the special order. If the company were to accept this special order, how would operating income be affected? 118) _____
- A) Decrease by \$57,500 B) Decrease by \$47,500
C) Increase by \$47,500 D) Increase by \$57,500
- 119) Aquamarine Manufacturing is analyzing the opportunity to accept a special sales order for 3,000 bench seats at a price of \$140 per unit. Variable marketing and administrative costs would be \$15 per unit lower than on regular sales. Fixed costs would increase by \$10,000. Regular sales will not be affected by the special order. If the company were to accept this special order, how would operating income be affected? 119) _____
- A) Increase by \$59,000 B) Decrease by \$59,000
C) Decrease by \$69,000 D) Increase by \$69,000

Use the information below to answer the following question(s):

Venus Corporation provided the following information regarding its single product:

Direct materials used	\$240,000
Direct labour incurred	\$420,000
Variable manufacturing overhead	\$160,000
Fixed manufacturing overhead	\$100,000
Variable selling and administrative expenses	\$60,000
Fixed selling and administrative expenses	\$20,000

The regular selling price for the product is \$75. The annual quantity of units produced and sold is 20,000 units (the costs above to the 20,000 units production level). There was no beginning inventory.

- 120) What would be the effect on Venus Corporation's operating income of accepting a special order for 3,000 units at a sale price of \$65 per product? The company has excess capacity and regular sales will not be affected by this special order. 120) _____
- A) Increase by \$63,000 B) Decrease by \$63,000
C) Increase by \$327,000 D) Decrease by \$327,000
- 121) What would be the effect on Venus Corporation's operating income of accepting a special order for 2,000 units at a sale price of \$45 per product assuming additional fixed manufacturing overhead costs of \$7,000 are incurred? The company has excess capacity and regular sales will not be affected by this special order. 121) _____
- A) Decrease by \$5,000 B) Increase by \$2,000
C) Increase by \$5,000 D) Decrease by \$2,000
- 122) What would be the effect on Venus Corporation's operating income of accepting a special order for 1,500 units at a sale price of \$40 per product? The special order units would not require any variable selling and administrative expenses. The company has excess capacity and regular sales will not be affected by this special order. 122) _____
- A) Decrease by \$6,000 B) Decrease by \$1,500
C) Increase by \$1,500 D) Increase by \$6,000

Use the information below to answer the following question(s):

Pluto Incorporated provided the following information regarding its single product:

Direct materials used	\$240,000
Direct labour incurred	\$420,000
Variable manufacturing overhead	\$160,000
Fixed manufacturing overhead	\$100,000
Variable selling and administrative expenses	\$60,000
Fixed selling and administrative expenses	\$20,000

The regular selling price for the product is \$80. The annual quantity of units produced and sold is 40,000 units (the costs above to the 40,000 units production level). There was no beginning inventory.

- 123) What would be the effect on operating income of accepting a special order for 3,500 units at a sale price of \$55 per product? The company has excess capacity and regular sales will not be affected by this special order. 123) _____
- A) Decrease by \$269,500 B) Increase by \$269,500
C) Increase by \$115,500 D) Decrease by \$115,500
- 124) What would be the effect on operating income of accepting a special order for 1,500 units at a sale price of \$50 per product assuming additional fixed manufacturing overhead costs of \$10,000 are incurred? The company has excess capacity and regular sales will not be affected by this special order. 124) _____
- A) Decrease by \$42,000 B) Increase by \$42,000
C) Decrease by \$32,000 D) Increase by \$32,000
- 125) What would be the effect on operating income of accepting a special order for 1,000 units at a sale price of \$40 per product? The special order units would not require any variable selling and administrative expenses. The company has excess capacity and regular sales will not be affected by this special order. 125) _____
- A) Decrease by \$19,500 B) Increase by \$18,000
C) Increase by \$19,500 D) Decrease by \$18,000
- 126) What would be the effect on operating income of accepting a special order for 1,000 units at a sale price of \$35 per product? This special order would require the purchase of a stamping machine to imprint the name of customer on each unit. This machine costs \$15,000 and would have no residual value at the end of the production. The company has excess capacity and regular sales will not be affected by this special order. 126) _____
- A) Decrease of \$2,000 B) Decrease of \$15,000
C) Increase of \$2,000 D) Increase of \$13,000

- 127) Apex Company produces artificial Christmas trees. A local shopping mall recently made a special order offer; the shopping mall would like to purchase 200 extra-large white trees. Apex Company currently producing and selling 20,000 trees; the company has the excess capacity to handle this special order. The shopping mall has offered to pay \$120 for each tree. An accountant at Apex Company provides an estimate of the unit product cost as follows:

127) _____

Direct materials	\$50.00
Direct labour (variable)	\$3.50
Variable manufacturing overhead	\$1.00
Fixed manufacturing overhead	\$4.00
Total unit cost	\$14.50

This special order would require an investment of \$10,000 for the molds required for the extra-large trees. These molds would have no other purpose and would have no salvage value. The special order trees would also have an additional variable cost of \$5.00 per unit associated with having a white tree. This special order would not have any effect on the company's other sales. If the special order is accepted, the company's operating income would increase (decrease) by

- A) \$2,100 increase. B) \$13,100 increase.
C) \$13,100 decrease. D) \$2,300 decrease.

- 128) Each month, Tuttle Corporation produces 400 units of a product that has unit variable costs of \$16.00. Total fixed costs for the month are \$3,400. A special sales order is received for 100 units of the product at a price of \$18 per unit. In deciding to accept or reject the special sales order, it is appropriate to consider the

128) _____

- A) current fixed cost per unit of \$8.50.
B) difference between the offered price and the variable cost per unit, or \$2.00.
C) difference between the two fixed costs per unit, or \$1.70.
D) new fixed cost per unit of \$6.80.

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

- 129) X Factor Sports received a special order for 1,000 units of its extreme snowboards at a selling price of \$60 per snowboard. X Factor Sports has enough extra capacity to accept the order. No additional selling costs will be incurred.

129) _____

Unit costs to make and sell this product are as follows: direct materials, \$34; direct labour, \$8; variable manufacturing overhead, \$14; fixed manufacturing overhead, \$10.

- A) List the relevant costs.
B) What will be the change in operating income if X Factor Sports accepts the special order?
C) Should X Factor Sports accept the special order?

- 130) The Shoop Corporation produces and sells a part used in the production of tractors. The unit costs associated with this part are as follows:

Direct materials	\$.16
Direct labour	.32
Variable manufacturing overhead	.25
Fixed manufacturing overhead	<u>.10</u>
Total cost	<u><u>\$.83</u></u>

Jupiter Company has approached Shoop Corporation with an offer to purchase 20,000 units of this part at a price of \$.72. Accepting this special sales order will put idle manufacturing capacity to use and will not affect regular sales. Total fixed costs will not change.

Determine whether or not the special order should be accepted. Justify your conclusion.

- 131) Snow Sports Company received a special order for 1,000 units of its extreme snowboards at a selling price of \$40 per snowboard. Snow Sports has enough capacity to accept the order. The costs to make and sell this product are as follows: Direct Materials \$12; Direct Labour \$19; Variable Manufacturing Overhead \$6; Fixed Manufacturing Overhead \$12; and Variable Selling Costs \$5.

List the relevant costs (and amount) to Snow Sports Company for this special order.

- 132) Snow Sports Company received a special order for 1,000 units of its extreme snowboards at a selling price of \$40 per snowboard. Snow Sports has enough capacity to accept the order. The costs to make and sell this product are as follows: Direct Materials \$12; Direct Labour \$19; Variable Manufacturing Overhead \$6; Fixed Manufacturing Overhead \$12; and Variable Selling Costs \$5.

What will be Snow Sports Company's change in operating income if they accept the special order? Should Snow Sports Company accept the order? Explain why or why not.

- 133) Roadrunner Manufacturing produces Item Q with variable manufacturing costs of \$16/unit. The selling price of Item Q is \$20/unit. The fixed manufacturing overhead cost is \$75,000. A normal production run includes 150,000 units. Roadrunner Manufacturing has discovered an additional process to change Item Q into Item QR. Additional costs are estimated at \$3/unit. Item QR would sell for \$24/unit. Additional fixed manufacturing overhead costs of \$4,500 would be incurred if Item QR is produced. There would be no change in the number of units produced.

What would be the operating income for Item QR?

- 134) Roadrunner Manufacturing produces Item Q with variable manufacturing costs of \$16/unit. The selling price of Item Q is \$20/unit. The fixed manufacturing overhead cost is \$75,000. A normal production run includes 150,000 units. Roadrunner Manufacturing has discovered an additional process to change Item Q into Item QR. Additional costs are estimated at \$3/unit. Item QR would sell for \$24/unit. Additional fixed manufacturing overhead costs of \$4,500 would be incurred if Item QR is produced. There would be no change in the number of units produced.

By what percent would Roadrunner Manufacturing's operating income improve if the change is made?

- 135) DataSave is a manufacturer of USB Flash Drives. Their 16GB model wholesales for \$32. DataSave has been approached by a major sports franchise with a special order for 25,000 flash drives in their team colours at a price of \$18 each. The special colouring will not add new costs. DataSave's total cost of production for this model is \$22 per USB, as follows:

Variable costs:	
Direct materials	\$11.50
Direct labour	3.75
Variable overhead	2.00
Fixed overhead	4.75
Total cost	<u>\$22.00</u>

Prepare an incremental analysis to determine whether DataSave should accept the special order assuming fixed costs would not be affected by the special order.

- 136) DataSave is a manufacturer of USB Flash Drives. Their 16GB model wholesales for \$32. DataSave has been approached by a major sports franchise with a special order for 25,000 flash drives in their team colours with a special team emblem attached at a price of \$18 each. The special colouring will not add any new costs, however, the emblem will be purchased at a cost of \$0.50 each and new equipment will be required at a cost of \$9,000. The new equipment is not expected to be of use for any future orders. DataSave's current total cost of production for this model is \$22 per USB, as follows:

Variable costs:	
Direct materials	\$11.50
Direct labour	3.75
Variable overhead	2.00
Fixed overhead	4.75
Total cost	<u>\$22.00</u>

Prepare an incremental analysis to determine whether DataSave should accept the special order assuming fixed costs would not be affected by the special order.

- 137) DataSave is a manufacturer of USB Flash Drives. Their 16GB model wholesales for \$32. DataSave has been approached by a major sports franchise with a special order for 25,000 flash drives in their team colours at a price of \$18 each. The special colouring will not add new costs. DataSave's total cost of production for this model is \$22 per USB, as follows:

137) _____

Variable costs:	
Direct materials	\$9.50
Direct labour	3.00
Variable overhead	2.25
Fixed overhead	<u>7.25</u>
Total cost	<u>\$22.00</u>

Prepare an incremental analysis to determine whether DataSave should accept the special order assuming fixed costs would not be affected by the special order.

- 138) DataSave is a manufacturer of USB Flash Drives. Their 16GB model wholesales for \$32. DataSave has been approached by a major sports franchise with a special order for 25,000 flash drives in their team colours with a special team emblem attached at a price of \$18 each. The special colouring will not add any new costs, however, the emblem will be purchased at a cost of \$0.40 each and new equipment will be required at a cost of \$12,000. The new equipment is not expected to be of use for any future orders. DataSave's current total cost of production for this model is \$22 per USB, as follows:

138) _____

Variable costs:	
Direct materials	\$9.50
Direct labour	3.00
Variable overhead	2.25
Fixed overhead	<u>7.25</u>
Total cost	<u>\$22.00</u>

Prepare an incremental analysis to determine whether DataSave should accept the special order assuming fixed costs would not be affected by the special order.

- 139) EasyFlow is a manufacturer of ball point pens. The pens wholesale for \$15 per dozen. EasyFlow has been approached by a major franchise with a special order for 75,000 dozen pens for a special promotional campaign at \$10 per dozen. EasyFlow's total cost of production is \$11 per dozen pens, as follows:

139) _____

Variable costs:	
Direct materials	\$5.75
Direct labour	1.00
Variable overhead	1.75
Fixed overhead	<u>2.50</u>
Total cost	<u>\$11.00</u>

Prepare an incremental analysis to determine whether EasyFlow should accept the special order assuming fixed costs would not be affected by the special order.

- 140) EasyFlow is a manufacturer of ball point pens. The pens wholesale for \$15 per dozen. EasyFlow has been approached by a major franchise with a special order for 75,000 dozen pens for a special promotional campaign at \$10 per dozen. In addition to the usual logo printed on the pens, the customer wants a special emblem attached. The emblem will cost EasyFlow \$0.25 per dozen. Specialized equipment to attach the emblem will be needed. The equipment cost is \$8,000 and is expected to have no use after this order. EasyFlow's total cost of production is \$11 per dozen pens, as follows:

Variable costs:	
Direct materials	\$5.75
Direct labour	1.00
Variable overhead	1.75
Fixed overhead	2.50
Total cost	<u>\$11.00</u>

Prepare an incremental analysis to determine whether EasyFlow should accept the special order assuming fixed costs would not be affected by the special order.

- 141) EasyFlow is a manufacturer of ball point pens. The pens wholesale for \$18 per dozen. EasyFlow has been approached by a major franchise with a special order for 50,000 dozen pens for a special promotional campaign at \$12 per dozen. EasyFlow's total cost of production is \$14 per dozen pens, as follows:

Variable costs:	
Direct materials	\$4.75
Direct labour	2.00
Variable overhead	2.00
Fixed overhead	5.25
Total cost	<u>\$14.00</u>

Prepare an incremental analysis to determine whether EasyFlow should accept the special order assuming fixed costs would not be affected by the special order.

- 142) Quick Lift manufactures motorcycle power lift ramps for loading motorcycles into the bed pickup truck in Erin. Quick Lift's contribution margin income statement for the most recent month contains the following data:

Sales in units	150
Sales revenue	<u>\$464,000</u>
Variable expenses:	
Manufacturing	\$270,000
Marketing and administrative and shipping	<u>67,500</u>
Total variable expenses	<u>\$337,500</u>
Contribution margin.	<u>\$ 126,500</u>
Fixed expenses:	
Manufacturing	54,000
Marketing and administrative	<u>26,500</u>
Total fixed expenses	<u>80,500</u>
Operating income.	<u><u>\$46,000</u></u>

Southern Ontario Riders' Group (SORG) wants to buy 75 lifts from Quick Lift. Acceptance of the order will not increase Quick Lift's variable marketing and administrative expenses or of its fixed expenses. The Quick Lift plant has enough unused capacity to manufacture the additional lifts. SORG has offered \$2,100 per lift, which is below the normal sale price of \$:

Required:

1. Prepare an incremental analysis to determine whether Quick Lift should accept this special sales order.
2. Identify long-term factors Quick Lift should consider in deciding whether to accept the special sales order.

- 143) Quick Lift manufactures motorcycle power lift ramps for loading motorcycles into the bed of a pickup truck in Erin. Quick Lift's contribution margin income statement for the most recent month contains the following data:

143) _____

Sales in units	200
Sales revenue.	<u>\$620,000</u>
Variable expenses:	
Manufacturing	\$380,000
Marketing and administrative and shipping	<u>80,000</u>
Total variable expenses	<u>\$460,000</u>
Contribution margin.	<u>\$160,000</u>
Fixed expenses:	
Manufacturing	\$ 82,000
Marketing and administrative	<u>27,000</u>
Total fixed expenses	<u>\$109,000</u>
Operating income	<u><u>\$51,000</u></u>

Southern Ontario Riders' Group (SORG) wants to buy 50 lifts from Quick Lift. Acceptance the order will not increase Quick Lift's variable marketing and administrative expenses or of its fixed expenses. The Quick Lift plant has enough unused capacity to manufacture the additional lifts. SORG has offered \$2,000 per lift, which is below the normal sale price of \$:

Required:

1. Prepare an incremental analysis to determine whether Quick Lift should accept this sp sales order.
2. Identify long-term factors Quick Lift should consider in deciding whether to accept the special sales order.

- 144) Quick Lift manufactures motorcycle power lift ramps for loading motorcycles into the bed pickup truck in Erin. Quick Lift's contribution margin income statement for the most recent month contains the following data:

144)

Sales in units	<u>200</u>
Sales revenue	<u>\$620,000</u>
Variable expenses:	
Manufacturing	\$380,000
Marketing and administrative and shipping	<u>80,000</u>
Total variable expenses	<u>460,000</u>
Contribution margin	<u>160,000</u>
Fixed expenses:	
Manufacturing	82,000
Marketing and administrative	<u>27,000</u>
Total fixed expenses	<u>109,000</u>
Operating income	<u>\$51,000</u>

Southern Ontario Riders' Group (SORG) wants to buy 50 lifts from Quick Lift. Acceptance of the order will not increase Quick Lift's variable marketing and administrative expenses or any of its fixed expenses. The Quick Lift plant has enough unused capacity to manufacture the additional lifts. SORG has offered \$2,000 per lift, which is below the normal sale price of \$3,000. SORG wants some changes to the lift to accommodate their custom motorcycles. These changes will add \$55 per lift to variable manufacturing costs and \$10,000 in total to purchase a specialized piece of equipment that will have no useful life beyond this order.

Required:

1. Prepare an incremental analysis to determine whether Quick Lift should accept this special sales order.
2. Identify long-term factors Quick Lift should consider in deciding whether to accept the special sales order.

- 145) Schlickau Company manufactures basketball backboards. The following information pertains to the company's normal operations per month:

Output units	15,000 boards
Machine-hours	4,000 hours
Direct manufacturing labour-hours	5,000 hours
Direct manufacturing labour per hour	\$12
Direct materials per unit	\$100
Variable manufacturing overhead costs	\$150,000
Fixed manufacturing overhead costs	\$300,000
Product and process design costs	\$200,000
Marketing and distribution costs	\$250,000

Required:

- For long-run pricing, what is the full-cost base per unit?
- Schlickau Company is approached by an overseas city to fulfill a one-time-only special order for 1,000 units. All cost relationships remain the same except for an additional one-time setup charge of \$40,000. No additional design, marketing, or distribution costs will be incurred. What is the minimum acceptable bid per unit on this one-time-only special order?

- 146) Muskoka Travel offers guided tours through the lake system. Muskoka 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 950 guide-days (customers taken on the equivalent of an all day tour) per month.

Variable costs per guide-day for the year were as follows:

Food	\$7.50	Guide's salary	\$37.50
Supplies	3.00	Insurance	12.00

Fixed costs per month during the year were as follows:

Equipment rental	\$7,500	Marketing	\$3,000
Administration	6,000	Customer service	1,500

Required:

A group of foreign tourists has offered Muskoka Travel a proposal of 300 guide-days in June if they will cut the fee to \$67.50 per guide-day. They have their own food and do not want to use the Muskoka Travel menus. Muskoka Travel will incur \$300 in additional costs for busing the tourists back and forth to the camp site. If fixed costs would not increase, should Muskoka Travel accept the special offer?

- 147) Backwoods Incorporated manufactures rustic furniture. The cost accounting system estimates manufacturing costs to be \$80 per table, consisting of 70% variable costs and 30% fixed costs. The company has surplus capacity available. It is Backwoods' policy to add a 50% markup on full costs. 147) _____

Required:

- a. Backwoods Incorporated is invited to bid on an order to supply 100 rustic tables. What is the lowest price Backwoods should bid on this one-time-only special order?
- b. A large hotel chain is currently expanding and has decided to decorate all new hotels in the rustic style. Backwoods Incorporated is invited to submit a bid to the hotel chain. What is the lowest price per unit Backwoods should bid on this long-term order?

- 148) Delgreco Products manufactures high-tech cell phones. Delgreco Products has a policy of adding a 30% markup to full costs and currently has excess capacity. The following information pertains to the company's normal operations per month: 148) _____

Output units	10,000 phones
Machine-hours	8,000 hours
Direct manufacturing labour-hours	5,000 hours
Direct materials per unit	\$25
Direct manufacturing labour per hour	\$15
Variable manufacturing overhead costs	\$175,000
Fixed manufacturing overhead costs	\$425,000
Product and process design costs	\$400,000
Marketing and distribution costs	\$475,000

Delgreco Products is approached by an overseas customer to fulfill a one-time-only special order for 1,000 units. All cost relationships remain the same except for a one-time setup charge of \$15,000. No additional design, marketing, or distribution costs will be incurred.

Required:

- a. What is the minimum acceptable bid per unit on this one-time-only special order?
- b. What is the full product cost?

Use the information below to answer the following questions:

The Canadian Football Hall of Fame (CFHF) in Hamilton has approached Sports-Cards with a special order. The CFHF wants to purchase 150,000 Football card packs for a special promotional campaign and offers \$0.35 per pack, a total of \$52,500. Sports-Cards' total production cost is \$0.60 per pack, as follows:

Variable costs:

Direct materials	\$0.10
Direct labour	0.12
Variable overhead	0.12
Fixed overhead	<u>0.20</u>
Total cost	<u>\$0.54</u>

Sports-Cards has enough excess capacity to handle the special order.

- 149) Prepare an incremental analysis to determine whether Sports-Cards should accept the special sales order assuming fixed costs would not be affected by the special order. 149) _____
2. Now assume that the CFHF wants special hologram hockey cards. Sports-Cards must spend \$3,000 to develop this hologram, which will be useless after the special order is completed. Should Sports-Cards accept the special order under these circumstances? Show your analysis.
- 150) Now assume that the CFHF wants special hologram hockey cards. Sports-Cards must spend \$3,000 to develop this hologram, which will be useless after the special order is completed. Should Sports-Cards accept the special order under these circumstances? Show your analysis. 150) _____
- 151) Now assume that the CFHF wants special hologram hockey cards. Sports-Cards must spend \$3,000 to develop this hologram, which will be useless after the special order is completed. Sports-Cards has suggested using thinner stock for the special cards. The thinner stock would reduce material costs by \$0.0125 per pack. Should Sports-Cards accept the special order under these circumstances? Show your analysis. 151) _____

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

- 152) When making special order decisions, what qualitative factors should management consider?

TRUE/FALSE. Write 'T' if the statement is true and 'F' if the statement is false.

- 153) If the lost revenues from dropping a product exceed the cost savings from dropping the product, it should be retained. 153) _____
- 154) If a product line has a positive contribution margin, the product line should be dropped. 154) _____
- 155) Fixed costs that exist even after a product is dropped are called avoidable fixed costs. 155) _____

- 156) When deciding whether to drop a product, managers should only consider the costs that will be saved. 156) _____
- 157) If a product has a negative contribution margin, it should not be dropped. 157) _____
- 158) Fixed costs that will continue to exist if a product is dropped are irrelevant. 158) _____
- 159) If a product line is being evaluated to be discontinued, then the potential freed capacity is only relevant to the decision if it can be used for another purpose. 159) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 160) Common fixed costs that are allocated between departments are generally 160) _____
 A) direct fixed costs of other departments.
 B) relevant to the decision of whether to drop the department.
 C) irrelevant to the decision of whether to drop the department.
 D) direct fixed costs of the department.
- 161) Which of the following is irrelevant in the decision for a manufacturing company's manager to drop the electronics product line? 161) _____
 A) The revenues it would lose from dropping the product line
 B) How dropping the electronics product line would affect sales of its other products (like CDs)
 C) The cost of the manufacturing equipment specific to that product line
 D) The costs it could save by dropping the product line
- 162) Which is *not* a consideration for dropping a product or product line? 162) _____
 A) If dropping the product or product line will affect sales of remaining products
 B) Not having the need for free capacity
 C) Determining if direct fixed costs could be avoided if the product or product line is dropped
 D) Whether the product has a positive or negative contribution margin
- 163) A grocery store decides to drop its health and beauty section of products because it has been unprofitable. This strategy could backfire because 163) _____
 A) the store can readily fill the available space.
 B) the store's sales may suffer by not having this convenience category of products.
 C) it has automatically saved that department's fixed costs.
 D) variable costs are not avoidable.
- 164) Fixed costs that continue to exist even after a product line is dropped are called 164) _____
 A) variable fixed costs. B) unavoidable fixed costs.
 C) avoidable fixed costs. D) relevant fixed costs.

Use the information below to answer the following question(s):

Pottery Unlimited has two product lines: cups and pitchers. Income statement data for the most recent year follow:

	Total	Cups	Pitchers
Sales revenue	\$460,000	\$310,000	\$150,000
Variable expenses	355,000	235,000	120,000
Contribution margin	105,000	75,000	30,000
Fixed expenses	76,000	38,000	38,000
Operating income (loss)	\$29,000	\$37,000	\$(8,000)

- 165) Assuming Pottery Unlimited's fixed costs remain unchanged, how would dropping the Pitcher line affect operating income? 165) _____
- A) Increase in total operating income of \$8,000
 B) Increase in total operating income of \$22,000
 C) Decrease in total operating income of \$30,000
 D) Decrease in total operating income of \$1,000
- 166) If \$20,000 of Pottery Unlimited's fixed costs will be eliminated by dropping the Pitcher line, how will operating income be affected? 166) _____
- A) Increase \$2,000
 B) Decrease \$20,000
 C) Increase \$12,000
 D) Decrease \$10,000
- 167) Assuming the Pitcher line at Pottery Unlimited is dropped, total fixed costs remain unchanged, and the space formerly used to produce the line is rented for \$45,000 per year, how will operating income be affected? 167) _____
- A) Decrease \$15,000
 B) Increase \$44,000
 C) Increase \$45,000
 D) Increase \$15,000
- 168) Assuming the Pitcher line at Pottery Unlimited is dropped, total fixed costs remain unchanged, and the space formerly used to produce the Pitcher line is used to double the production of Cups, how will operating income be affected? 168) _____
- A) Increase \$74,000
 B) Increase \$45,000
 C) Increase \$150,000
 D) Decrease \$45,000

Use the information below to answer the following question(s):

Darren Company has three product lines: D, E, and F. The following information is available:

	D	E	F
Sales revenue	\$70,000	\$40,000	\$28,000
Variable expenses	\$40,000	\$21,000	\$12,000
Contribution margin	\$30,000	\$19,000	\$16,000
Fixed expenses	\$12,000	\$15,000	\$17,000
Operating income (loss)	\$18,000	\$4,000	\$(1,000)

- 169) Darren Company is thinking of dropping product line F because it is reporting an operating loss. All fixed expenses are unavoidable. Assuming Darren Company drops product line F and does not replace it, what affect will this have on operating income? 169) _____
- A) Decrease \$1,000 B) Decrease \$16,000
C) Increase \$16,000 D) Increase \$1,000
- 170) Darren Company is thinking of dropping product line F because it is reporting an operating loss. All fixed costs are unavoidable. Darren Company drops product line F and rents the space formerly used to produce product F for \$17,000 per year, what affect will this have on operating income? 170) _____
- A) Increase \$17,000 B) Decrease \$1,000
C) Decrease \$16,000 D) Increase \$1,000
- 171) Darren Company is thinking of dropping product line F because it is reporting an operating loss. All fixed costs are unavoidable. Assuming Darren Company drops line F and is able to double the production and sales of product line E without increasing fixed costs. What affect will this have on operating income? 171) _____
- A) Increase \$20,000 B) Decrease \$3,000
C) Decrease \$20,000 D) Increase \$3,000
- 172) Darren Company is thinking of dropping product line F because it is reporting an operating loss. All fixed costs are unavoidable. Assume Darren Company is able to increase the revenues of product F to \$30,000 with no change in volume of units sold and no change in variable costs or fixed costs. What affect will this have on operating income? 172) _____
- A) Increase \$30,000 B) Decrease \$2,000
C) Decrease \$30,000 D) Increase \$2,000

Use the information below to answer the following question(s):

The income statement for Champion Parts is divided by its two product lines, Part L2 and Part C6, as follows:

	Part L2	Part C6	Total
Sales revenue	\$680,000	\$275,000	\$955,000
Variable expenses	\$450,000	\$210,000	\$660,000
Contribution margin	\$230,000	\$65,000	\$295,000
Fixed expenses	\$75,000	\$75,000	\$150,000
Operating income (loss)	\$155,000	\$(10,000)	\$145,000

- 173) If fixed costs remain unchanged and Champion Parts drops the Part C6 line, how will operating income change? 173) _____
- A) Will increase by \$10,000 B) Will decrease by \$10,000
C) Will decrease by \$65,000 D) Will increase by \$65,000
- 174) If Champion Parts can eliminate fixed costs of \$40,000 by dropping the Part C6 line, then dropping it should result in which of the following? 174) _____
- A) Increase in total operating income of \$65,000
B) Decrease in total operating income of \$25,000
C) Decrease in total operating income of \$65,000
D) Increase in total operating income of \$25,000
- 175) Assume fixed costs per product line are avoidable. What is the impact if Champion drops the part C6 line? 175) _____
- A) Decrease total operating income \$10,000 B) Increase total operating income \$75,000
C) Increase total operating income \$10,000 D) Decrease total operating income \$65,000
- 176) Assume fixed costs per product line are avoidable. However, if Champion drops the C6 line, it will lose 5% of sales of L2. What is the impact if Champion drops the part C6 line? 176) _____
- A) Decrease total operating income \$1,500 B) Decrease total operating income \$11,500
C) Increase total operating income \$10,000 D) Decrease total operating income \$34,000
- 177) Assume fixed costs are unavoidable and, if Champion drops the C6 line, it will lose 5% of sales of L2. What is the impact if Champion drops the part C6 line? 177) _____
- A) Decrease total operating income \$34,000 B) Decrease total operating income \$11,500
C) Decrease total operating income \$76,500 D) Decrease total operating income \$1,500

Use the information below to answer the following question(s):

The income statement for Champion Parts is divided by its two product lines, Part L2 and Part C6, as follows:

	Part L2	Part C6	Total
Sales revenue	\$680,000	\$275,000	\$955,000
Variable expenses	\$450,000	\$210,000	\$660,000
Contribution margin	\$230,000	\$65,000	\$295,000
Fixed expenses	\$75,000	\$75,000	\$150,000
Operating income (loss)	\$155,000	\$(10,000)	\$145,000

- 178) If Champion Parts can eliminate fixed costs of \$40,000 and increase the sale of Part L2 by 3,000 units at a selling price of \$30 per unit and a contribution margin of \$4 per unit, then dropping the Part C6 should result in which of the following?

178) _____

- A) Decrease in total operating income of \$13,000
- B) Decrease in total operating income of \$53,000
- C) Increase in total operating income of \$53,000
- D) Increase in total operating income of \$13,000

- 179) The internal financial statements of Pierce Solutions show that their product, LX90, incurred an operating loss in the most recent year. There were 20,000 units of LX90 sold in that year. Selected financial information about product LX90 follows.

179) _____

Total sales revenue	\$160,000
Variable costs	\$100,000
Contribution margin	\$60,000
Fixed costs	\$70,000
Net operating loss	\$(10,000)

If product LX90 were to be dropped, the company would avoid \$16,000 in fixed costs per year.

If Pierce Solutions were to drop product LX90, the change in annual operating income would be a(

- A) increase in total operating income of \$10,000.
- B) decrease in total operating income of \$10,000.
- C) decrease in total operating income of \$26,000.
- D) decrease in total operating income of \$44,000.

180) Selzone Corporation operates two divisions with the following operating results from last year:

180) _____

	Northern Division	Southern Division	Total
Sales	\$600,000	\$300,000	\$900,000
Variable costs	\$310,000	\$200,000	\$510,000
Contribution margin	\$290,000	\$100,000	\$390,000
Avoidable fixed costs	\$110,000	\$70,000	\$180,000
Allocated common fixed costs	\$90,000	\$45,000	\$135,000
Operating income (loss)	\$90,000	\$(15,000)	\$75,000

Management is considering whether the Southern Division should be dropped since it incurred an operating loss last year. Allocated common fixed costs would continue for Selzone Corporation w/ the division is dropped or not.

If the Southern Division had been dropped at the beginning of last year, what would the total operating income for Selzone Corporation have been for the year?

- A) \$15,000 B) \$45,000 C) \$90,000 D) \$75,000

181) Sousa Corporation makes a variety of wind instrument reeds. The company produces 5,000 P7 clarinet reeds each year. Each P7 clarinet reed sells for \$5 and has a contribution margin of \$2. Currently, \$16,000 of fixed manufacturing overhead is allocated to the P7 clarinet reed product line. If Sousa Corporation drops the P7 clarinet reed product line, \$6,000 of fixed manufacturing overhead costs would be avoided. What would be the impact on total operating income if the P7 clarinet reed product line were to be dropped?

181) _____

- A) Decrease in total operating income of \$4,000
 B) Increase in total operating income of \$4,000
 C) Decrease in total operating income of \$6,000
 D) Increase in total operating income of \$6,000

182) Rabbitt Corporation is considering whether to discontinue a division that generates a total contribution margin of \$40,000 per year. Fixed manufacturing overhead allocated to this division is \$60,000, of which 12,000 is unavoidable. If Rabbitt Corporation were to eliminate this division, the effect on the company's operating income would be a(n)

182) _____

- A) decrease in total operating income of \$8,000.
 B) increase in total operating income of \$28,000.
 C) decrease in total operating income of \$28,000.
 D) increase in total operating income of \$8,000.

Use the information below to answer the following question(s):

Aqua Life Jackets, Inc. has two product lines: adult jackets and children's jackets. Contribution margin income statement data most recent year follow:

	Total	Adult jackets	Children's jackets
Sales revenue	\$365,000	\$275,000	\$90,000
Variable expenses	\$205,000	\$165,000	\$40,000
Contribution margin	\$160,000	\$110,000	\$50,000
Fixed expenses	\$102,000	\$50,000	\$52,000
Operating income (loss)	\$58,000	\$60,000	\$(2,000)

- 183) Assuming total fixed costs at Aqua Life Jackets, Inc. remain unchanged, how would dropping the children's jackets line affect operating income? 183) _____
- A) Increase in total operating income of \$8,000
 B) Decrease in total operating income of \$90,000
 C) Increase in total operating income of \$2,000
 D) Decrease in total operating income of \$50,000
- 184) If \$10,000 of fixed costs Aqua Life Jackets, Inc. will be eliminated by dropping the children's jackets line, how will operating income be affected? 184) _____
- A) Decrease \$12,000
 B) Decrease \$40,000
 C) Increase \$80,000
 D) Increase \$18,000
- 185) Assuming the Aqua Life Jackets, Inc. children's jackets line is dropped, total fixed costs remain unchanged, and the space formerly used to produce the line is rented for \$22,000 per year, how will operating income be affected? 185) _____
- A) Increase \$30,000
 B) Increase \$28,000
 C) Decrease \$28,000
 D) Increase \$176,000
- 186) Assuming the Aqua Life Jackets, Inc. children's jackets line is dropped, total fixed costs remain unchanged, and the space formerly used to produce the children's jackets line is used to double the production of adult jackets, how will operating income be affected? 186) _____
- A) Decrease \$60,000
 B) Increase \$118,000
 C) Increase \$110,000
 D) Increase \$60,000
- 187) Assume that all fixed costs are avoidable and, if Aqua drops the children's line, there will be a 2% drop in sales of adult life jackets. What is the impact if Aqua drops the children's line? 187) _____
- A) Decrease of \$2,200
 B) Decrease of \$5,500
 C) Increase of \$2,000
 D) Decrease of \$ 200

Use the information below to answer the following question(s):

Accessibility Products Company has three models: D, E, and F. The following information is available:

	Model D	Model E	Model F
Sales revenue	\$55,000	\$35,000	\$29,000
Variable expenses	\$32,000	\$13,000	\$14,000
Contribution margin	\$23,000	\$22,000	\$15,000
Fixed expenses	\$16,000	\$16,000	\$16,000
Operating income (loss)	\$7,000	\$6,000	\$(1,000)

Accessibility Products Company is thinking of dropping model F because it is reporting an operating loss. All fixed expenses are unavoidable.

- 188) Assuming Accessibility Products Company drops model F and does not replace it, what affect will this have on operating income? 188) _____
- A) Increase \$1,000 B) Increase \$15,000
C) Decrease \$1,000 D) Decrease \$15,000
- 189) If Accessibility Products Company drops model F and rents the space formerly used to produce product F for \$12,000 per year, what effect will this have on operating income, as compared to the total operating income (loss) if they keep Model F? 189) _____
- A) Decrease \$3,000 B) Increase \$13,000
C) Decrease \$13,000 D) Increase \$3,000
- 190) Assuming Accessibility Products Company drops line F and is able to double the production and sales of model E without increasing fixed costs. What affect will this have on operating income? 190) _____
- A) Increase \$23,000 B) Decrease \$7,000
C) Decrease \$23,000 D) Increase \$7,000
- 191) Assume Accessibility Products Company is able to increase the sale price of product F to \$33,000 with no change in volume of units sold and no change in variable costs or fixed costs. What affect will this have on operating income? 191) _____
- A) Decrease \$29,000 B) Decrease \$4,000
C) Increase \$4,000 D) Increase \$29,000

Use the information below to answer the following question(s):

Westfall Watches has two product lines: Luxury watches and Sporty watches. Income statement data for the most recent year

	Total	Luxury	Sporty
Sales revenue	\$490,000	\$360,000	\$130,000
Variable expenses	355,000	235,000	120,000
Contribution margin	135,000	125,000	10,000
Fixed expenses	76,000	38,000	38,000
Operating income (loss)	\$59,000	\$87,000	\$(28,000)

- 192) Assuming fixed costs remain unchanged, how would discontinuing the Sporty line affect operating income? 192) _____
- A) Increase in total operating income of \$142,000
 B) Decrease in total operating income of \$108,000
 C) Increase in total operating income of \$49,000
 D) Decrease in total operating income of \$10,000
- 193) If \$20,000 of fixed costs will be eliminated by discontinuing the Sporty line, how will operating income be affected? 193) _____
- A) Increase \$69,000
 B) Increase \$10,000
 C) Decrease \$30,000
 D) Increase \$128,000
- 194) Assuming the Sporty line is discontinued, total fixed costs remain unchanged, and the space formerly used to produce the line is rented for \$32,000 per year, how will operating income be affected? 194) _____
- A) Increase \$174,000
 B) Decrease \$22,000
 C) Increase \$81,000
 D) Increase \$22,000
- 195) Assuming the Sporty line is discontinued, total fixed costs remain unchanged, and the space formerly used to produce the Sporty line is used to increase the production of Luxury watches by 250%, how will operating income be affected? 195) _____
- A) Increase \$236,500
 B) Increase \$299,500
 C) Increase \$177,500
 D) Decrease \$177,500

Use the information below to answer the following question(s):

Boots Plus has two product lines: Hiking boots and Fashion boots. Income statement data for the most recent year follow:

	Total	Hiking	Fashion
Sales revenue	\$480,000	\$340,000	\$140,000
Variable expenses	355,000	235,000	120,000
Contribution margin	125,000	105,000	20,000
Fixed expenses	76,000	38,000	38,000
Operating income (loss)	\$49,000	\$67,000	\$(18,000)

- 196) Assuming fixed costs remain unchanged, how would discontinuing the Fashion line affect operating income? 196) _____
- A) Increase in total operating income of \$29,000
 B) Decrease in total operating income of \$20,000
 C) Increase in total operating income of \$132,000
 D) Decrease in total operating income of \$78,000
- 197) If \$25,000 of fixed costs will be eliminated by discontinuing the Fashion line, how will operating income be affected? 197) _____
- A) Increase \$103,000
 B) Increase \$54,000
 C) Decrease \$45,000
 D) Increase \$5,000
- 198) Assuming the Fashion line is discontinued, total fixed costs remain unchanged, and the space formerly used to produce the line is rented for \$30,000 per year, how will operating income be affected? 198) _____
- A) Increase \$10,000
 B) Increase \$59,000
 C) Increase \$162,000
 D) Decrease \$10,000
- 199) Assuming the Fashion line is discontinued, total fixed costs remain unchanged, and the space formerly used to produce the Fashion line is used to increase the production of Hiking boots by 250%, how will operating income be affected? 199) _____
- A) Increase \$235,500
 B) Increase \$137,500
 C) Increase \$186,500
 D) Decrease \$137,500

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

- 200) Electronic Media manufactures DVDs and Blu-ray products. The company's product line income statement follows: 200) _____

	Blu-ray	DVDs	Total
Sales revenue	\$350,000	\$112,000	\$462,000
Cost of goods sold			
Variable	\$75,000	\$49,000	\$124,000
Fixed	\$82,000	\$28,000	\$110,000
Total cost of goods sold	\$157,000	\$77,000	\$234,000
Gross profit	\$193,000	\$35,000	\$228,000
Marketing and administrative expenses			
Variable	\$25,000	\$28,000	\$53,000
Fixed	\$32,000	\$19,000	\$51,000
Total marketing and administrative expenses	\$57,000	\$47,000	\$104,000
Operating income (loss)	\$136,000	\$(12,000)	\$124,000

Management is considering dropping the DVD product line. Accountants for the company estimate that dropping the DVD line will decrease fixed cost of goods sold by \$8,000 and fixed marketing and administrative expenses by \$2,000.

Prepare an analysis supporting your opinion about whether or not the DVD product line should be dropped.

- 201) Totally Technology manufactures Cameras and Video Recorders. The company's product line income statement follows: 201) _____

	Camera	Video Recorder	Total
Sales revenue	\$300,000	\$100,000	\$400,000
Cost of goods sold			
Variable	\$75,000	\$49,000	\$124,000
Fixed	\$82,000	\$28,000	\$110,000
Total cost of goods sold	\$157,000	\$77,000	\$234,000
Gross profit	\$143,000	\$23,000	\$166,000
Marketing and administrative expenses			
Variable	\$25,000	\$28,000	\$53,000
Fixed	\$32,000	\$19,000	\$51,000
Total marketing and administrative expenses	\$57,000	\$47,000	\$104,000
Operating income (loss)	\$86,000	\$(24,000)	\$62,000

Management is considering discontinuing the Video Recorder product line. Accountants for the company estimate that discontinuing the Video Recorder line will decrease fixed cost of goods sold by \$10,000 and fixed marketing and administrative expenses by \$4,000.

Prepare an analysis supporting your opinion about whether or not the Video Recorder product line should be discontinued.

- 202) Exercise Equipment Enterprises currently produces several products. Exercycle Model LM01 is showing a net operating loss as indicated by the following condensed income statement prepared for the year ended December 31.

202) _____

Exercise Equipment Enterprises Exercycle Model LM01 Condensed Income Statement For the Year Ended December 31	
Sales (1,000 units at \$300)	\$300,000
Variable costs (1,000 units at \$195)	<u>\$195,000</u>
Contribution margin	\$105,000
Fixed costs	<u>\$125,000</u>
Operating loss	<u>\$(20,000)</u>

You have been hired by Exercise Equipment Enterprises to help analyze the decision as to whether to eliminate Exercycle Model LM01. Upon investigation, you discover that if Exercycle Model LM01 is eliminated, \$55,000 of the fixed costs shown on the above condensed income statement can be eliminated. The remainder of the fixed costs allocated to Exercycle Model LM01 are common fixed costs that will be allocated to the remaining two products produced by Exercise Equipment Enterprises.

Determine if Exercise Equipment Enterprises should discontinue Exercycle Model LM01.

- 203) Cornell Enterprises currently produces several products. Model L78 is showing a net operating loss as indicated by the following condensed income statement prepared for the year ended December 31.

203) _____

Cornell Enterprises Model L78 Condensed Income Statement For the Year Ended December 31	
Sales (1,500 units at \$320)	\$480,000
Variable costs (1,500 units at \$240)	<u>\$360,000</u>
Contribution margin	\$120,000
Fixed costs	<u>\$125,000</u>
Operating loss	<u>\$(5,000)</u>

You have been hired by Cornell Enterprises to help analyze the decision as to whether to eliminate Model L78. Upon investigation, you discover that if Model L78 is eliminated, \$20,000 of the fixed costs shown on the above condensed income statement can be eliminated. The remainder of the fixed costs allocated to Model L78 are common fixed costs that will be allocated to the remaining two products produced by Cornell Enterprises.

Determine if Cornell Enterprises should discontinue Model L78.

- 204) Suppose Cool Rays is considering dropping its Tinted Lens product line. Assume that during the past year, the Tinted Lens product line income statement showed the following: 204) _____

Sales	\$3,700,00
Cost of goods sold	<u>3,075,000</u>
Gross profit	625,000
Operating expenses	<u>675,000</u>
Operating loss	<u><u>\$(50,000)</u></u>

Fixed manufacturing overhead costs account for 40% of the cost of goods, while only 30% the operating expenses are fixed. Since the Tinted Lens line is only one of Cool Rays product lines, only \$365,000 of direct fixed costs (the majority of which is advertising) will be eliminated if the product line is discontinued. The remainder of the fixed costs will still be incurred by Cool Rays. If the company decides to drop the product line, what will happen to the company operating income? Should Cool Rays drop the product line?

- 205) Suppose Cool Rays is considering dropping its Tinted Lens product line. Assume that during the past year, the Tinted Lens product line income statement showed the following: 205) _____

Sales	\$1,850,000
Cost of goods sold	<u>1,540,000</u>
Gross profit	310,000
Operating expenses	<u>345,000</u>
Operating loss	<u><u>\$(35,000)</u></u>

Fixed manufacturing overhead costs account for 40% of the cost of goods, while only 30% the operating expenses are fixed. Since the Tinted Lens line is only one of Cool Rays product lines, only \$175,000 of direct fixed costs (the majority of which is advertising) will be eliminated if the product line is discontinued. The remainder of the fixed costs will still be incurred by Cool Rays. If the company decides to drop the product line, what will happen to the company operating income? Should Cool Rays drop the product line?

- 206) Suppose Cool Rays is considering dropping its Tinted Lens product line. Assume that during the past year, the Tinted Lens product line income statement showed the following: 206) _____

Sales	\$2,750,000
Cost of goods sold	<u>2,275,000</u>
Gross profit	475,000
Operating expenses	<u>560,000</u>
Operating loss	<u><u>\$(85,000)</u></u>

Fixed manufacturing overhead costs account for 40% of the cost of goods, while only 30% the operating expenses are fixed. Since the Tinted Lens line is only one of Cool Rays product lines, only \$325,000 of direct fixed costs (the majority of which is advertising) will be eliminated if the product line is discontinued. The remainder of the fixed costs will still be incurred by Cool Rays. If the company decides to drop the product line, what will happen to the company operating income? Should Cool Rays drop the product line?

- 207) Rackets Ltd. manufactures two models of badminton racquets. The company's product line income statement follows:

	Professional	Sportsman
Sales revenue	\$125,000	\$37,000
Cost of goods sold		
Variable	\$25,000	\$16,000
Fixed	\$27,000	\$10,000
Total cost of goods sold	\$52,000	\$26,000
Gross profit	\$73,000	\$11,000
Marketing and administrative expenses		
Variable	\$8,000	\$9,000
Fixed	\$11,000	\$6,000
Total marketing and administrative expenses	\$19,000	\$15,000
Operating income (loss)	\$54,000	\$(4,000)

Management is considering dropping the Sportsman model line. Accountants for the company estimate that dropping the Sportsman line will decrease fixed cost of goods sold by \$3,000 and fixed marketing and administrative expenses by \$750.

Prepare an analysis supporting your opinion about whether or not the Sportsman product should be dropped.

- 208) Rackets Ltd. manufactures two models of badminton racquets. The company's product line income statement follows:

	Professional	Sportsman	To
Sales revenue	\$225,000	\$75,000	\$
Cost of goods sold			
Variable	\$45,000	\$30,000	
Fixed	\$50,000	\$20,000	
Total cost of goods sold	\$95,000	\$50,000	
Gross profit	\$130,000	\$25,000	
Marketing and administrative expenses			
Variable	\$15,000	\$20,000	
Fixed	\$20,000	\$10,000	
Total marketing and administrative expenses	\$35,000	\$30,000	
Operating income (loss)	\$95,000	\$(5,000)	=

Management is considering dropping the Sportsman model line. Accountants for the company estimate that dropping the Sportsman line will decrease fixed cost of goods sold by \$5,000 and fixed marketing and administrative expenses by \$2,000.

Prepare an analysis supporting your opinion about whether or not the Sportsman product should be dropped.

- 209) Rackets Ltd. manufactures two models of badminton racquets. The company's product line income statement follows: 209) _____

	Professional	Sportsman
Sales revenue	\$75,000	\$25,000
Cost of goods sold		
Variable	\$15,000	\$10,000
Fixed	\$20,000	\$7,500
Total cost of goods sold	\$35,000	\$17,500
Gross profit	\$40,000	\$7,500
Marketing and administrative expenses		
Variable	\$5,000	\$7,500
Fixed	\$7,500	\$5,000
Total marketing and administrative expenses	\$12,500	\$12,500
Operating income (loss)	\$27,500	\$(5,000)

Management is considering dropping the Sportsman model line. Accountants for the company estimate that dropping the Sportsman line will decrease fixed cost of goods sold by \$5,000 and fixed marketing and administrative expenses by \$2,000.

Prepare an analysis supporting your opinion about whether or not the Sportsman product should be dropped.

- 210) The Print Manufacturing Company manufactures Size 1, Size 2, and Size 3 printer ribbons to support the printers it manufactures. The managerial accountant reported the following information: 210) _____

Print Manufacturing Company Ribbon Report			
	Size 1	Size 2	Size 3
Sales	\$80,000	\$110,000	\$40,000
Variable Costs	\$50,000	\$62,000	\$28,000
Contribution margin	\$30,000	\$48,000	\$12,000
Fixed Costs:			
Avoidable Costs	\$8,000	\$18,000	\$10,000
Unavoidable Costs	\$9,000	\$11,000	\$7,200
Total	\$13,000	\$19,000	\$(5,200)

The managerial accountant at Print Manufacturing noted that the Size 3 printer ribbon represents a loss and the managerial accountant needs to determine if the company should drop the Size 3 printer ribbon. What is the increase or decrease in operating income if the operations manager drops the Size 3 printer ribbon and does not replace it? If the managerial accountant recommends that the organization drop the Size 3 printer ribbon and rent out the space the company uses to store the product at \$11,000 per year, is there an increase or a decrease in operating income?

TRUE/FALSE. Write 'T' if the statement is true and 'F' if the statement is false.

- 211) A constraint is a factor that restricts production or sale of a product. 211) _____
- 212) Fixed costs can affect product mix considerations. 212) _____
- 213) An example of a constraint for expansion would be the size of the available labour pool. 213) _____
- 214) To maximize profits, produce the product with the highest contribution margin per unit of the constraint. 214) _____
- 215) To maximize profits, produce the product with the highest contribution margin per unit of the constraint. 215) _____
- 216) When making product mix decisions, companies are most profitable when they maximize production of the product with the greatest sales demand. 216) _____
- 217) When making product mix decisions, companies are most profitable when they maximize production of the product with the greatest sales price. 217) _____
- 218) In most cases, changing the product mix emphasis in the short run will not affect fixed costs, so fixed costs are irrelevant. 218) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 219) The contribution margin per unit of constraint is calculated as 219) _____
A) contribution margin per unit/units per constraint.
B) contribution margin per unit \times constraint per unit.
C) contribution margin per unit \times units per constraint.
D) contribution margin per unit $+$ constraint per unit.
- 220) Companies with production constraints and irrelevant fixed costs will be most profitable when they maximize production of the product with the highest 220) _____
A) contribution margin per unit of the constraint.
B) contribution margin per unit.
C) sales price.
D) demand for the product.
- 221) Which of the following is the factor that restricts production or sale of a product? 221) _____
A) Relevant factor
B) Sunk factor
C) Demanding factor
D) Constraint

- 222) Which of the following best describes a "constraint"? 222) _____
- A) A factor that restricts production or sales of a product
 - B) Benefits foregone by not choosing an alternative course of action
 - C) The distribution of all products to be sold
 - D) Expected future costs that differs among alternatives
- 223) Which of the following best describes a "sales mix"? 223) _____
- A) Costs that were incurred in the past and can not be changed
 - B) The relative number of all products to be sold
 - C) Expected future costs that differs among alternatives
 - D) A factor that restricts production or sales of a product
- 224) Which of the following would not be a constraint for selling a product? 224) _____
- A) Having excess capacity on the shelves
 - B) Available labour hours for employees
 - C) Machine time
 - D) Store hours
- 225) Changing the product mix emphasis in the short run will usually not affect 225) _____
- A) total variable costs.
 - B) both total variable and total fixed costs.
 - C) total contribution margin.
 - D) total fixed costs.

Use the information below to answer the following question(s):

Kitchen Appliances Company manufactures two products: toaster ovens and bread machines. The following data are available

	Toaster Ovens	Bread Machines
Sales price	\$100	\$200
Variable costs	\$30	\$150

The company can manufacture three toaster ovens per machine hour and two bread machines per machine hour. The company's production capacity is 1,200 machine hours per month.

- 226) What is the contribution margin ratio for toaster ovens at the Kitchen Appliances Company? 226) _____
- A) 70.00%
 - B) 130.00%
 - C) 25.00%
 - D) 233.33%
- 227) What is the contribution margin per machine hour for bread machines at the Kitchen Appliances Company? 227) _____
- A) \$50
 - B) \$150
 - C) \$700
 - D) \$100
- 228) What is the contribution margin per machine hour for toaster ovens at the Kitchen Appliances Company? 228) _____
- A) \$70
 - B) \$390
 - C) \$140
 - D) \$210

229) To maximize profits, what product and how many units should Kitchen Appliances Company produce in a month?

229) _____

- A) 630 toaster ovens and 200 bread machines
- B) 3,600 toaster ovens and 2,400 bread machines
- C) 2,400 bread machines and 0 toaster ovens
- D) 3,600 toaster ovens and 0 bread machines

230) Chip Corporation produces three products, with costs and selling prices as follows:

230) _____

	Model A2		Model D4		Model C6	
Selling price per unit	\$ 40.00	100%	\$ 30.00	100%	\$ 50.00	100%
Variable costs per unit	\$ 18.00	45%	\$ 12.00	40%	\$ 36.00	72%
Contribution margin per unit	\$ 22.00	55%	\$ 18.00	60%	\$ 14.00	28%

Each product requires a certain number of minutes on the drill press. There is only one drill press available so it is the constraint for this product. Model A2 requires 2 minutes of drill press time, Model D4 requires 1 minute of drill press time, and Model C6 requires 7 minutes of drill press time. In what order should Chip Corporation emphasize its products to maximize its contribution margin? (Rank the products in order from most profitable to least profitable in terms of contribution margin per unit of capacity.)

- A) Model D4, Model A2, Model C6
- B) Model A2, Model C6, Model D4
- C) Model A2, Model D4, Model C6
- D) Model C6, Model D4, Model A2

231) Pasture Corporation processes all of its products through a lathe machine. The lathe is only available 60 hours per week and is the constraint for all of the products. Data regarding Pasture Corporation three products follows:

231) _____

	Product D	Product E	Product F
Selling price per unit	\$80.00	\$60.00	\$100.00
Variable cost per unit	\$45.00	\$35.00	\$80.00
Minutes of lathe time required per unit	10	20	5

In what order should Pasture Corporation emphasize its products to maximize its contribution margin? (Rank the products in order from most profitable to least profitable in terms of contribution margin per unit of capacity.)

- A) Product F, Product D, Product E
- B) Product F, Product E, Product D
- C) Product D, Product E, Product F
- D) Product E, Product D, Product F

Use the information below to answer the following question(s):

Cozy Cat Furniture manufactures two products: cat trees and cat condos. The following data are available:

	Cat Tree	Cat Condo
Sales price	\$80.00	\$150.00
Variable costs	\$42.00	\$120.00

The company can manufacture two cat trees per machine hour and one cat condo per machine hour. The company's production capacity is 900 machine hours per month.

- 232) What is the contribution margin ratio for cat trees at Cozy Cat Furniture? 232) _____
 A) 20.0% B) 90.48% C) 152.50% D) 47.50%
- 233) What is the contribution margin per machine hour for cat condos at Cozy Cat Furniture? 233) _____
 A) \$60 B) \$90 C) \$30 D) \$270
- 234) What is the contribution margin per machine hour for cat trees at Cozy Cat Furniture? 234) _____
 A) \$38 B) \$76 C) \$30 D) \$244
- 235) To maximize profits, what product and how many units should Cozy Cat Furniture produce in a month? 235) _____
 A) 900 cat condos B) 1,800 cat trees
 C) 152 cat trees and 30 cat condos D) 1,800 cat trees and 900 cat condos

Use the information below to answer the following question(s):

Mama's Favourite Appliances manufactures two products: Food Processors and Espresso Makers. The following data are available:

	Food Processors	Espresso Makers
Sales price	\$125	\$225
Variable costs	\$50	\$150

The company can manufacture two food processors per machine hour and three espresso machines per machine hour. The company's production capacity is 1,200 machine hours per month.

- 236) What is the contribution margin ratio for food processors? 236) _____
 A) 60.00% B) 33.33% C) 140.00% D) 150.00%
- 237) What is the contribution margin per machine hour for espresso machines? 237) _____
 A) \$225 B) \$150 C) \$75 D) \$1,125
- 238) What is the contribution margin per machine hour for food processors? 238) _____
 A) \$225 B) \$350 C) \$75 D) \$150

- 239) To maximize profits, what product and how many units should the Mama's Favourite Appliances produce in a month? 239) _____
- A) 300 Food Processors and 675 Espresso Machines
 - B) 2,400 Food Processors and 0 Espresso Machines
 - C) 2,400 Food Processors and 3,600 Espresso Machines
 - D) 3,600 Espresso Machines and 0 Food Processors

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

- 240) Dulko Corporation manufactures two styles of clocks, a Mantle Clock and a Cuckoo Clock. The following per unit data are available: 240) _____

	Mantle Clock	Cuckoo Clock
Sale price	\$90	\$108
Variable costs	\$60	\$75
Machine hours required for 1 clock	1	2

Total fixed costs are \$600,000 and Dulko can sell a maximum of 25,000 units of each style of clock annually. Machine hour capacity is 40,000 hours per year.

Required:

1. Determine the contribution margin per unit for each type of clock.
2. Determine the contribution margin per machine hour for each type of clock.
3. Determine the number of units of each style of clock that Dulko should produce to maximize operating income.
4. What is the dollar amount of the maximum operating income as calculated in 3 above?

- 241) Markov Fireworks produces two products, spinners and sparklers. Spinners sell for \$4.50 per unit; sparklers sell for \$6.50 per unit. Variable costs for spinners and sparklers are respectively, \$3.50 and \$3.00. There are 3,600 direct labour hours per month available for producing one of the two products. Fixed manufacturing overhead cost is allocated at \$1,000 per month. Spinners require 2 direct labour hours and sparklers require 5 direct labour hours. 241) _____

Required:

1. Contribution margin per unit for each product.
2. Contribution margin per direct labour hour for each product.
3. The total number of products of each type that could be produced each month assuming the other product is not made.
4. Income for a month for each product assuming that it is the only one produced and so

- 242) Bandin Dental Products, located in Moosonee, produces two lines of electric toothbrushes: Deluxe and Standard. Because Bandin can sell all the toothbrushes it can produce, the owners are expanding the plant. They are deciding which product line to emphasize. To make this decision, they assemble the following data:

242) _____

	Per Unit	
	Deluxe Model	Standard Model
Sale Price	<u>\$ 150</u>	<u>\$ 80</u>
Variable expenses	<u>30</u>	<u>28</u>
Contribution margin	<u>120</u>	<u>52</u>
Contribution margin ratio	<u>80%</u>	<u>65%</u>

After expansion, the factory will have a production capacity of 4,200 machine hours per month. The plant can manufacture either 55 Standard electric toothbrushes or 25 Deluxe electric toothbrushes per machine hour.

Required:

1. Identify the constraining factor for Bandin.
2. Prepare an analysis to show which product line to emphasize.

- 243) Each morning Heidi Cooper stocks the ice cream fridge at Heidi's Cool Treats in Minden. The ice cart has refrigerated display space for 32, 10 litre ice cream tubs. The cart sells hand scooped ice cream, frozen yogurt and gelato. The accounting records reveal the following:

243) _____

	Revenue Per Tub	Cost Per Tub
Ice cream	\$60.00	\$42.00
Frozen yogurt	\$80.00	\$50.00
Gelato	\$120.00	\$54.00

Heidi's Cool Treats incurs monthly fixed costs of \$2,000. Each day all the product in the cart can be sold.

Required:

1. What is Heidi's Cool Treats' constraining factor? What should Heidi stock to maximize profits? What is the maximum contribution margin she could generate each day?
2. To provide variety to customers, suppose Heidi refuses to devote more than 20 tubs and no fewer than 4 tubs to any individual product. Under this condition, how many tubs of each product should Heidi stock? How many units of each product will be available for sale each day?
3. Assuming the product mix calculated in Requirement 2, what contribution margin will Heidi's Cool Treats generate each day?

- 244) Each morning Heidi Cooper stocks the ice cream fridge at Heidi's Cool Treats in Minden. 244) _____
ice cart has refrigerated display space for 45, 10 litre ice cream tubs. The cart sells hand scooped ice cream, frozen yogurt and gelato. The accounting records reveal the following:

	Revenue Per Tub	Cost Per Tub
Ice cream	\$65.00	\$52.00
Frozen yogurt	\$85.00	\$60.00
Gelato	\$125.00	\$74.00

Heidi's Cool Treats incurs monthly fixed costs of \$2,000.
Each day all the product in the cart can be sold.

Required:

1. What is Heidi's Cool Treats' constraining factor? What should Heidi stock to maximize profits? What is the maximum contribution margin she could generate each day?
2. To provide variety to customers, suppose Heidi refuses to devote more than 20 tubs and no fewer than 10 tubs to any individual product. Under this condition, how many tubs of each product should Heidi stock? How many units of each product will be available for sale each day?
3. Assuming the product mix calculated in Requirement 2, what contribution margin will Heidi's Cool Treats generate each day?

245) Each morning, Max Imery stocks the drink case at Max's Beach Hut in the Muskokas. Max's Beach Hut has 42 linear metres of refrigerated display space for cold drinks. Each linear metre can hold either 18 341-mL cans or 12 551-mL plastic or glass bottles. Max's Beach Hut sells three types of cold drinks:

1. Coca-Cola in 341-mL cans for \$1.50 per can
2. A&W Root Beer in 551-mL plastic bottles for \$1.75 per bottle
3. Mountain Dew in 551-mL glass bottles for \$2.25 per bottle

Max's Beach Hut pays its suppliers the following:

1. \$0.35 per 341-mL can of Coca-Cola
2. \$0.50 per 551-mL bottle of A&W Root Beer
3. \$0.85 per 551-mL bottle of Mountain Dew

Max's Beach Hut's monthly fixed expenses include the following:

Hut rental	\$375
Refrigerator rental	75
Max's salary	1,550
Total fixed expenses	2,000

Each day, Max's Beach Hut can sell all the drinks in the display case.

Required:

1. What is Max's Beach Hut's constraining factor? What should Max stock to maximize profits? What is the maximum contribution margin he could generate from refrigerated drinks each day?
2. To provide variety to customers, suppose Max refuses to devote more than 20 linear metres and no fewer than 4 linear metres to any individual product. Under this condition, how many linear metres of each drink should Max stock? How many units of each product will be available for sale each day?
3. Assuming the product mix calculated in Requirement 2, what contribution margin will be generated each day?

245) _____

246) Each morning, Max Imery stocks the drink case at Max's Beach Hut in the Muskokas. Max's Beach Hut has 36 linear metres of refrigerated display space for cold drinks. Each linear metre can hold either 18 341-mL cans or 12 551-mL plastic or glass bottles. Max's Beach Hut sells three types of cold drinks:

1. Coca-Cola in 341-mL cans for \$1.50 per can
2. A&W Root Beer in 551-mL plastic bottles for \$1.75 per bottle
3. Mountain Dew in 551-mL glass bottles for \$2.20 per bottle

Max's Beach Hut pays its suppliers the following:

1. \$0.25 per 341-mL can of Coca-Cola
2. \$0.40 per 551-mL bottle of A&W Root Beer
3. \$0.75 per 551-mL bottle of Mountain Dew

Max's Beach Hut's monthly fixed expenses include the following:

Hut rental	\$375
Refrigerator rental	75
Max's salary	1,550
Total fixed expenses	\$2,000

Each day, Max's Beach Hut can sell all the drinks in the display case.

Required:

1. What is Max's Beach Hut's constraining factor? What should Max stock to maximize profits? What is the maximum contribution margin he could generate from refrigerated drinks each day?
2. To provide variety to customers, suppose Max refuses to devote more than 20 linear metres and no fewer than 4 linear metres to any individual product. Under this condition, many linear metres of each drink should Max stock? How many units of each product will be available for sale each day?
3. Assuming the product mix calculated in Requirement 2, what contribution margin will be generated each day?

247) Rose Incorporated manufactures two types of vases, small and large. The following per unit data are available:

	Small Vase	Large Vase
Sale price	\$60	\$100
Variable costs	\$35	\$60
Machine hours required for 1 vase	1	2

Total fixed costs are \$600,000 and Rose Incorporated can sell a maximum of 25,000 units of each type of vase annually. Machine hour capacity is 50,000 hours per year.

Required:

- A. Determine the contribution margin per unit for each type of vase.
- B. Determine the contribution margin per machine hour for each type of vase.
- C. Determine the number of units of each style of vase that Rose Incorporated should produce to maximize operating income.
- D. Compute the dollar amount of the maximum operating income (as calculated in C above).

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

- 248) Define the term constraints and give an example. What product should be made first when resource constraints exist?

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Use the information below for the following questions:

LifeStyles produces two types of exercise bicycles: Regular and Deluxe. The exercise craze is such that LifeStyles could use all available machine hours producing either model. The two models are processed through the same Production Department. Per unit data is as follows.

	Deluxe	Regular
Sales price	\$1,200	\$ 750
Costs:		
Direct materials	\$ 280	\$ 180
Direct labour	190	150
Variable manufacturing overhead	200	75
Fixed manufacturing overhead*	80	40
Variable operating expenses	115	65
Total cost	\$ 865	\$ 510
Operating income	\$ 335	\$ 240

*Allocated on the basis of machine hours.

- 249) Assuming that machine hours is the constraint and that LifeStyles can sell all it produces, which model should LifeStyles produce? 249) _____
- 250) Assuming that LifeStyles has only 1000 machine hours per month and that fixed overhead is allocated at \$20 per machine hour. How many of each model should LifeStyles produce (assume LifeStyles can sell all it produces of either model)? 250) _____
- 251) Assuming that LifeStyles has only 1000 machine hours per month and that fixed overhead is allocated at \$20 per machine hour. The market is such that LifeStyles can only sell a maximum of 300 units of either model. What is the maximum contribution margin LifeStyles can generate? 251) _____

TRUE/FALSE. Write 'T' if the statement is true and 'F' if the statement is false.

- 252) Make or buy decisions are often referred to as in-house decisions. 252) _____
- 253) All other things being equal, if the incremental costs of making a product exceed the incremental costs of outsourcing the product, it should be outsourced. 253) _____
- 254) In most circumstances, all fixed costs cannot be eliminated by outsourcing a product. 254) _____
- 255) An opportunity cost is a past cost that is given up because an alternative course of action is taken. 255) _____

- 256) Qualitative factors play an important part in make or buy decisions. 256) _____
- 257) Outsourcing decisions are best made by comparing the total unit cost of making the product versus the total unit cost charged by the outsourcing company. 257) _____
- 258) Opportunity costs should never be factored in to outsourcing decisions. 258) _____
- 259) Companies often consider outsourcing so they can focus on their core competencies. 259) _____
- 260) When companies are considering outsourcing production any revenue earned by freed capacity is considered an opportunity cost from not outsourcing. 260) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 261) Outsourcing decisions are sometimes referred to as 261) _____
 A) make-or-buy decisions. B) incremental decisions.
 C) buy decisions. D) make decisions.
- 262) If a company decides to outsource and then has freed capacity, the decision on what to do with that freed capacity would be based upon 262) _____
 A) fixed cost allocation. B) opportunity costs.
 C) unavoidable fixed costs. D) full product cost.

Use the information below to answer the following question(s):

Compact Appliances uses a standard part in the manufacture of several of its air conditioners. The cost of producing 40,000 parts is \$110,000, which includes fixed costs of \$50,000 and variable costs of \$60,000. The company can buy the part from an outside supplier for \$4.00 per unit, and avoid 40% of the fixed costs.

- 263) If Compact Appliances makes the part, how much will its operating income be? 263) _____
 A) \$80,000 greater than if the company bought the part
 B) \$120,000 greater than if the company bought the part
 C) \$20,000 greater than if the company bought the part
 D) \$30,000 greater than if the company bought the part
- 264) If Compact Appliances buys the part, what is the most Compact Appliances can spend per unit so that operating income equals the operating income from making the part? 264) _____
 A) \$1.50 B) \$3.50 C) \$2.00 D) \$1.60

- 265) Assume that the Compact Appliances factory space freed up by purchasing the part from an outside source can be used to manufacture another product that can be sold for \$12,000 profit. If Compact Appliances buys the part, how will its operating income be affected?
- A) \$92,000 greater than if the company made the part
 - B) \$178,000 greater than if the company made the part
 - C) \$68,000 less than if the company made the part
 - D) \$68,000 greater than if the company made the part

265) _____

Use the information below to answer the following question(s):

Spahr Company produces a part that is used in the manufacture of one of its products. The unit manufacturing costs of this part assuming a production level of 5,000 units, are as follows:

Direct materials	\$2.00
Direct labour	\$4.00
Variable manufacturing overhead	\$3.00
Fixed manufacturing overhead	\$1.00
Total cost	\$10.00
The fixed overhead costs are unavoidable.	

- 266) Erickson Company has offered to sell 5,000 units of the same part to Spahr Company for \$11 per unit. Assuming the company has no other use for its facilities, what should Spahr Company do?
- A) Make the part and save \$5 per unit.
 - B) Make the part and save \$1 per unit.
 - C) Buy from Erickson and save \$1 per unit.
 - D) Make the part and save \$2 per unit.

266) _____

- 267) Assuming no other use for its facilities, what is the highest price per unit that Spahr Company should be willing to pay for the part?
- A) \$10
 - B) \$9
 - C) \$3
 - D) \$6

267) _____

- 268) Assuming Spahr Company can purchase 5,000 units of the part from Sexton Company for \$13 each, and the facilities currently used to make the part could be rented out to another manufacturer for \$24,000 a year, what should Spahr Company do?
- A) Buy the part and save \$0.80 per unit.
 - B) Make the part and save \$2.20 per unit.
 - C) Buy the part and save \$1.80 per unit.
 - D) Make the part and save \$4.20 per unit.

268) _____

- 269) Assume Spahr Company can purchase 5,000 units of the part from Allgood Company for \$13.50 each, and the facilities currently used to make the part could be used to manufacture 5,000 units of another product that would have a \$6 per unit contribution margin. If no additional fixed costs would be incurred, what should Spahr Company do?
- A) Continue to make the part to earn an extra \$1.50 per unit contribution to profit.
 - B) Continue to make the part to earn an extra \$5.50 per unit contribution to profit.
 - C) Make the new product and buy the part to earn an extra \$2.50 per unit contribution to profit.
 - D) Make the new product and buy the part to earn an extra \$1.50 per unit contribution to profit.

269) _____

Use the information below to answer the following question(s):

Part Z45 is a part used in the production of blenders at Andrew Corporation. The following costs and data relate to the production of Part Z45:

Number of parts produced annually	20,000
Fixed costs	\$40,000
Variable costs	\$66,000
Total cost to produce	\$106,000

Andrew Corporation can purchase the part from an outside supplier for \$4.25 per unit. If they purchase from the outside supplier, 40% of the fixed costs would be avoided.

- 270) If Andrew Corporation purchases the part, how much will its operating income be? 270) _____
- A) \$1,000 less than if the company made the part
B) \$5,000 greater than if the company made the part
C) \$3,000 less than if the company made the part
D) \$24,000 less than if the company made the part
- 271) If Andrew Corporation buys the part, what is the most Andrew Corporation can spend per unit so that their operating income remains the same as it is currently? 271) _____
- A) \$1.50 B) \$1.65 C) \$5.70 D) \$4.10
- 272) Assume that factory space freed up by purchasing the part from an outside source can be used to manufacture another product that can be sold for \$2,000 profit. If Andrew Corporation makes the part, what will its operating income be? 272) _____
- A) \$5,000 greater than if the company bought the part
B) \$2,000 greater than if the company bought the part
C) \$1,000 greater than if the company bought the part
D) \$1,000 less than if the company bought the part

Use the information below to answer the following question(s):

Star Appliance manufactures a variety of appliances which all use Part 92F. Currently, Star Appliance manufactures Part 92F has been producing 8,000 units of Part 92F annually. The annual costs of producing Part 92F at the level of 8,000 units include

Direct materials	\$4.00
Direct labour	\$8.00
Variable manufacturing overhead	\$6.00
Fixed manufacturing overhead	\$3.00
Total cost	\$21.00

All of the fixed manufacturing overhead costs would continue whether Part 92F is made internally or purchased from an outside supplier. Star Appliance has no alternative use for the manufacturing facilities.

- 273) Roger Parts Company has offered to sell 8,000 units of Part 92F to Star Appliance for \$22.00 per unit. What should Star Appliance do? 273) _____
- A) Make the part and save \$3 per unit.
 B) Make the part and save \$1 per unit.
 C) Buy from Roger Parts Company and lose \$1 per unit.
 D) Make the part and save \$4 per unit.
- 274) Roger Parts Company has offered to sell 8,000 units of Part 92F to Star Appliance for \$22.00 per unit. What is the highest price per unit that Star Appliance should be willing to pay for the part? 274) _____
- A) \$18 B) \$21 C) \$6 D) \$12
- 275) Assuming Star Appliance can purchase 8,000 units of the part from the Roger Parts Company for \$18.00 each, and the facilities currently used to make the part could be rented out to another manufacturer for \$10,000 a year, what should Star Appliance do? 275) _____
- A) Buy the part and save \$1.25 per unit. B) Make the part and save \$4.75 per unit.
 C) Buy the part and save \$4.25 per unit. D) Buy the part and save \$7.75 per unit.
- 276) Assume Star Appliance can purchase 8,000 units of the part from the Roger Parts Company for \$17.50 each, and the facilities currently used to make the part could be used to manufacture 8,000 units of another product that would have a \$5 per unit contribution margin. If no additional fixed costs would be incurred, what should Star Appliance do? 276) _____
- A) Make the new product and buy the part to earn an extra \$5.50 per unit contribution to profit.
 B) Make the new product and buy the part to earn an extra \$8.50 per unit contribution to profit.
 C) Continue to make the part to earn an extra \$2.50 per unit contribution to profit.
 D) Continue to make the part to earn an extra \$0.50 per unit contribution to profit.

Use the information below to answer the following question(s):

Cruise Company produces a part that is used in the manufacture of one of its products. The unit manufacturing costs of this part, assuming a production level of 6,000 units, are as follows:

Direct materials	\$4.00
Direct labour	\$4.00
Variable manufacturing overhead	\$3.00
Fixed manufacturing overhead	\$1.00
Total cost	\$12.00
The fixed overhead costs are unavoidable.	

- 277) Assuming no other use for its facilities, what is the highest price per unit that Cruise Company should pay for the part? 277) _____
- A) \$11 B) \$8 C) \$5 D) \$12
- 278) Assuming Cruise Company can purchase 6,000 units of the part from Suri Company for \$14 each, and the facilities currently used to make the part could be rented out to another manufacturer for \$24,000 a year, what should Cruise Company do? 278) _____
- A) Make the part and save \$2.00 per unit. B) Buy the part and save \$2.00 per unit.
C) Make the part and save \$6.00 per unit. D) Buy the part and save \$1.00 per unit.
- 279) Assume Cruise Company can purchase 6,000 units of the part from Suri Company for \$14.00 each, and the facilities currently used to make the part could be used to manufacture 6,000 units of another product that would have an \$8 per unit contribution margin. If no additional fixed costs would be incurred, what should Cruise Company do? 279) _____
- A) Make the new product and buy the part to earn an extra \$5.00 per unit contribution to profit.
B) Continue to make the part to earn an extra \$4.00 per unit contribution to profit.
C) Make the new product and buy the part to earn an extra \$6.00 per unit contribution to profit.
D) Continue to make the part to earn an extra \$2.00 per unit contribution to profit.

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

- 280) Victory Electronics makes a part used in the manufacture of desktop computers. Management is considering whether to continue manufacturing the part, or to buy the part from an outside source at a cost of \$27.00 per part. Victory Electronics needs 80,000 parts per year. The cost of manufacturing 80,000 parts is computed as follows: 280) _____

Direct materials	\$750,000
Direct labour	600,000
Variable manufacturing overhead	525,000
Fixed manufacturing overhead	<u>650,000</u>
Total manufacturing costs	<u>\$2,525,000</u>

If Victory Electronics buys the part, it would pay \$.40 per unit to transport the parts to its manufacturing plant. Purchasing the part from an outside source would enable the company to avoid 40% of fixed manufacturing overhead costs. Victory Electronics' factory space freed by purchasing the part from an outside supplier could be used to manufacture another product with a contribution margin of \$65,000.

Prepare an analysis to show which alternative makes the best use of Victory Electronics' factory space:

1. Make the part.
2. Buy the part and leave facilities idle.
3. Buy the part and use facilities to make another product.

- 281) Victoria Technologies makes a part used in the manufacture of digital cameras. Management is considering whether to continue manufacturing the part, or to buy the part from an outside source at a cost of \$24.00 per part. Victoria Technologies needs 60,000 parts per year. The cost of manufacturing 60,000 parts is computed as follows: 281) _____

Direct materials	\$750,000
Direct labour	600,000
Variable manufacturing overhead	525,000
Fixed manufacturing overhead	<u>750,000</u>
Total manufacturing costs	<u>\$2,525,000</u>

If Victoria Technologies buys the part, it would pay \$.60 per unit to transport the parts to its manufacturing plant. Purchasing the part from an outside source would enable the company to avoid 50% of fixed manufacturing overhead costs. Victoria Technologies' factory space freed by purchasing the part from an outside supplier could be used to manufacture another product with a contribution margin of \$70,000.

Prepare an analysis to show which alternative makes the best use of Victoria Technologies' factory space:

- 1) Make the part
- 2) Buy the part and leave facilities idle
- 3) Buy the part and use facilities to make another product

282) Garden Supplies Company produces a standard tomato planter with variable manufacturing costs of \$12 per unit. The selling price of the standard tomato planter is \$19 per unit. The fixed manufacturing overhead cost is \$67,000. A normal production run includes 100,000 units. Garden Supplies Company has discovered an additional process to change the standard tomato planter into a deluxe tomato planter. Additional variable costs are estimated at \$4 per unit. The deluxe tomato planter would sell for \$24. Additional fixed manufacturing overhead cost of \$23,000 would be incurred if the deluxe tomato planter is produced. There would be no change in the number of units produced.

282) _____

Make an analysis to determine if Garden Supplies Company should continue producing a selling the standard tomato planter or change the standard tomato planter into a deluxe to planter.

283) Krass Snowboard Mfg. Inc. manufactures snowboards. Its cost of making 3,500 bindings is as follows:

283) _____

Direct materials	\$32,000
Direct labour	6,200
Variable manufacturing overhead	4,500
Fixed manufacturing overhead	<u>13,300</u>
Total manufacturing costs	<u>\$56,000</u>

Suppose O'Brien will sell bindings to Krass for \$15 each. Krass will pay \$1.50 per unit to transport the bindings to its manufacturing plant, where it will add its own logo at a cost of \$0.80 per binding. Krass's accountants predict that purchasing the bindings from O'Brien will enable the company to avoid \$5,500 of fixed overhead. Prepare an analysis to show whether Krass should make or buy the bindings.

284) Krass Snowboard Mfg. Inc. manufactures snowboards. Its cost of making 3,500 bindings is as follows:

284) _____

Direct materials	\$32,000
Direct labour	6,200
Variable manufacturing overhead	4,500
Fixed manufacturing overhead	<u>13,300</u>
Total manufacturing costs	<u>\$56,000</u>

Suppose O'Brien will sell bindings to Krass for \$15 each. Krass will pay \$1.50 per unit to transport the bindings to its manufacturing plant, where it will add its own logo at a cost of \$0.80 per binding. Krass' accountants predict that purchasing the bindings from O'Brien will enable the company to avoid \$5,500 of fixed overhead. The facilities freed by purchasing bindings from O'Brien can be used to manufacture another product that will contribute \$6 to profit. Total fixed costs will be the same as if Krass had produced the bindings. Show which alternative makes the best use of Krass' facilities: (a) make bindings, (b) buy bindings and leave facilities idle, or (c) buy bindings and make another product.

- 285) Hidef Electronics manufactures a digital flat screen TV which includes an MP3 player. Its current costs of manufacturing the needed 100,000 MP3 players per month are: 285) _____

Direct materials	\$900,000
Direct labour	240,000
Variable manufacturing overhead	160,000
Fixed manufacturing overhead	<u>300,000</u>
Total manufacturing costs	<u>\$1,600,000</u>

Another manufacturer offers to sell Hidef the needed 100,000 MP3 players per month for \$ per unit on as flexible a delivery schedule as Hidef wants. Hidef expects to reduce fixed overhead by \$50,000 per month if MP3 players are purchased from the outside supplier. If MP3 players are purchased Hidef will pay \$0.50 per unit to transport the MP3 players to its manufacturing plant, where it will add its own logo at a cost of \$0.10 per player.

No alternative use is available for the unused capacity if MP3 players are purchased rather than manufactured. Prepare an analysis to show whether Hidef should make or buy the MP3 players.

- 286) Hidef Electronics manufactures a digital flat screen TV which includes an MP3 player. Its current costs of manufacturing the needed 100,000 MP3 players per month are: 286) _____

Direct materials	\$540,000
Direct labour...	140,000
Variable manufacturing overhead	100,000
Fixed manufacturing overhead	<u>200,000</u>
Total manufacturing costs	<u>\$980,000</u>

Another manufacturer offers to sell Hidef the needed 100,000 MP3 players per month for \$ per unit on as flexible a delivery schedule as Hidef wants. Hidef expects to reduce fixed overhead by \$30,000 per month if MP3 players are purchased from the outside supplier. If MP3 players are purchased Hidef will pay \$0.50 per unit to transport the MP3 players to its manufacturing plant, where it will add its own logo at a cost of \$0.10 per player.

No alternative use is available for the unused capacity if MP3 players are purchased rather than manufactured. Prepare an analysis to show whether Hidef should make or buy the MP3 players.

287) Sarah's Talking Dolls manufactures a computer chip used in the production of dolls for children. When 5,000 dolls are produced, the costs per part are:

287) _____

Direct materials	\$2.00
Direct labour	1.50
Variable manufacturing overhead	1.75
Fixed manufacturing overhead	2.25
Total	<u>\$7.50</u>

Sam's Associates has offered to sell Sarah's Talking Dolls 5,000 parts for \$5.75 each. If Sara accepts the offer, fixed manufacturing costs will decrease by \$1.00 per unit.

- A) What is the relevant per unit cost to manufacture the part?
- B) Which alternative is best for Sarah's Talking Dolls and by how much?

TRUE/FALSE. Write 'T' if the statement is true and 'F' if the statement is false.

288) A decision must be made at the point in a process where a product can either be sold as is or processed further.

288) _____

289) A sunk cost is a past cost that cannot be changed regardless of which future action is taken.

289) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

290) The benefit foregone by not choosing an alternative course of action is referred to as a(n)

290) _____

- A) variable cost.
- B) opportunity cost.
- C) incremental cost.
- D) sunk cost.

291) In making the decision whether to sell a product as is or process the product further, the expected income from selling the product as is may be defined as which of the following?

291) _____

- A) A limiting factor in processing the product further
- B) A sunk cost of processing the product further
- C) The opportunity cost of selling the product as is
- D) The opportunity cost of processing the product further

292) In a sell or process further decision, the company should process further if the extra

292) _____

- A) cost of processing further is greater than the extra revenue.
- B) cost of processing further is less than the extra revenue.
- C) cost of processing further is the same as the extra revenue.
- D) revenue from processing further is less than the extra cost.

- 293) Gas Country is considering selling premium gasoline. It already sells regular for \$1.22/litre and would sell premium gasoline for \$1.28/litre. The cost to further refine the regular gas into premium would be \$.02/litre. A cost that would not be considered in this decision would be
A) the opportunity cost of the regular gasoline.
B) the extra revenue generated by selling premium.
C) the cost of further processing the regular gas into premium gas.
D) the cost of refining the regular gasoline. 293) _____
- 294) The Schmidt Corporation has in its inventory 4,000 damaged radios that cost \$50,000. The radios can be sold in their present condition for \$32,000, or repaired at a cost of \$43,000 and sold for \$66,000. What is the opportunity cost of selling the radios in their present condition?
A) \$23,000 B) \$50,000 C) \$32,000 D) \$43,000 294) _____
- 295) Mabel has the following information to evaluate her current salary of \$63,000 versus total revenues of \$120,000 and expenses of \$75,000 from starting a new business. How much is the opportunity cost associated with starting the new business?
A) \$120,000 B) \$75,000 C) \$63,000 D) \$45,000 295) _____
- 296) David has the following information to evaluate his current salary of \$62,000 versus total revenues of \$110,000 and expenses of \$67,000 from starting a new business. How much is the opportunity cost associated with staying at his current job?
A) \$110,000 B) \$5,000 C) \$62,000 D) \$43,000 296) _____
- 297) Fine Pottery Processors manufactures two products, platters and tureens, from a joint process. Platters are allocated \$5,000 of the total joint costs of \$25,000. There are 1,500 platters produced and 1,500 tureens produced each year. Platters can be sold at the split-off point for \$12 per unit, or they can be processed further into a deluxe platter for additional processing costs of \$5,000 and sold for \$16 for each deluxe platter. If the platters are processed further and made into deluxe platters, the effect on operating income would be
A) \$18,000 net decrease in operating income.
B) \$18,000 net increase in operating income.
C) \$1,000 net decrease in operating income.
D) \$1,000 net increase in operating income. 297) _____

- 298) A joint production process at Sunnybrook Farms results in two products, strawberry syrup and strawberry jam. Strawberry syrup can be further processed into strawberry juice, and strawberry jam can be further processed into specialty jams. The following cost and activity data relate to these two products:

298) _____

	Strawberry syrup	Strawberry jam
Joint costs allocated	\$8,000	\$14,000
Number of units produced from joint process	2,000	2,000
Selling price at split-off point	\$2.50	\$1.75
Selling price after processing further	\$5.00	\$2.00
Cost of processing further	\$3,000	\$2,000

If strawberry syrup is processed further into the specialty strawberry juice, what would be the overall effect on operating income assuming the same number of units will be produced?

- A) \$2,000 net increase in operating income B) \$5,000 net increase in operating income
C) \$5,000 net decrease in operating income D) \$2,000 net decrease in operating income
- 299) Polly Enterprises manufactures lamps that normally sell for \$75 each. There are 300 defective lamps in inventory, which cost \$55 each to manufacture. These defective units can be sold as is for \$20 each, or they can be processed further for a cost of \$45 each and then sold for the normal selling price. Polly Enterprises would be better off by a
- A) \$16,500 net increase in operating income if lamps are sold as is.
B) \$16,500 net increase in operating income if lamps are repaired.
C) \$3,000 net increase in operating income if lamps are repaired.
D) \$3,000 net increase in operating income if lamps are sold as is.
- 300) Vera Enterprises has in its inventory 1,000 damaged handbags that cost \$20,000. The handbags can be sold in their present condition for \$12,000, or repaired at a cost of \$13,000 and sold for \$31,000. What is the opportunity cost of selling the handbags in their present condition?
- A) \$44,000 B) \$25,000 C) \$32,000 D) \$18,000
- 301) Sierra has the following information to evaluate her current salary of \$45,000 versus total revenues of \$62,000 and expenses of \$57,000 from starting a new business. How much is the opportunity cost associated with starting the new business?
- A) \$5,000 B) \$57,000 C) \$45,000 D) \$62,000
- 302) Kathy has the following information to evaluate her current salary of \$53,000 versus total revenues of \$82,000 and expenses of \$69,000 from starting a new business. How much is the opportunity cost associated with staying at her current job?
- A) \$151,000 B) \$53,000 C) \$16,000 D) \$13,000

299) _____

300) _____

301) _____

302) _____

- 303) Brittany Furniture manufactures two products, pillows and cushions, from a joint process. Pillows are allocated \$7,000 of the total joint costs of \$25,000. There are 2,500 pillows produced and 2,500 cushions produced each year. Pillows can be sold at the split-off point for \$12 per unit, or they can be processed further into a deluxe pillow for additional processing costs of \$8,000 and sold for \$16 for each deluxe pillow. If the pillows are processed further and made into deluxe pillows, the effect on operating income would be
- A) \$2,000 net decrease in operating income.
 - B) \$2,000 net increase in operating income.
 - C) \$30,000 net decrease in operating income.
 - D) \$30,000 net increase in operating income.

303) _____

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

- 304) Steins' Dairy processes 4,000 hectolitres (hL) of fluid raw milk per month. One hectolitre equals 100 litres. After the raw milk is received at the dairy it is separated by machines into cream and liquid skim milk. The cost of processing the 4,000 hL of raw milk up to the split off point to yield 1,000 hL of cream and 3,000 hL of liquid skim milk is \$345,000. The selling price of cream is \$155.00 per hectolitre and the selling price of liquid skim milk is \$75.00 per hectolitre. Steins' Dairy has the opportunity to process further all of its cream production into whipping cream which will sell for \$385 per hL. The cost of processing 1,000 hL of cream to net 800 hL of whipping cream is \$135,000. Should Steins' sell the cream or process it into whipping cream. Show the expected net revenue difference between the two alternatives.

304) _____

- 305) Steins' Dairy processes 4,000 hectolitres (hL) of fluid raw milk per month. One hectolitre equals 100 litres. After the raw milk is received at the dairy it is separated by machines into cream and liquid skim milk. The cost of processing the 4,000 hL of raw milk up to the split off point to yield 1,000 hL of cream and 3,000 hL of liquid skim milk is \$345,000. The selling price of cream is \$155.00 per hectolitre and the selling price of liquid skim milk is \$75.00 per hectolitre. Steins' Dairy has the opportunity to process further all of its liquid skim milk production into condensed milk which will sell for \$310 per hL. The cost of processing 3,000 hL of skim milk to net 2,000 hL of condensed milk is \$270,000. Should Steins' sell the liquid skim milk or process it into condensed milk. Show the expected net revenue difference between the two alternatives.

305) _____

- 306) Steins' Dairy processes 4,000 hectolitres (hL) of fluid raw milk per month. One hectolitre equals 100 litres. After the raw milk is received at the dairy it is separated by machines into cream and liquid skim milk. The cost of processing the 4,000 hL of raw milk up to the split off point to yield 1,000 hL of cream and 3,000 hL of liquid skim milk is \$345,000. The selling price of cream is \$165.00 per hectolitre and the selling price of liquid skim milk is \$80.00 per hectolitre. Steins' Dairy has the opportunity to process further all of its cream production into whipping cream which will sell for \$360 per hL. The cost of processing 1,000 hL of cream to net 800 hL of whipping cream is \$145,000. Should Steins' sell the cream or process it into whipping cream. Show the expected net revenue difference between the two alternatives.

306) _____

307) Steins' Dairy processes 4,000 hectolitres (hL) of fluid raw milk per month. One hectolitre equals 100 litres. After the raw milk is received at the dairy it is separated by machines into cream and liquid skim milk. The cost of processing the 4,000 hL of raw milk up to the split off point to yield 1,000 hL of cream and 3,000 hL of liquid skim milk is \$345,000. The selling price of cream is \$165.00 per hectolitre and the selling price of liquid skim milk is \$80.00 per hectolitre. Steins' Dairy has the opportunity to process further all of its liquid skim milk production into condensed milk which will sell for \$275 per hL. The cost of processing 3,000 hL of skim milk to net 2,000 hL of condensed milk is \$315,000. Should Steins' sell the liquid skim milk or process it into condensed milk. Show the expected net revenue difference between the two alternatives. 307) _____

308) Patty's Mailbox Company produces a standard mailbox with variable manufacturing cost: \$18 per unit. The selling price of the standard mailbox is \$25 per unit. The fixed manufacturing overhead cost is \$67,000. A normal production run includes 100,000 units. Patty's Mailbox Company has discovered an additional process to change the standard mailbox into a deluxe mailbox. Additional costs are estimated at \$4 per unit. The deluxe mailbox would sell for \$29 per unit. Additional fixed manufacturing overhead cost of \$23,000 would be incurred if the deluxe mailbox is produced. There would be no change in the number of units produced. 308) _____

Make an analysis to determine if Patty's Mailbox Company should continue to produce and sell the standard mailbox or change the standard mailbox into a deluxe mailbox.

MATCHING. Choose the item in column 2 that best matches each item in column 1.

Match the following:

309) Benefits foregone by not choosing an alternative course of action	A) Sunk costs	309) _____
	B) Opportunity costs	
310) Costs that were incurred in the past and cannot be changed	C) Sales mix	310) _____
	D) Constraint	
311) Costs of developing, producing and delivering a product or service	E) Relevant costs	311) _____
	F) Contribution margin	
312) Expected future costs that differs among alternatives	G) Full cost of product or service	312) _____
	H) Variable costing	
313) A factor that restricts production or sales of a product		313) _____

TRUE/FALSE. Write 'T' if the statement is true and 'F' if the statement is false.

314) In transfer pricing the minimum transfer price acceptable to the sending department should be the incremental production cost plus the opportunity cost. 314) _____

315) In transfer pricing decisions the available capacity of the producing department must be considered. 315) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

316) A transfer should take place in a company when 316) _____
 A) transfer price \geq selling price \geq purchasing price.
 B) selling price \leq transfer price \leq purchasing price.
 C) purchasing price \geq selling price \geq transfer price.
 D) purchasing price \leq transfer price \leq selling price.

317) The minimum transfer price should be 317) _____
 A) the variable manufacturing cost. B) the direct materials cost only.
 C) the full product cost. D) the available market price.

318) The maximum transfer price should be 318) _____
 A) the variable manufacturing cost. B) the available market price.
 C) the direct materials cost only. D) the full product cost.

Use the information below to answer the following question(s):

Beta Shoe Ltd. manufactures only one type of shoe and has two divisions, the Sole Division, and the Assembly Division. The Sole Division manufactures soles for the Assembly Division, which completes the shoe and sells it to retailers. The Sole Division "sells" soles to the Assembly Division. The market price for the Assembly Division to purchase a pair of soles is \$20. (Ignore changes in inventory.) The fixed costs for the Sole Division are assumed to be the same over the range of 40,000-100,000 units. The fixed costs for the Assembly Division are assumed to be \$7 per pair at 100,000 units.

Sole's costs per pair of soles are:

Direct materials	\$4
Direct labour	\$3
Variable overhead	\$2
Division fixed costs	\$1

Assembly's costs per completed pair of shoes are:

Direct materials	\$6
Direct labour	\$2
Variable overhead	\$1
Division fixed costs	\$7

319) Assume the transfer price for a pair of soles is 180% of total costs of the Sole Division and 40,000 319) _____
 of soles are produced and transferred to the Assembly Division. The Sole Division's operating income is
 A) \$440,000. B) \$400,000. C) \$248,000. D) \$360,000. E) \$320,000.

320) What is the minimum transfer price per unit Soles should charge the assembly division? 320) _____
 A) \$ 4.00 B) \$ 9.00 C) \$ 18.00 D) \$ 10.00

- 321) Assume the Soles division can sell 100,000 soles to an outside company for \$13.50/unit. What is the minimum transfer price per unit Soles should charge the assembly division? 321) _____
- A) \$ 18.00 B) \$ 9.00 C) \$ 13.50 D) \$ 4.00

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

- 322) TK Electronics is a manufacturer with two departments: Computer Chips and Cell Phones. A computer chip that is produced in the Chips Department can be sold to customers at \$2.50 per chip. The costs associated with the computer chips are as follows: 322) _____

Variable manufacturing costs	\$1.20
Variable selling and administrative costs	\$0.40
Capacity	250,000 units
Current production	250,000 units

The Cell Phone Department has been purchasing the chips that they need for \$2.25 per chip from Chips R Us, but the manager was thinking that if the Chips Department could supply chips for less than what Chips R Us is asking, then they would arrange a transfer between departments instead of giving the business to an external company.

Required:

Prepare an analysis that demonstrates if the Chips Department should supply the chips to Cell Phone Department.

- 323) TK Electronics is a manufacturer with two departments: Computer Chips and Cell Phones. A computer chip that is produced in the Chips Department can be sold to customers at \$2.50 per chip. The costs associated with the computer chips are as follows: 323) _____

Variable manufacturing costs	\$1.20
Variable selling and administrative costs	\$0.40
Capacity	250,000 units
Current production	200,000 units

The Cell Phone Department has been purchasing the chips that they need for \$2.25 per chip from Chips R Us, but the manager was thinking that if the Chips Department could supply chips for less than what Chips R Us is asking, then they would arrange a transfer between departments instead of giving the business to an external company. The Cell Phone Department requires 30,000 chips per period. Variable marketing and administrative expense can be reduced by 75% if the units are transferred internally.

Required:

Prepare an analysis that demonstrates if the Chips Department should supply the chips to Cell Phone Department.

- 324) TK Electronics is a manufacturer with two departments: Computer Chips and Cell Phones. The computer chip that is produced in the Chips Department can be sold to customers at \$5.50 per chip. The costs associated with the computer chips are as follows: 324) _____

Variable manufacturing costs	\$1.80
Variable selling and administrative costs.	\$0.60
Capacity.	375,000 units
Current production	375,000 units

The Cell Phone Department has been purchasing the chips that they need for \$3.50 per chip from Chips R Us, but the manager was thinking that if the Chips Department could supply the chips for less than what Chips R Us is asking, then they would arrange a transfer between departments instead of giving the business to an external company.

Required:

Prepare an analysis that demonstrates if the Chips Department should supply the chips to the Cell Phone Department.

- 325) TK Electronics is a manufacturer with two departments: Computer Chips and Cell Phones. The computer chip that is produced in the Chips Department can be sold to customers at \$5.50 per chip. The costs associated with the computer chips are as follows: 325) _____

Variable manufacturing costs	\$1.80
Variable selling and administrative costs.	\$0.60
Capacity.	375,000 units
Current production	325,000 units

The Cell Phone Department has been purchasing the chips that they need for \$3.50 per chip from Chips R Us, but the manager was thinking that if the Chips Department could supply the chips for less than what Chips R Us is asking, then they would arrange a transfer between departments instead of giving the business to an external company. The Cell Phone Department requires 50,000 chips per period. Variable marketing and administrative expenses can be reduced by 75% if the units are transferred internally.

Required:

Prepare an analysis that demonstrates if the Chips Department should supply the chips to the Cell Phone Department.

- 326) Clean Air is a manufacturer of dust collection systems for home workshops. Each of the systems requires a filter bag to trap sawdust and shavings from woodworking equipment. Clean Air manufactures the filter bags which are sold through hardware stores and also used in the manufacture of the company's dust collection systems. The Dust Collection System Department currently needs 250,000 filters to meet its manufacturing needs for the period. Filters can be purchased from an outside supplier for \$15.00 per unit. The Filter Manufacturing Department records reveal the following information:

Market selling price of filters	\$22.00
Variable manufacturing costs per filter	\$12.00
Variable marketing and administrative costs per filter	\$3.00
Fixed manufacturing costs	\$2,000,000
Fixed marketing and administrative costs	\$1,250,000
Capacity	3,000,000 filters
Current sales volume	3,000,000 filters

The CEO was thinking that if the Filter Manufacturing Department could supply the filters at a lower price than the Dust Collection System Department is currently paying to outside suppliers, then they would arrange an internal transfer between departments rather than give the business to an external company.

Required:

Prepare an analysis that demonstrates if the Filter Manufacturing Department should supply the filters to the Dust Collection System Department.

326) _____

- 327) Clean Air is a manufacturer of dust collection systems for home workshops. Each of the systems requires a filter bag to trap sawdust and shavings from woodworking equipment. Clean Air manufactures the filter bags which are sold through hardware stores and also used in the manufacture of the company's dust collection systems. The Dust Collection System Department currently needs 250,000 filters to meet its manufacturing needs for the period. Filters can be purchased from an outside supplier for \$15.00 per unit. The Filter Manufacturing Department records reveal the following information.

Market selling price of filters	\$22.00
Variable manufacturing costs per filter	\$12.00
Variable marketing and administrative costs per filter	\$3.00
Fixed manufacturing costs	\$2,000,000
Fixed marketing and administrative costs	\$1,250,000
Capacity	3,000,000 filters
Current sales volume	2,500,000 filters

The CEO was thinking that if the Filter Manufacturing Department could supply the filters at a lower price than the Dust Collection System Department is currently paying to outside suppliers, then they would arrange an internal transfer between departments rather than give the business to an external company. If the internal transfer is arranged the variable marketing and administrative costs for the transferred filters can be avoided.

Required:

Prepare an analysis that demonstrates if the Filter Manufacturing Department should supply the filters to the Dust Collection System Department.

327) _____

- 328) Clean Air is a manufacturer of dust collection systems for home workshops. Each of the systems requires a filter bag to trap sawdust and shavings from woodworking equipment. Clean Air manufactures the filter bags which are sold through hardware stores and also used in the manufacture of the company's dust collection systems. The Dust Collection System Department currently needs 200,000 filters to meet its manufacturing needs for the period. Filters can be purchased from an outside supplier for \$15.00 per unit. The Filter Manufacturing Department records reveal the following information.

Market selling price of filters.	\$18.00
Variable manufacturing costs per filter...	\$9.60
Variable marketing and administrative costs per filter	\$2.40
Fixed manufacturing costs	\$1,600,000
Fixed marketing and administrative costs	\$1,000,000
Capacity	2,400,000 filters
Current sales volume	2,400,000 filters

The CEO was thinking that if the Filter Manufacturing Department could supply the filters at a lower price than the Dust Collection System Department is currently paying to outside suppliers, then they would arrange an internal transfer between departments rather than going to the business to an external company.

Required:

Prepare an analysis that demonstrates if the Filter Manufacturing Department should supply the filters to the Dust Collection System Department.

328) _____

- 329) Clean Air is a manufacturer of dust collection systems for home workshops. Each of the systems requires a filter bag to trap sawdust and shavings from woodworking equipment. Clean Air manufactures the filter bags which are sold through hardware stores and also used in the manufacture of the company's dust collection systems. The Dust Collection System Department currently needs 200,000 an outside supplier for \$15.00 per unit. The Filter Manufacturing Department records reveal the following information.

Market selling price of filters.	\$18.00
Variable manufacturing costs per filter	\$9.60
Variable marketing and administrative costs per filter	\$2.40
Fixed manufacturing costs	\$1,600,000
Fixed marketing and administrative costs	\$1,000,000
Capacity	2,400,000 filters
Current sales volume	2,000,000 filters

The CEO was thinking that if the Filter Manufacturing Department could supply the filters at a lower price than the Dust Collection System Department is currently paying to outside suppliers, then they would arrange an internal transfer between departments rather than going to the business to an external company. If the internal transfer is arranged the variable marketing and administrative costs for the transferred filters can be avoided.

Required:

Prepare an analysis that demonstrates if the Filter Manufacturing Department should supply the filters to the Dust Collection System Department.

329) _____

- 330) Alsation Ltd. has two divisions: The Machining Division prepares the raw materials into component parts, and the Assembly Division assembles the components into finished products. No inventories exist in either division at the beginning of the year. During the year the Machining Division prepared 80,000 square metres of sheet metal at a cost of \$480,000. All production was transferred to the Assembly Division where the metal was converted into 80,000 units of finished product at an additional cost of \$5 per unit. The 80,000 units were sold for \$2,000,000.

Required:

- Determine the operating income for each division if the transfer price from Machining to Assembly is at cost.
- Determine the operating income for each division if the transfer price is \$5/square metre.
- Since the Machining Division has all of its sales internally to the Assembly Division, do you think the manager cares what price is selected? Why? Should the Machining Division be a cost centre or a profit centre under the circumstances?

Answer Key

Testname: UNTITLED3

- 1) TRUE
- 2) TRUE
- 3) TRUE
- 4) TRUE
- 5) TRUE
- 6) TRUE
- 7) TRUE
- 8) TRUE
- 9) C
- 10) A
- 11) A
- 12) A
- 13) D
- 14) D
- 15) D
- 16) B
- 17) B
- 18) A
- 19) D
- 20) C
- 21) A
- 22) A
- 23) D
- 24) D
- 25)

a	The cost of the new machine	Relevant
b	The original price of the old machine	Irrelevant
c	Interest expense on the new machine	Relevant
d	Fixed selling expenses	Relevant
e	Variable cost of raw materials	Irrelevant
f	The book value of the old machine	Irrelevant
g	The market value of the old machine	Relevant
h	The repairs and maintenance cost of the old machine	Relevant
i	The maintenance cost of the new machine	Relevant
- 26) Relevant information affects a decision and irrelevant information does not. Relevant information differs between alternatives and affects the future. For example, the cost of insurance for a car will differ depending upon the make, model, year, etc of the car. Therefore, this information is relevant when deciding upon which car to purchase. The cost of a parking sticker to park in the school lot is not relevant, since it is the same regardless of the make, model, year, etc. of car.

Answer Key

Testname: UNTITLED3

27) Advantages:

- Increased collaboration between employees
- Improved quality when integrating ideas
- Easier to build a team environment

Disadvantages:

- Reduction in employee moral
- Increased cost to employees may result in demands for reimbursement
- Loss in productivity from extra commuting time

There is a significant negative environmental impact from the costs associated with commuting to and from work.

28) A sunk cost was incurred in the past and cannot be changed. The fact that is historical and cannot be changed means it is irrelevant to decisions.

29) A

30) B

31) A

32) A

33) B

34) A

35) TRUE

36) FALSE

37) FALSE

38) FALSE

39) FALSE

40) TRUE

41) TRUE

42) TRUE

43) TRUE

44) FALSE

45) FALSE

46) FALSE

47) TRUE

48) TRUE

49) TRUE

50) A

51) D

52) B

53) D

54) B

55) D

56) B

57) C

58) D

59) C

Answer Key

Testname: UNTITLED3

60) B

61) C

62) A

63) C

64) D

65) C

66) A

67) A

68) B

69) 1. \$25,000,000 in fixed costs + (500,000 golfers × \$10 variable cost/golfer) = \$30,000,000

2. \$30,000,000 in total costs + (\$50,000,000 × 10% return) = \$35,000,000

3. 500,000 golfers × \$65/round = \$32,500,000

4. \$5,000,000 desired operating income - \$2,500,000 operating income at \$65/round equals a shortfall of \$2,500,000

70) 1.

Fixed costs	\$580,000
Plus: Total variable costs (55,000 × \$5 per person)	<u>275,000</u>
Total Costs	\$855,000
Plus: Desired profit (\$2 million × 15%)	<u>300,000</u>
Target revenue	\$1,155,000
Divided by number of customer visits	<u>÷ 55,000</u>
Cost-plus price customer visit	<u>\$21</u>

2. \$1,100,000 - \$1,155,000 = \$ (55,000)

71)

Fixed costs	\$6,500
Plus: Total variable costs (250 × \$15 per cake)	<u>3,750</u>
Total Costs	10,250
Plus: Desired profit (\$200,000 × 1.5% per month)	<u>3,000</u>
Target revenue	13,250
Expected revenue (250 × \$45)	<u>11,250</u>
Revenue Shortfall	<u>\$2,000</u>

Conclusion: Holsom's owners cannot earn the desired rate of return under its present cost structure at a price of \$45 per cake.

72)

Fixed costs	\$7,500
Plus: Total variable costs (300 × \$12 per cake)	<u>3,600</u>
Total Costs	11,100
Plus: Desired profit (\$200,000 × 1.5% per month)	<u>3,000</u>
Target revenue	14,100
Expected revenue (300 × \$40)	<u>12,000</u>
Revenue shortfall	<u>\$2,100</u>

Conclusion: Holsom Cakes cannot earn the owners' desired rate of return under the current cost and price structure.

Answer Key

Testname: UNTITLED3

73) Requirement 1

Fixed costs	\$7,500
Plus: Total variable costs (300 × \$12 per cake)	<u>3,600</u>
Total Costs	11,100
Plus: Desired profit (\$200,000 × 1.5% per month)	<u>3,000</u>
Target revenue	14,100
Expected revenue (300 × \$40)	<u>12,000</u>
Revenue shortfall	<u>\$2,100</u>

Conclusion: Holsom Cakes cannot earn the owners' desired rate of return under the current cost and price structure.

Requirement 2

Fixed costs	\$7,500
Plus: Total variable costs (300 × \$12 per cake)	<u>3,600</u>
Total Costs	11,100
Plus: Desired profit (\$200,000 × 1.5% per month)	<u>3,000</u>
Target revenue	14,100
Expected revenue (300 × \$40)	<u>12,000</u>
Revenue shortfall	<u>\$2,100</u>
FC + profit (\$7,500 + \$3,000)	\$10,500
Divided by CM (\$40 - \$12)	\$28
Total sales required	<u>375</u>

74) \$68.75

Variable costs per unit	\$8.00
Expected volume	400,000
Total variable costs	\$3,200,000
Investors' return (% of assets)	14%
Total assets	\$45,000,000
Desired profit	\$6,300,000
Total fixed costs	\$18,000,000
Total variable costs	\$3,200,000
Total costs	\$21,200,000
Desired profit	\$6,300,000
Target revenue	\$27,500,000
Divide by	Divide by
Expected volume	400,000
Cost-plus price per round of golf	\$68.75

Answer Key

Testname: UNTITLED3

75) Req. 1

Ramar Builders will need to emphasize a target-costing approach to pricing. Because the townhomes are not unique and face stiff competition, Ramar will not have much control over pricing.

Req. 2

The variable cost of each home sale is \$188,500 (land + construction + landscaping + variable marketing costs). Since Ramar is a price-taker, the target cost of each of its homes is:

Market price of similar homes.....	\$200,000
Less: Target profit ($\$188,500 \times 12\%$).....	(22,620)
Target cost.....	\$177,380
vs. Actual current variable cost.....	183,500
Short fall.....	\$ 11,120

Given the current market price of \$200,000 and Ramar's current variable costs of \$183,500, it will not be able to achieve target profit. Its profit will fall short by about \$11,025 per home sale.

76) Req. 1

Ramar Builders will need to emphasize a target-costing approach to pricing. Because the townhomes are not unique and face stiff competition, Ramar will not have much control over pricing.

Req. 2

The variable cost of each home sale is \$179,000 (land + construction + landscaping + variable marketing costs). Since Ramar is a price-taker, the target cost of each of its homes is:

Market price of similar homes.....	\$205,000
Less: Target profit ($\$179,00 \times 12\%$).....	(21,480)
Target cost.....	\$183,520
vs. Actual current variable cost.....	179,000

Given the current market price of \$205,000 and Ramar's current variable costs of \$179,000, it will achieve its target profit.

77) Aire Breeze should use a cost plus pricing approach as it has a unique product.

78) Variable Cost ($\$1.50 + \$ 0.25$) = \$1.75
Fixed Cost ($\$200,000 + \$125,000$) / 200,000 = \$1.625
Desired Profit ($\$1,000,000 \times 15\%$) / 200,000 = \$0.75

Price per unit \$4.125

79) What is the target profit? - What do shareholders expect for their return on investment.

What will customers pay? - This is a function of competition, the product's (or service's) uniqueness, marketing, overall economic conditions.

Are we a price setter or a price taker? - Is the company dealing in a competitive environment with a commodity, a generic product, or does the company offer unique products and services with less competition.

80) TRUE

81) FALSE

82) TRUE

83) B

84) C

Answer Key

Testname: UNTITLED3

85)

Expected revenue (55,000 × \$20)	\$1,100,000
Less: Fixed costs (\$580,000 - \$27,500)	(\$552,500)
Desired profit (\$2 million × 15%)	(300,000)
Maximum variable costs allowable	247,500
Divided by expected number of customer visits	55,000
Allowable variable cost per customer visit	<u>\$4.50</u>

Conclusion: Good Looks can earn the desired rate of return under its present cost structure at a price of \$20 per customer visit if fixed costs are reduced by the estimated \$27,500 and variable costs per customer visit are reduced by \$0.50 to \$

86) $20,000,000 \text{ in fixed costs} + (500,000 \text{ golfers} \times \$12 \text{ variable cost/golfer}) = \underline{\$26,000,000}$

$\$26,000,000 \text{ in total costs} + (\$40,000,000 \times 12\% \text{ return}) = \underline{\$30,800,000}$

$\$30,000,000 - 26,000,000 = 4,000,000$

$\$4,800,000 \text{ desired operating income} - \$4,000,000 \text{ operating income at } \$60/\text{round equals a shortfall of } \underline{\$800,000}$

87) \$1,500,000 (profit expectation shortfall) or 3%.

No, investors will not be happy. They wanted 14% ROI.

Market price per unit	\$65.00
Expected volume	400,000
Revenue at market price	\$26,000,000
Variable costs per unit	\$8.00
Expected volume	400,000
Total variable costs	\$3,200,000
Revenue at market price	\$26,000,000
Less: total fixed costs	\$(18,000,000)
total variable costs	\$(3,200,000)
Operating income	\$4,800,000
Investors' return (% of assets)	14%
Total assets	\$45,000,000
Desired profit	\$6,300,000
Operating income	\$(4,800,000)
Profit expectation shortfall	\$1,500,000
Profit expectation shortfall	\$1,500,000
Divide by	Divide by
Total assets	\$45,000,000
Percent of assets	3%

Answer Key

Testname: UNTITLED3

- 88) A primary reason a firm would adopt target costing is to reduce costs. Its unique approach is to design costs out of products during the design stage in the product life cycle. Many firms are adopting this approach when they cannot reduce cost further using traditional costing methods, which focus on cost reductions in manufacturing.

Another reason is that the market requires a price-taking strategy due to the product lacking uniqueness and/or heavy competition.

- 89) A
- 90) A
- 91) B
- 92) B
- 93) B
- 94) TRUE
- 95) TRUE
- 96) TRUE
- 97) TRUE
- 98) FALSE
- 99) FALSE
- 100) FALSE
- 101) TRUE
- 102) D
- 103) C
- 104) D
- 105) B
- 106) C
- 107) A
- 108) A
- 109) C
- 110) C
- 111) B
- 112) D
- 113) B
- 114) C
- 115) A
- 116) A
- 117) B
- 118) C
- 119) A
- 120) A
- 121) A
- 122) B
- 123) C
- 124) D
- 125) C

Answer Key

Testname: UNTITLED3

126) A

127) A

128) B

129) A)

Relevant costs:	
Direct material	\$34.00
Direct labour	\$8.00
Variable manufacturing overhead	\$14.00
Total relevant costs	\$56.00

B)

Special offer volume	1,000
Special offer price	\$60.00
Additional revenue from order	\$60,000
Relevant costs:	
Direct material	\$34.00
Direct labour	\$8.00
Variable manufacturing overhead	\$14.00
Total relevant costs	\$56.00
Special offer volume	1,000
Additional expenses from order	\$56,000
Additional revenue from order	\$60,000
Additional expenses from order	\$(56,000)
Change in operating income	\$4,000

C) Yes, X Factor Sports should accept the order.

130)

Special offer volume	20,000
Special offer price	\$0.72
Additional revenue from order	\$14,400
Direct material	\$0.16
Direct labour	\$0.32
Variable manufacturing overhead	\$0.25
Total costs	\$0.73
Special offer volume	20,000
Additional expenses from order	\$14,600
Additional revenue from order	\$14,400
Additional expenses from order	\$(14,600)
Change in operating income	\$(200)

The company should reject the special order since total operating income would decrease if the special order were to be accepted.

Answer Key

Testname: UNTITLED3

131)

Direct material	\$12.00
Direct labour	19.00
Variable manufacturing overhead	6.00
Variable selling costs	5.00
Total relevant costs	\$42.00

132)

Special offer volume	1,000
Special offer price	\$40.00
Additional revenue from order	\$40,000
Direct material	\$12.00
Direct labour	19.00
Variable manufacturing overhead	6.00
Variable selling costs	5.00
Total relevant costs	\$42.00
Special offer volume	1,000
Additional expenses from order	\$42,000
Additional revenue from order	\$40,000
Additional expenses from order	(42,000)
Decrease in operating income	(\$2,000)

No, they should not accept the order as it results in less operating income.

133)

Production volume	150,000
Product QR selling price	\$24.00
Product QR revenue	\$3,600,000
Product Q variable costs	\$16.00
Product QR additional costs	3.00
Product QR variable costs	\$19.00
Production volume	150,000
Product QR total variable costs	\$2,850,000
Fixed manufacturing overhead for product Q	\$75,000
Additional fixed manufacturing overhead	\$4,500
Fixed manufacturing overhead for product QR	\$79,500
Product QR revenue	\$3,600,000
Product QR total variable costs	\$(2,850,000)
Fixed manufacturing overhead for product QR	\$(79,500)
Operating income for QR	\$670,500

Answer Key

Testname: UNTITLED3

134)

Production volume	150,000
Product Q selling price	\$20.00
Product Q revenue	\$3,000,000
Production volume	150,000
Product Q variable costs	\$16.00
Product Q total variable costs	\$2,400,000
Product Q revenue	\$3,000,000
Product Q total variable costs	\$(2,400,000)
Fixed manufacturing overhead for product Q	\$(75,000)
Operating income for Q	\$525,000

Product QR:	
Production volume	150,000
Product QR selling price	\$24.00
Product QR revenue	\$3,600,000
Product Q variable costs	\$16.00
Product QR additional costs	\$3.00
Product QR variable costs	\$19.00
Production volume	150,000
Product QR total variable costs	\$2,850,000
Fixed manufacturing overhead for product Q	\$75,000
Additional fixed manufacturing overhead	\$4,500
Fixed manufacturing overhead for product QR	\$79,500
Product QR revenue	\$3,600,000
Product QR total variable costs	\$(2,850,000)
Fixed manufacturing overhead for product QR	\$(79,500)
Operating income for QR	\$670,500

Operating income for QR	\$670,500
Divide by	Divide by
Operating income for Q	\$525,000
	1.277
Subtract	(1)
Increase in income	27.71%

Answer Key

Testname: UNTITLED3

135)

DataSave	
Incremental Analysis of Special Sales Order	
Expected increase in revenues	
Sale of 25,000 drives × \$18.00 each	\$ 450,000
Expected increase in expenses	
Variable manufacturing cost:	
25,000 packs × \$17.25 each*	(431,250)
Expected increase in operating income	<u>\$ 18,750</u>

*Variable costs = \$17.25 = \$11.50 + \$3.75 + \$2.00

Decision: Accept the special sales order.

136)

DataSave	
Incremental Analysis of Special Sales Order	
Expected increase in revenues	
Sale of 25,000 drives × \$18.00 each	\$ 450,000
Expected increase in expenses	
Variable manufacturing cost:	
25,000 packs × \$17.75 each*	(443,750)
New fixed cost	(9,000)
Expected increase in operating income	<u>\$ (2,750)</u>

*Variable costs = \$17.75 = \$11.50 + \$3.75 + \$2.00 + \$0.50

Decision: Reject the special sales order.

137)

DataSave	
Incremental Analysis of Special Sales Order	
Expected increase in revenues	
Sale of 25,000 drives × \$18.00 each	\$ 450,000
Expected increase in expenses	
Variable manufacturing cost:	
25,000 drives × \$14.75each*	(368,750)
Expected increase in operating income	<u>\$ 81,250</u>

*Variable costs \$14.75 = \$9.50 + \$3.00 + \$2.25

Decision: Accept the special sales order

Answer Key

Testname: UNTITLED3

138)

DataSave	
Incremental Analysis of Special Sales Order	
Expected increase in revenues	
Sale of 25,000 drives × \$18.00 each	\$ 450,000
Expected increase in expenses	
Variable manufacturing cost:	
25,000 drives × \$15.15 each*	(378,750)
New fixed cost	(12,000)
Expected increase in operating income	<u>\$ 59,250</u>

*Variable costs = \$15.15 = \$9.50 + \$3.00 + \$2.25 + \$0.40

Decision: Accept the special sales order.

139)

EasyFlow	
Incremental Analysis of Special Sales Order	
Expected increase in revenues	
Sale of 75,000 dozen × \$10.00 per dozen	\$ 750,000
Expected increase in expenses	
Variable manufacturing cost:	
75,000 dozen × \$8.50 each*	(637,500)
Expected increase in operating income	<u>\$ 112,500</u>

*Variable costs \$8.50 = \$5.75 + \$1.00 + \$1.75

Decision: Accept the special sales order

140)

EasyFlow	
Incremental Analysis of Special Sales Order	
Expected increase in revenues	
Sale of 75,000 dozen × \$10.00 per dozen	\$ 750,000
Expected increase in expenses	
Variable manufacturing cost:	
75,000 dozens × \$8.75 per dozen*	(656,250)
New fixed cost	(8,000)
Expected increase in operating income	<u>\$ 85,750</u>

*Variable costs \$8.75 = \$5.75 + \$1.00 + \$1.75 + \$0.25

Decision: Accept the special sales order.

Answer Key

Testname: UNTITLED3

141)

EasyFlow	
Incremental Analysis of Special Sales Order	
Expected increase in revenues	
Sale of 50,000 dozen × \$12.00 per dozen	\$ 600,000
Expected increase in expenses	
Variable manufacturing cost:	
50,000 dozen × \$8.75each*	(437,500)
Expected increase in operating income	<u>\$ 162,500</u>

*Variable costs \$6.75 = \$2.75 + \$2.00 + \$2.00

Decision: Accept the special sales order

142) Requirement 1

Quick Lift	
Incremental Analysis of Special Sales Order	
Expected increase in revenues —	
Sale of 75 lifts × \$2,100 each	\$ 157,500
Expected increase in expenses — Variable	
manufacturing expenses: 75 lifts × \$1,800 each*	(135,000)
Expected increase in operating income	<u>\$ 22,500</u>

*Variable manufacturing expense per unit = \$270,000 / 150 = \$1,800 per lift

Decision: Accept the special sales order.

Requirement 2

In addition to the effect of the special sale on operating income, Quick Lift should consider whether regular customer learn of the special price extended to SORG. If regular customers learn of this special sale, will it affect Quick Lift's ability to sell at its normal price? Also, what will be the effect on competitors? Will they view this sale as the start of a price war?

143) Requirement 1

Quick Lift	
Incremental Analysis of Special Sales Order	
Expected increase in revenues —	
Sale of 50 lifts × \$2,000 each	\$ 100,000
Expected increase in expenses — Variable	
manufacturing expenses: 50 lifts × \$1,900 each*	(95,000)
Expected increase in operating income	<u>\$ 5,000</u>

*Variable manufacturing expense per unit = \$380,000 / 200 = \$1,900 per lift

Decision: Accept the special sales order.

Requirement 2

In addition to the effect of the special sale on operating income, Quick Lift should consider whether regular customer learn of the special price extended to SORG. If regular customers learn of this special sale, will it affect Quick Lift's ability to sell at its normal price? Also, what will be the effect on competitors? Will they view this sale as the start of a price war?

Answer Key

Testname: UNTITLED3

144) Requirement 1

Quick Lift	
Incremental Analysis of Special Sales Order	
Expected increase in revenues —	
Sale of 50 lifts × \$2,000 each	\$ 100,000
Expected increase in expenses —	
Variable manufacturing expenses: 50 lifts × \$1,955 each*	(97,750)
Fixed manufacturing expenses	(10,000)
Expected increase in operating income	<u>\$ (7,750)</u>

*Variable manufacturing expense per unit = $(\$380,000 / 200) + \$55 = \$1,955$ per lift

Decision: Reject the special sales order.

Requirement 2

In addition to the effect of the special sale on operating income, Quick Lift should consider whether regular customer learn of the special price extended to SORG. If regular customers learn of this special sale, will it affect Quick Lift's ability to sell at its normal price? Also, what will be the effect on competitors? Will they view this sale as the start of a price war?

145) a.

Direct materials	\$100.00
Direct manufacturing labour $(\$12 \times 5,000)/15,000$	4.00
Variable manufacturing $(\$150,000/15,000)$	10.00
Fixed manufacturing $(\$300,000/15,000)$	2.00
Marketing and distribution $(\$250,000/15,000)$	16.67
Research and development $(\$200,000/15,000)$	13.33
Total	<u>\$146.00</u>

b.

Direct materials	\$100.00
Direct manufacturing labour	4.00
Variable manufacturing	10.00
Setup $(\$40,000/1,000)$	40.00
Total	<u>\$154.00</u>

146) Yes.

Special tickets $(300 \times \$67.50)$	\$20,250
Relevant Costs:	
Guide salaries $(300 \times \$37.50)$	\$11,250
Supplies $(300 \times \$3)$	900
Insurance $(300 \times \$12)$	3,600
Special costs	<u>300</u>
Increase in operating income	<u>\$4,200</u>

147) a. The lowest price Backwoods should bid on the 100 table one-time special order is \$5,600 = Variable costs $(\$80 \times .7$ 100 tables), the short-term incremental costs.

b. The lowest price Backwoods should bid on the long-term hotel chain order is \$120 per table = Full costs \$80 + 50% markup, the long-term targeted price.

Answer Key

Testname: UNTITLED3

148) a. Minimum acceptable bid price per unit

Direct materials	\$25.00
Direct manufacturing labour $(5,000/10,000) \times \$15$	7.50
Variable manufacturing $(\$175,000/10,000)$	17.50
Setup $(\$15,000/1000)$	<u>15.00</u>
Minimum acceptable bid	<u>\$65.00</u>

b. Full product cost

From a. above	\$65.00
Fixed costs $(\$425,000 + \$400,000 + \$475,000)/10,000$	<u>130.00</u>
	<u>\$195.00</u>

149) Variable costs per unit $(\$0.10 + 0.12 + 0.12) = \0.34

Contribution margin on special order $\$0.35 - \$0.34 = \$0.01$ per unit

$150,000 \text{ units} \times \$0.01 = \$1,500$ = Based solely on Financial analysis, accept the order

150) Variable costs per unit $(\$0.10 + 0.12 + 0.12) = \0.34

Contribution margin on special order $\$0.35 - \$0.34 = \$0.01$ per unit

Increased total contribution margin $(150,000 \text{ units} \times \$0.01)$ = \$1,500

Increased fixed cost \$ 3,000

Decreased Operating Income (\$ 1,500)

151) Variable costs per unit $((\$0.10 - 0.0125) + 0.12 + 0.12) = \0.3275

Contribution margin on special order $\$0.35 - \$0.3275 = \$0.0225$ per unit

Increased total contribution margin $(150,000 \text{ units} \times \$0.0225)$ = \$3,375

Increased fixed cost \$ 3,000

Increased Operating Income \$ 375

152) Will the details of the special order remain confidential, will other customers want a "deal", will the special order affect regular sales, etc.

153) TRUE

154) FALSE

155) FALSE

156) FALSE

157) FALSE

158) TRUE

159) TRUE

160) C

161) C

162) B

163) B

164) B

165) C

166) D

167) D

168) B

169) B

170) D

Answer Key

Testname: UNTITLED3

- 171) D
- 172) D
- 173) C
- 174) B
- 175) C
- 176) A
- 177) C
- 178) A
- 179) D
- 180) B
- 181) A
- 182) D
- 183) D
- 184) B
- 185) C
- 186) D
- 187) D
- 188) D
- 189) A
- 190) D
- 191) C
- 192) D
- 193) B
- 194) D
- 195) C
- 196) B
- 197) D
- 198) A
- 199) B

Answer Key

Testname: UNTITLED3

200) Contribution margin income statement for DVDs:

If DVDs dropped:	
Sales revenue from Blu-ray	\$350,000
Variable cost of goods sold from Blu-ray	\$(75,000)
Variable marketing and administrative expenses from Blu-ray	\$(25,000)
Contribution margin from Blu-ray only	\$250,000
Total fixed costs of goods sold	\$110,000
Decrease in fixed costs of goods sold if DVDs dropped	\$(8,000)
Fixed costs of goods sold if DVDs dropped	\$102,000
Total fixed marketing and administrative expenses	\$51,000
Decrease in fixed marketing and administrative if DVDs dropped	\$(2,000)
Fixed marketing and administrative expenses if DVDs dropped	\$49,000
Contribution margin from Blu-ray only	\$250,000
Fixed costs of goods sold if DVDs dropped	\$(102,000)
Fixed marketing and administrative expenses if DVDs dropped	\$(49,000)
Operating income (loss)	\$99,000
Operating income (loss) from Blu-ray only	\$99,000
Operating income (loss) with both products	\$124,000
Decrease in operating income if DVDs dropped	\$25,000

The company should keep producing and selling DVDs since operating income will decrease by \$25,000 if the product dropped.

Answer Key

Testname: UNTITLED3

201) Contribution margin income statement for DVDs:

If Video Recorders discontinued:	
Sales revenue from Cameras	\$300,000
Variable cost of goods sold from Cameras	\$ (75,000)
Variable marketing and administrative expenses from Cameras	\$ (25,000)
Contribution margin from Cameras only	\$200,000
Total fixed costs of goods sold	\$110,000
Decrease in fixed costs of goods sold if Video Recorders discontinued	\$ (10,000)
Fixed costs of goods sold if Video Recorders discontinued	\$100,000
Total fixed marketing and administrative expenses	\$51,000
Decrease in fixed marketing and administrative if Video Recorders discontinued	\$ (4,000)
Fixed marketing and administrative expenses if Video Recorders discontinued	\$47,000
Contribution margin from Cameras only	\$200,000
Fixed costs of goods sold if Video Recorders discontinued	\$(100,000)
Fixed marketing and administrative expenses if Video Recorders discontinued	\$ (47,000)
Operating income (loss)	\$53,000
Operating income (loss) from Cameras only	\$53,000
Operating income (loss) with both products	\$62,000
Decrease in operating income if Video Recorders discontinued	\$9,000

The company should keep producing and selling Video Recorders since operating income will decrease by \$9,000 if the product line is discontinued.

202)

If product dropped:	
Lost sales	\$(300,000)
Savings in variable costs	\$195,000
Savings in avoidable fixed costs	\$55,000
Operating loss	\$(50,000)

Exercise Equipment Enterprises should not discontinue Exercycle Model LM01, since dropping the product will result in a \$50,000 loss.

203)

If product discontinued:	
Lost sales	\$(480,000)
Savings in variable costs	\$360,000
Savings in avoidable fixed costs	\$20,000
Operating loss	\$ (100,000)

Cornell Enterprises should not discontinue L78, since discontinuing the product will result in a \$100,000 loss.

Answer Key

Testname: UNTITLED3

204) Step 1: Separate the fixed and variable costs:

Cost of goods sold:

$\$3,075,000 \times 40\% = \$1,230,000$ fixed manufacturing costs

$\$3,075,000 \times 60\% = \$1,845,000$ variable manufacturing costs

Operating expenses:

$\$675,000 \times 30\% = \$202,500$ of fixed operating costs

$\$675,000 \times 70\% = \$472,500$ of variable operating costs

Step 2: Determine effect on income if product line is dropped:

If product dropped:	
Lost sales	$\$(3,700,000)$
Savings in variable costs ($\$1,845,000 - \$472,500$)	$\$2,317,500$
Savings in avoidable fixed costs	$\$365,000$
Operating loss	$\$(1,017,500)$

If Cool Rays drops the Tinted Lens product line, it will lose \$1,017,500 of income. Therefore Cool Rays should only drop the product line if it can replace the product line with a different product that would provide more than \$1,017,500 of income.

205) Step 1: Separate the fixed and variable costs:

Cost of goods sold:

$\$1,540,000 \times 40\% = \$616,000$ fixed manufacturing costs

$\$1,540,000 \times 60\% = \$924,000$ variable manufacturing costs

Operating expenses:

$\$345,000 \times 30\% = \$103,500$ of fixed operating costs

$\$345,000 \times 70\% = \$241,500$ of variable operating costs

Step 2: Determine effect on income if product line is dropped:

If product dropped:	
Lost sales	$\$(1,850,000)$
Savings in variable costs ($\$924,000 - \$241,500$)	$1,165,500$
Savings in avoidable fixed costs	<u>$175,000$</u>
Operating loss	<u><u>$\\$(509,500)$</u></u>

If Cool Rays drops the Tinted Lens product line, it will lose \$509,500 of income. Therefore Cool Rays should only drop the product line if it can replace the product line with a different product that would provide more than \$509,500 of income.

Answer Key

Testname: UNTITLED3

206) Step 1: Separate the fixed and variable costs:

Cost of goods sold:

$\$2,275,000 \times 40\% = \$910,000$ fixed manufacturing costs

$\$2,275,000 \times 60\% = \$1,365,000$ variable manufacturing costs

Operating expenses:

$\$560,000 \times 30\% = \$168,000$ of fixed operating costs

$\$560,000 \times 70\% = \$392,000$ of variable operating costs

Step 2: Determine effect on income if product line is dropped:

If product dropped:	
Lost sales	<u>$-(2,750,000)$</u>
Savings in variable costs ($\$1,365,000 - \$392,000$)	<u>1,757,000</u>
Savings in avoidable fixed costs	<u>325,000</u>
Operating loss	<u><u>$-(668,000)$</u></u>

If Cool Rays drops the Tinted Lens product line, it will lose \$1,105,000 of income. Therefore Cool Rays should only drop the product line if it can replace the product line with a different product that would provide more than \$668,000 of income.

207) Contribution margin income statement for Sportsman model:

If Sportsman is dropped:	
Sales revenue from Professional	\$125,000
Variable cost of goods sold from Professional	$-(25,000)$
Variable marketing and administrative expenses from Professional	$-(8,000)$
Contribution margin from Professional only	\$92,000
Total fixed costs of goods sold	\$37,000
Decrease in fixed costs of goods sold if Sportsman dropped	$-(3,000)$
Fixed costs of goods sold if Sportsman dropped	\$34,000
Total fixed marketing and administrative expenses	\$17,000
Decrease in fixed marketing and administrative if Sportsman dropped	$-(750)$
Fixed marketing and administrative expenses if Sportsman dropped	\$16,250
Contribution margin from Professional only	\$92,000
Fixed costs of goods sold if Sportsman dropped	$-(34,000)$
Fixed marketing and administrative expenses Sportsman dropped	$-(16,250)$
Operating income (loss)	\$41,750
Operating income (loss) from Professional only	\$41,750
Operating income (loss) with both products	<u>\$50,000</u>
Decrease in operating income if Sportsman dropped	<u><u>8,250</u></u>

The company should keep producing and selling Sportsman since operating income will decrease by \$8,250 if the product is dropped.

Answer Key

Testname: UNTITLED3

208) Contribution margin income statement for Sportsman model:

If Sportsman is dropped:	
Sales revenue from Professional	\$225,000
Variable cost of goods sold from Professional	\$(45,000)
Variable marketing and administrative expenses from Professional	\$(15,000)
Contribution margin from Professional only	\$165,000
Total fixed costs of goods sold	\$70,000
Decrease in fixed costs of goods sold if Sportsman dropped	\$(5,000)
Fixed costs of goods sold if Sportsman dropped	\$65,000
Total fixed marketing and administrative expenses	\$30,000
Decrease in fixed marketing and administrative if Sportsman dropped	\$(2,000)
Fixed marketing and administrative expenses if Sportsman dropped	\$28,000
Contribution margin from Professional only	\$165,000
Fixed costs of goods sold if Sportsman dropped	\$(65,000)
Fixed marketing and administrative expenses Sportsman dropped	\$(28,000)
Operating income (loss)	\$72,000
Operating income (loss) from Professional only	\$72,000
Operating income (loss) with both products	<u>\$90,000</u>
Decrease in operating income if Sportsman dropped	<u>\$18,000</u>

The company should keep producing and selling Sportsman since operating income will decrease by \$18,000 if the pro line is dropped.

Answer Key

Testname: UNTITLED3

209) Contribution margin income statement for Sportsman model:

If Sportsman is dropped:	
Sales revenue from Professional	\$75,000
Variable cost of goods sold from Professional	\$(15,000)
Variable marketing and administrative expenses from Professional	\$(5,000)
Contribution margin from Professional only	\$55,000
Total fixed costs of goods sold	\$27,500
Decrease in fixed costs of goods sold if Sportsman dropped	\$(5,000)
Fixed costs of goods sold if Sportsman dropped	\$22,500
Total fixed marketing and administrative expenses	\$12,500
Decrease in fixed marketing and administrative if Sportsman dropped	\$(2,000)
Fixed marketing and administrative expenses if Sportsman dropped	\$10,500
Contribution margin from Professional only	\$55,000
Fixed costs of goods sold if Sportsman dropped	\$(22,500)
Fixed marketing and administrative expenses Sportsman dropped	\$(10,500)
Operating income (loss)	\$22,000
Operating income (loss) from Professional only	\$22,000
Operating income (loss) with both products	\$22,500
Decrease in operating income if Sportsman dropped	<u>\$(500)</u>

The company should keep producing and selling Sportsman since operating income will decrease by \$500 if the product is dropped.

- 210) Discontinuing the product results in a \$12,000 loss of the contribution margin and the organization can save only \$10,000 in avoidable fixed costs. Without the Size 3 printer ribbon, operating income is \$2,000 less; and the operating impact on the space rented is \$11,000 - \$2,000 = \$9,000 increase in operating income to drop the product and rent out the space.
- 211) TRUE
- 212) TRUE
- 213) TRUE
- 214) TRUE
- 215) FALSE
- 216) FALSE
- 217) FALSE
- 218) TRUE
- 219) C
- 220) A
- 221) D
- 222) A
- 223) B
- 224) A

Answer Key

Testname: UNTITLED3

225) D

226) A

227) D

228) D

229) D

230) A

231) A

232) D

233) C

234) B

235) B

236) A

237) A

238) D

239) D

240) Part 1.

	Mantle Clock	Cuckoo Clock
Sales price	\$90.00	\$108.00
Variable costs	\$(60.00)	\$(75.00)
Contribution margin per unit	\$30.00	\$33.00

Part 2.

	Mantle Clock	Cuckoo Clock
Sales price	\$90.00	\$108.00
Variable costs	\$(60.00)	\$(75.00)
Contribution margin per unit	\$30.00	\$33.00
Divide by	Divide by	Divide by
Hours taken for each	1	2
Contribution margin per hour	\$30.00	\$16.50

Mantle $\$30/1 = \underline{\$30}$ CM per machine hour

Cuckoo $\$33/2 = \underline{\$16.50}$ CM per machine hour

Part 3.

	Mantle Clock	Cuckoo Clock
Sales price	\$90.00	\$108.00
Variable costs	\$(60.00)	\$(75.00)
Contribution margin per unit	\$30.00	\$33.00
Divide by	Divide by	Divide by
Hours taken for each	1	2
Contribution margin per hour	\$30.00	\$16.50
Most profitable product	Mantle Clock	\$30.00
Maximum units of product	25,000	
Times hours used for that product	1	

Answer Key

Testname: UNTITLED3

Times hours used for that product	1	
Hours used by most profitable product	25,000	
Total hours available	40,000	
Hours used by most profitable product	25,000	
Hours remaining for least profitable product	15,000	
Divide by hours required by least profitable product	2	
Number of units produced of least profitable product (Cuckoo Clock)	7,500	

To maximize operating income, Dulko should produce 25,000 units of the Mantle Clock and 7,500 units of the Cuckoo

Part 4.

Refer to Part 2 answer.

Summary:		Units		Total contribution margin
Units of most profitable product	Mantle Clock	25,000	30	\$750,000
Units of least profitable product	Cuckoo Clock	7,500	33	\$247,500
				\$997,500
Total contribution margin	\$997,500			
Total fixed costs	\$600,000			
Maximum operating income	\$397,500			

Answer Key

Testname: UNTITLED3

241) Part 1:

	Spinners	Sparklers
Selling price each	\$4.50	\$6.50
Variable costs	\$(3.50)	\$(3.00)
Contribution margin per unit	\$1.00	\$3.50

Part 2:

	Spinners	Sparklers
Selling price each	\$4.50	\$6.50
Variable costs	\$(3.50)	\$(3.00)
Contribution margin per unit	\$1.00	\$3.50
Divide by	Divide by	Divide by
Hours taken for each	2	5
Contribution margin per hour	\$0.50	\$0.70

Part 3:

	Spinners	Sparklers
Production capacity (hours)	3,600	3,600
Divide by	Divide by	Divide by
Hours taken for each	2	5
Maximum to produce	1,800	720

Part 4:

	Spinners	Sparklers
Production capacity (hours)	3,600	3,600
Divide by	Divide by	Divide by
Hours taken for each	2	5
Maximum to produce	1,800	720
Contribution margin per unit	\$1.00	\$3.50
Maximum to produce	1,800	720
	\$1,800	\$2,520
Total fixed costs	\$(1,000)	\$(1,000)
Income	\$800	\$1,520

242) Requirement 1:

The constraining factor is machine hours.

Requirement 2:

	Deluxe	Standard
Contribution margin per unit	\$120	\$52
Units per machine hour	<u>25</u>	<u>55</u>
Contribution margin per machine hour	\$3,000	\$2,680

Bandin should emphasis Deluxe.

Answer Key

Testname: UNTITLED3

243) Requirement 1

The constraining factor is refrigerated display space. Heidi's Cool Treats should stock the product with the maximum contribution margin per tub.

Heidi's Cool Treats			
Product Mix Analysis			
	Ice cream	Frozen yogurt	Gelato
Sale price per tub	\$60.00	\$80.00	\$120.00
Variable cost per tub	<u>42.00</u>	<u>50.00</u>	<u>54.00</u>
Contribution margin per tub	\$ 18.00	\$ 30.00	\$ 66.00

Gelato has the highest contribution margin per tub. To maximize profits, Heidi should devote all the refrigerated display space to Gelato.

Contribution margin per tub of Gelato	\$66.00
Tubs available	<u>32</u>
Contribution margin	<u><u>\$2,122</u></u>

Requirement 2

If Heidi's Cool Treats cannot devote more than 20 linear metres to any individual product, then it should stock the refrigerator as follows:

- 20 tubs of the product with the HIGHEST contribution per tub—Gelato
- 4 tubs of the product with the LOWEST contribution margin per tub—Ice cream
- The remaining 8 tubs (32 – 24) using the product with the second highest contribution per tub—Frozen yogurt.

The following quantities of each product will be available for sale each day:

- Gelato: 20 tubs
- Ice cream: 4 tubs.
- Frozen yogurt: 8 tubs.

Requirement 3

	Ice cream	Frozen Yogurt	Gelato
Contribution Margin per tub	\$18.00	\$30.00	\$66.00
× # of tubs	× <u>4</u>	× <u>8</u>	× <u>20</u>
Contribution margin	<u><u>\$72.00</u></u>	<u><u>\$240.00</u></u>	<u><u>\$1,320.00</u></u>

Total Contribution Margin \$1,632

Answer Key

Testname: UNTITLED3

244) Requirement 1

The constraining factor is refrigerated display space. Heidi's Cool Treats should stock the product with the maximum contribution margin per tub.

Heidi's Cool Treats			
Product Mix Analysis			
	Ice cream	Frozen yogurt	Gelato
Sale price per tub	\$65.00	\$85.00	\$125.00
Variable cost per tub	<u>52.00</u>	<u>60.00</u>	<u>74.00</u>
Contribution margin per tub	\$ 13.00	\$ 25.00	\$ 51.00

Gelato has the highest contribution margin per tub. To maximize profits, Heidi should devote all the refrigerated display space to Gelato.

Contribution margin per tub of Gelato	\$51.00
Tubs available	<u>45</u>
Contribution margin	<u>\$2,295</u>

Requirement 2

If Heidi's Cool Treats cannot devote more than 20 linear metres to any individual product, then it should stock the refrigerator as follows:

- 20 tubs of the product with the HIGHEST contribution per tub—Gelato
- 10 tubs of the product with the LOWEST contribution margin per tub—Ice cream
- The remaining 15 tubs (45 – 20) using the product with the second highest contribution per tub—Frozen yogurt.

The following quantities of each product will be available for sale each day:

- Gelato: 20 tubs
- Ice cream: 10 tubs.
- Frozen yogurt: 15 tubs.

Requirement 3

	Ice cream	Frozen Yogurt	Gelato
Contribution Margin per tub	\$13.00	\$25.00	\$51.00
× # of tubs	× <u>10</u>	× <u>15</u>	× <u>20</u>
Contribution margin	<u>\$130.00</u>	<u>\$375.00</u>	<u>\$1,020.00</u>

Total Contribution Margin \$1,525

Answer Key

Testname: UNTITLED3

245) Requirement 1

Max's Beach Hut			
Product Mix Analysis			
	Coca-Cola 341-ml Cans	A&W Rootbeer 551-ml Bottles	Mountain Dew 551-ml Bottles
Sale price per unit	\$1.50	\$1.75	\$2.25
Variable cost per unit	<u>0.35</u>	<u>0.50</u>	<u>0.85</u>
Contribution margin per unit	1.15	1.25	1.40
Units per linear metre of shelf space	<u>× 18</u>	<u>× 12</u>	<u>× 12</u>
Contribution margin per linear metre of shelf space	<u>\$20.70</u>	<u>\$15.00</u>	<u>\$16.80</u>

The constraining factor is linear metres of shelf space. Max's Beach Hut should stock the drink with the maximum contribution margin per linear metre of shelf space.

Coca-Cola in 341 -ml cans has the highest contribution margin per linear metre of shelf space. To maximize profits, Max's should devote all its shelf space to Coca-Cola in 341-ml cans.

Contribution margin per linear metre of shelf space (Coca-Cola)	\$20.70
Linear metres of shelf space available	<u>42</u>
Contribution margin	<u>\$869.40</u>

Requirement 2

If Max's Beach Hut cannot devote more than 20 linear metres to any individual product, then it should stock its shelves as follows:

- 20 linear metres of the product with the HIGHEST contribution per linear metre—Coca-Cola in 341-ml cans.
- 4 linear metres to the product with the LOWEST contribution margin per linear metre—A&W Root Beer in 551-ml bottles.
- The remaining 18 linear metres (42 - 24) using the product with the second highest contribution per linear metre—Mountain Dew in 551-mL bottles.

The following quantities of each product will be available for sale each day:

- Coca-Cola in 341-ml cans: 20 linear metres × 18 cans per linear metre = 360 cans.
- A&W Root Beer in 551-ml bottles: 4 linear metres × 12 bottles per linear metre = 48 bottles.
- Mountain Dew in 551-ml bottles: 18 linear metres × 12 bottles per linear metre = 216 bottles.

Requirement 3

	Coca-Cola	A&W Root Beer	Mountain Dew
Contribution Margin per linear metre	\$20.70	\$15.00	\$16.80
× linear metres	<u>× 20</u>	<u>× 4</u>	<u>× 18</u>
Contribution margin	<u>\$414.00</u>	<u>\$60.00</u>	<u>\$302.40</u>

Total Contribution Margin \$776.40

Answer Key

Testname: UNTITLED3

246) Requirement 1

The constraining factor is linear metres of shelf space. Max's Beach Hut should stock the drink with the maximum contribution margin per linear metre of shelf space.

Max's Beach Hut			
Product Mix Analysis			
	Coca-Cola 341-ml Cans	A&W Rootbeer 551-ml Bottles	Mountain Dew 551-ml Bottles
Sale price per unit	\$1.50	\$1.75	\$2.20
Variable cost per unit	<u>0.25</u>	<u>0.40</u>	<u>0.75</u>
Contribution margin per unit	1.25	1.35	1.45
Units per linear metre of shelf space	<u>× 18</u>	<u>× 12</u>	<u>× 12</u>
Contribution margin per linear metre of shelf space	<u>\$22.50</u>	<u>\$16.20</u>	<u>\$17.40</u>

Coca-Cola in 341 -ml cans has the highest contribution margin per linear metre of shelf space. To maximize profits, Max's should devote all its shelf space to Coca-Cola in 341-ml cans.

Contribution margin per linear metre of shelf space (Coca-Cola)	\$22.50
Linear metres of shelf space available	<u>33</u>
Contribution margin	<u>\$742.50</u>

Requirement 2

If Max's Beach Hut cannot devote more than 20 linear metres to any individual product, then it should stock its shelves as follows:

- 20 linear metres of the product with the HIGHEST contribution per linear metre—Coca-Cola in 341-ml cans.
- 4 linear metres to the product with the LOWEST contribution margin per linear metre—A&W Root Beer in 551-ml bottles.
- The remaining 12 linear metres (36 - 24) using the product with the second highest contribution per linear metre—Mountain Dew in 551-ml bottles.

The following quantities of each product will be available for sale each day:

- Coca-Cola in 341-ml cans: 20 linear metres × 18 cans per linear metre = 360 cans.
- A&W Root Beer in 551-ml bottles: 4 linear metres × 12 bottles per linear metre = 48 bottles.
- Mountain Dew in 551-ml bottles: 12 linear metres × 12 bottles per linear metre = 144 bottles.

Requirement 3

	Coca-Cola	A&W Root Beer	Mountain Dew
Contribution Margin per linear metre	\$22.50	\$16.20	\$17.40
× linear metres	<u>× 20</u>	<u>× 4</u>	<u>× 12</u>
Contribution margin	<u>\$450.00</u>	<u>\$64.80</u>	<u>\$208.80</u>

Total Contribution Margin \$723.60

Answer Key

Testname: UNTITLED3

247)

A.

	Small Vase	Large Vase
Sales price	\$ 60.00	\$ 100.00
Variable costs	\$ (35.00)	\$ (60.00)
Contribution margin per unit	\$ 25.00	\$ 40.00

B.

	Small Vase	Large Vase
Sales price	\$ 60.00	\$ 100.00
Variable costs	\$ (35.00)	\$ (60.00)
Contribution margin per unit	\$ 25.00	\$ 40.00
Divide by	Divide by	Divide by
Hours taken for each	1	2
Contribution margin per hour	\$ 25.00	\$ 20.00

C.

	Small Vase	Large Vase
Sales price	\$ 60.00	\$ 100.00
Variable costs	\$ (35.00)	\$ (60.00)
Contribution margin per unit	\$ 25.00	\$ 40.00
Divide by	Divide by	Divide by
Hours taken for each	1	2
Contribution margin per hour	\$ 25.00	\$ 20.00
Most profitable product	Large Vase	\$ 30.00
Maximum units of product	25,000	
Times hours used for that product	1	
Hours used by most profitable product	25,000	
Total hours available	50,000	
Hours used by most profitable product	25,000	
Hours remaining for least profitable product	25,000	
Divide by hours required by least profitable product	2	
Number of units produced of least profitable product (Large Vase)	12,500	

Answer
Testna

Total hours available	50,000	
Hours used by most profitable product	25,000	
Hours remaining for least profitable product	25,000	
Divide by hours required by least profitable product	2	
Number of units produced of least profitable product (Large Vase)	12,500	

D.

	Small Vase	Large Vase		
Sales price	\$ 60.00	\$ 100.00		
Variable costs	\$ (35.00)	\$ (60.00)		
Contribution margin per unit	\$ 25.00	\$ 40.00		
Divide by	Divide by	Divide by		
Hours taken for each	1	2		
Contribution margin per hour	\$ 25.00	\$ 20.00		
Most profitable product	Small vase	\$ 30.00		
Maximum units of product	25,000			
Times hours used for that product	1			
Hours used by most profitable product	25,000			
Total hours available	50,000			
Hours used by most profitable product	25,000			
Hours remaining for least profitable product	25,000			
Divide by hours required by least profitable product	2			
Number of units produced of least profitable product	12,500			
Summary:		Units		Total contribution margin
Units of most profitable product	Small Vase	25,000	15	\$ 625,000
Units of least profitable product	Large Vase	12,500	40	\$ 500,000
				\$ 1,125,000
Total contribution margin	\$ 1,125,000			
Total fixed costs	\$ 600,000			
Maximum operating income	\$ 525,500			

248) Constraints are the limited resources that restrict production or sale of a product, and they vary from company to company. For a manufacturer, production may be constrained by labour hours, machine hours, or available materials. For a merchandiser, the primary constraint is cubic feet of display space. When resource constraints exist, the company should focus on selling the products with the highest contribution margin per unit of the constraint.

249) Regular.

250) Regular takes 2 machine hours, Deluxe takes 4 machine hours. Lifestyles can produce 500 Regular or 250 Deluxe.
 The contribution margin for Regular is \$ 750 - (180 + 150 + 75 + 65) = \$280/unit
 The contribution margin for Deluxe is \$1,200 - (280 + 190 + 200 + 115) = \$450/unit
 Produce 500 Regular × \$280 = \$140,000
 Produce 250 Deluxe × \$450 = \$112,500

Therefore produce 500 regular.

251) Regular takes 2 machine hours, Deluxe takes 4 machine hours. Lifestyles can produce 500 Regular or 250 Deluxe.
 The contribution margin for Regular is \$ 750 - (180 + 150 + 75 + 65) = \$280/unit
 The contribution margin for Deluxe is \$1,200 - (280 + 190 + 200 + 115) = \$450/unit

Produce 300 Regular × \$280 = \$84,000 this uses 600 machine hours
 Produce 100 Deluxe × \$450 = \$45,000 this uses 400 machine hours
 Maximum contribution \$ 129,000

252) FALSE

253) TRUE

254) TRUE

255) FALSE

Answer Key

Testname: UNTITLED3

- 256) TRUE
- 257) FALSE
- 258) FALSE
- 259) TRUE
- 260) TRUE
- 261) A
- 262) B
- 263) A
- 264) C
- 265) C
- 266) D
- 267) B
- 268) A
- 269) D
- 270) C
- 271) D
- 272) C
- 273) D
- 274) A
- 275) A
- 276) A
- 277) A
- 278) D
- 279) A

Answer Key

Testname: UNTITLED3

- 280) 1. \$2,525,000
 2. \$2,582,000 $[(80,000 \times (\$27.00 + \$0.40)) + (60\% \times \$650,000)]$
 3. \$2,517,000 $(\$2,582,000 - \$65,000)$

Victory Electronics should buy the part and use facilities to make another product since their total costs will be \$2,517,000 under this option versus total costs of \$2,525,000 to make the part.

Transport cost per unit (if bought)	\$0.40
Number of parts needed	80,000
Total variable transportation	\$32,000
Fixed manufacturing overhead	\$650,000
Avoidable percentage of fixed costs	40%
Avoidable fixed manufacturing overhead	\$260,000
Fixed manufacturing overhead	\$650,000
Avoidable fixed manufacturing overhead	\$(260,000)
Unavoidable fixed manufacturing overhead	\$390,000
Price per unit if bought	\$27.00
Number of parts needed	80,000
Total purchase price	\$2,160,000
Total variable transportation	\$32,000
Unavoidable fixed manufacturing overhead	\$390,000
Total purchase price	\$2,160,000
Total cost to buy parts and leave facilities idle	\$2,582,000
Total variable transportation	\$32,000
Unavoidable fixed manufacturing overhead	\$390,000
Total purchase price	\$2,160,000
Contribution margin provided by alternate use of space	\$(65,000)
Total cost to buy parts and use facilities to make another product	\$2,517,000
Total manufacturing costs to make parts	\$2,525,000

Answer Key

Testname: UNTITLED3

281)

Transport cost per unit (if bought)	\$ 0.60
Number of parts needed	<u>\$ 60,000</u>
Total variable transportation	\$ 36,000
Fixed manufacturing overhead	\$ 750,000
Avoidable percentage of fixed costs	<u>\$ 50%</u>
Avoidable fixed manufacturing overhead	\$ 375,000
Fixed manufacturing overhead	\$ 750,000
Avoidable fixed manufacturing overhead	<u>\$ (375,000)</u>
Unavoidable fixed manufacturing overhead	\$ 375,000
Total variable transportation	\$ 36,000
Unavoidable fixed manufacturing overhead	\$ 375,000
Total purchase price	<u>\$ 1,440,000</u>
Total cost to buy parts and leave facilities idle	<u><u>\$ 1,851,000</u></u>
Total variable transportation	\$ 36,000
Unavoidable fixed manufacturing overhead	\$ 375,000
Total purchase price	\$ 1,440,000
Contribution margin provided by alternate use of space	<u>\$ (70,000)</u>
Total cost to buy parts and use facilities to make another product	<u><u>\$ 1,781,000</u></u>
Total manufacturing costs to make parts	<u><u>\$ 2,625,000</u></u>

#3: Victoria Technologies should buy the part and use facilities to make another product since their total costs will be \$1,781,000 under this option versus total costs of \$2,625,000 to make the part.

282)

Standard tomato planter:	
Standard tomato planter selling price	\$19.00
Production volume	100,000
Revenue	\$1,900,000
Standard tomato planter variable costs	\$12.00
Production volume	100,000
Variable costs	\$1,200,000
Revenue	\$1,900,000
Variable costs	\$(1,200,000)
Fixed manufacturing overhead	\$(67,000)
Operating income for Standard tomato planter	\$633,000
Deluxe tomato planter:	

Answer Key

Testname: UNTITLED3

Deluxe tomato planter:	
Deluxe tomato planter selling price	\$24.00
Production volume	100,000
Revenue	\$2,400,000
Standard tomato planter variable costs	\$12.00
Deluxe tomato planter additional costs	\$4.00
Total costs	\$16.00
Production volume	100,000
Variable costs	\$1,600,000
Fixed manufacturing overhead	\$67,000
Additional fixed manufacturing overhead	\$23,000
Fixed costs	\$90,000
Revenue	\$2,400,000
Variable costs	\$(1,600,000)
Fixed costs	\$(90,000)
Operating income for Deluxe tomato planter	\$710,000
Operating income for Deluxe tomato planter	\$710,000
Operating income for Standard tomato planter	\$(633,000)
Increase in income	\$77,000

Change the standard tomato planter into the deluxe tomato planter for \$77,000 increase in operating income.

283)

Krass Snowboard Mfg. Inc.			
Outsourcing Analysis			
	Make Bindings	Buy Bindings	Cost to Make Minus Cost to Buy
Total cost:			
Direct materials	\$32,000	–	\$32,000
Direct labour	6,200	–	6,200
Variable overhead	4,500	–	4,500
Fixed overhead	13,300	\$ 7,800 ^a	5,500
Purchase price from outsider			
(3,500 × \$15)	–	52,500	(52,500)
Transportation (3,500 × \$1.50)	–	5,250	(5,250)
Logo (3,500 × \$0.80)	–	2,800	(2,800)
Total cost of 1,800 bindings	<u>\$56,000</u>	<u>\$68,350</u>	<u>(\$12,350)</u>

^a \$13,300 – \$5,500 = \$7,800

Decision: Make the bindings

Answer Key

Testname: UNTITLED3

284)

Krass Snowboard Mfg. Inc.			
Best Use of Facilities Analysis			
	Make	Buy	
		Leave Facilities Idle	Make Another Product
Direct materials	\$32,000	–	–
Direct labour	6,200	–	–
Variable overhead	4,500	–	–
Fixed overhead	13,300	\$ 7,800 ^a	\$ 13,300
Purchase price from outsider (3,500 × \$15)		52,500	52,500
Transportation (3,500 × \$1.500)	–	5,250	5,250
Logo (3,500 × \$0.80)	–	2,800	2,800
Expected profit from other product	–	–	(6,500)
Expected net cost of obtaining			
1,800 bindings	<u>\$56,000</u>	<u>\$68,350</u>	<u>\$67,350</u>

^a \$13,300 – \$5,500 = \$7,800

Decision: Continue to make the bindings.

285)

Hidex Electronics.			
Outsourcing Analysis			
	Make MP3 Players	Buy MP3 Players	Cost to Make Minus Cost to Buy
Total cost:			
Direct materials	\$900,000	–	\$900,000
Direct labour	240,000	–	240,000
Variable overhead	160,000	–	160,000
Fixed overhead	300,000	\$ 250,000 ^a	50,000
Purchase price from outsider (100,000 × \$13)	=	1,300,000	(1,300,000)
Transportation (100,000 × \$0.50)	–	50,000	(50,000)
Logo (1,000 × \$0.10)	=	10,000	(10,000)
Total cost of 1,800 bindings	<u>\$1,600,000</u>	<u>\$1,610,000</u>	<u>(\$10,000)</u>

^a \$300,000 – 50,000 = \$250,000

Decision: Make the MP3 Players

Answer Key

Testname: UNTITLED3

286)

Hidref Electronics.			
Outsourcing Analysis			
	Make MP3 Players	Buy MP3 Players	Cost to Make Minus Cost to Buy
Total cost:			
Direct materials	\$540,000	–	\$540,000
Direct labour	140,000	–	140,000
Variable overhead	100,000	–	100,000
Fixed overhead	200,000	\$ 170,000 ^a	30,000
Purchase price from outsider (100,000 × \$7)	=	700,000	(700,000)
Transportation (100,000 × \$0.50)	–	50,000	(50,000)
Logo (1,000 × \$0.10)	=	10,000	(10,000)
Total cost of 1,800 bindings	<u>\$980,000</u>	<u>\$930,000</u>	\$50,000

^a \$200,000 - 30,000 = \$170,000

Decision: Buy the MP3 Players

287) A) Relevant costs to manufacture the part include direct materials, direct labour, variable manufacturing overhead, and fixed manufacturing overhead that can be eliminated, or:

Direct materials	\$2.00
Direct labour	\$1.50
Variable manufacturing overhead	\$1.75
Traceable fixed cost per unit	\$1.00
Relevant cost to produce each unit	\$6.25

B)

Direct materials	\$2.00
Direct labour	\$1.50
Variable manufacturing overhead	\$1.75
Traceable fixed cost per unit	\$1.00
Relevant cost to produce each unit	\$6.25
Offer price by supplier	\$(5.75)
Savings per unit if bought	\$0.50
Production level	5,000
Total increase in operating income if bought	\$2,500

Yes, Sarah's should buy the parts.

288) TRUE

289) TRUE

290) B

291) D

292) B

Answer Key

Testname: UNTITLED3

293) D

294) A

295) C

296) D

297) D

298) A

299) C

300) D

301) C

302) D

303) B

304)

Steins` Dairy		
Sell As Is or Process Further Analysis		
	Sell As Is	Process Further
Expected revenue from selling 1,000hL		
of cream at \$155.00 per hectolitre	\$155,000	
Expected revenue from selling 800 hectolitres		
of whipping cream at \$385.00 per hectolitre		\$308,000
Additional costs of processing further		(\$135,000)
Total net revenue	<u>\$155,000</u>	<u>\$173,000</u>
Difference in net revenue		<u>\$ 18,000</u>

Decision: Process cream into whipping cream.

305)

Steins` Dairy		
Sell As Is or Process Further Analysis		
	Sell As Is	Process Further
Expected revenue from selling 3,000hL of		
liquid skim milk at \$75.00 per hectolitre	\$225,000	
Expected revenue from selling 2,000 hectolitres		
Of condensed milk at \$310.00 per hectolitre		\$620,000
Additional costs of processing further		(\$270,000)
Total net revenue	<u>\$225,000</u>	<u>\$350,000</u>
Difference in net revenue		<u>\$ 125,000</u>

Decision: Process liquid skim milk into condensed milk.

Answer Key

Testname: UNTITLED3

306)

Steins` Dairy		
Sell As Is or Process Further Analysis		
	Sell As Is	Process Further
Expected revenue from selling 1,000hL of cream at \$165.00 per hectolitre	\$165,000	
Expected revenue from selling 800 hectolitres of whipping cream at \$360.00 per hectolitre		\$288,000
Additional costs of processing further		(\$145,000)
Total net revenue	<u>\$165,000</u>	<u>\$143,000</u>
Difference in net revenue	<u>\$ 22,000</u>	

Decision: Sell the cream at split off (as is).

307)

Steins` Dairy		
Sell As Is or Process Further Analysis		
	Sell As Is	Process Further
Expected revenue from selling 3,000hL of liquid skim milk at \$80.00 per hectolitre	\$240,000	
Expected revenue from selling 2,000 hectolitres Of condensed milk at \$275.00 per hectolitre		\$550,000
Additional costs of processing further		(\$315,000)
Total net revenue	<u>\$240,000</u>	<u>\$235,000</u>
Difference in net revenue	<u>\$ 5,000</u>	

Decision: Sell liquid skim milk as is.

308)

Standard mailbox:	
Standard mailbox selling price	\$25.00
Production volume	100,000
Revenue	\$2,500,000
Standard mailbox variable costs	\$18.00
Production volume	100,000
Variable costs	\$1,800,000
Revenue	\$2,500,000
Variable costs	\$(1,800,000)
Fixed manufacturing overhead	\$ (67,000)
Operating income for Standard mailbox	\$633,000
Deluxe mailbox:	
Deluxe mailbox selling price	\$35.00
Production volume	100,000

Answer Key

Testname: UNTITLED3

Production volume	100,000
Revenue	\$3,500,000
Standard mailbox variable costs	\$18.00
Deluxe mailbox additional costs	\$4.00
Total costs	\$22.00
Production volume	100,000
Variable costs	\$2,200,000
Fixed manufacturing overhead	\$67,000
Additional fixed manufacturing overhead	\$23,000
Fixed costs	\$90,000
Revenue	\$3,500,000
Variable costs	\$(2,200,000)
Fixed costs	\$ (90,000)
Operating income for Deluxe mailbox	\$1,210,000
Operating income for Deluxe mailbox	\$1,210,000
Operating income for Standard mailbox	\$ (633,000)
Increase in income	\$577,000

Change the standard mailbox into the deluxe mailbox at a \$577,000 increase in operating income.

309) B

310) A

311) G

312) E

313) D

314) FALSE

315) TRUE

316) B

317) A

318) B

319) E

320) B

321) C

322) Minimum selling price = market price of chips = \$2.50

Maximum purchasing price = current purchasing price = \$2.25

As there is no excess capacity; and, the minimum selling price is greater than the maximum purchasing price no intern transfer will take place.

Answer Key

Testname: UNTITLED3

323) With sufficient excess capacity:

Minimum transfer price

= variable manufacturing costs + (.25 × Variable selling and administrative expenses)

= \$1.20 + (.25 × \$0.40)

= \$1.30

Maximum transfer price = market or external purchase price = \$2.25

$\$1.30 \leq \text{transfer price} \leq \2.25

A transfer should take place for the 30,000 units at a price between \$1.30 and \$2.25.

324) Minimum selling price = market price of chips = \$5.50

Maximum purchasing price = current purchasing price = \$3.50

As there is no excess capacity; and, the minimum selling price is greater than the maximum purchasing price no intern transfer will take place.

325) With sufficient excess capacity:

Minimum transfer price

= variable manufacturing costs + (.25 × Variable selling and administrative expenses)

= \$1.80 + (.25 × \$0.60)

= \$1.95

Maximum transfer price = market or external purchase price = \$3.50

$\$1.95 \leq \text{transfer price} \leq \3.50

A transfer should take place for the 30,000 units at a price between \$1.95 and \$3.50

326) Minimum selling price = market price of filters = \$22.00

Maximum purchasing price = current purchasing price = \$15.00

As there is no excess capacity; and, the minimum selling price is greater than the maximum purchasing price no intern transfer will take place.

327) With sufficient excess capacity:

Minimum transfer price

= variable manufacturing costs

= \$12.00

Maximum transfer price = market or external purchase price = \$15.00

$\$12.00 \leq \text{transfer price} \leq \15.00

A transfer should take place for the 250,000 units at a price between \$12.00 and \$15.00.

Answer Key

Testname: UNTITLED3

328) Minimum selling price = market price of filters = \$18.00

Maximum purchasing price = current purchasing price = \$15.00

As there is no excess capacity; and, the minimum selling price is greater than the maximum purchasing price no intern transfer will take place.

329) With sufficient excess capacity:

Minimum transfer price

= variable manufacturing costs

= \$9.60

Maximum transfer price = market or external purchase price = \$15.00

$\$9.60 \leq \text{transfer price} \leq \15.00

A transfer should take place for the 200,000 units at a price between \$9.60 and \$15.00.

330) a.

	<u>Machining</u>	<u>Assembly</u>
Revenue	<u>480,000*</u>	<u>\$2,000,000</u>
Cost of services: Incurred	\$480,000	\$400,000
Transferred in	<u>0</u>	<u>480,000</u>
Total	<u>\$480,000</u>	<u>\$880,000</u>
Operating income	<u>\$0</u>	<u>\$1,120,000</u>

*80,000 square metres \times \$6 = \$480,000

b.

	<u>Machining</u>	<u>Assembly</u>
Revenue	<u>\$400,000*</u>	<u>\$2,000,000</u>
Cost of services: Incurred	\$480,000	\$400,000
Transferred in	<u>0</u>	<u>400,000</u>
Total	<u>\$480,000</u>	<u>\$800,000</u>
Operating income	<u>\$(80,000)</u>	<u>\$1,200,000</u>

* 80,000 square metres \times \$5 = \$400,000

c. The manager of Machining cares about the transfer price if the division is a profit centre but not if it is a cost centre. the circumstances the division probably should be a cost centre and not worry about the profit it pretends to make by to another division. It does not control revenues.