

請列出計算過程

1. Reuter Avionics currently sells radios for \$1,800. It has costs of \$1,400. A competitor is bringing a new radio to market that will sell for \$1,600. Management believes it must lower the price to \$1,600 to compete in the market for radios. Marketing believes that the new price will cause sales to increase by 10%, even with a new competitor in the market. Reuter's sales are currently 1,000 radios per year.

**Required: (15%)**

- What is the target cost if target operating income is 25% of sales? (5%)
- What is the change in operating income if marketing is correct and only the sales price is changed? (5%)
- What is the target cost if the company wants to maintain its same income level, and marketing is correct? (5%)

2. Norton's Mufflers manufactures three different product lines, Model X, Model Y, and Model Z. Considerable market demand exists for all models. The following per unit data apply:

	<u>Model X</u>	<u>Model Y</u>	<u>Model Z</u>
Selling price	\$80	\$90	\$100
Direct materials	30	30	30
Direct labor (\$10 per hour)	15	15	20
Variable support costs (\$5 per machine-hour)	5	10	10
Fixed support costs	20	20	20

**Required: (15%)**

- If there is excess capacity, which model is the most profitable to produce? Why? (5%)
- If there is a machine breakdown, which model is the most profitable to produce? Why? (5%)
- How can Norton encourage her sales people to promote the more profitable model? (5%)

3. Johnson Realty bought a 2,000-acre island for \$10,000,000 and divided it into 200 equal size lots.

As the lots are sold, they are cleared at an average cost of \$5,000.

Storm drains and driveways are installed at an average cost of \$8,000 per site.

Sales commissions are 10% of selling price.

Administrative costs are \$850,000 per year.

The average selling price was \$160,000 per lot during 20X5 when 50 lots were sold.

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During 20X6, the company bought another 2,000-acre island and developed it exactly the same way. Lot sales in 20X6 totaled 300 with an average selling price of \$160,000. All costs were the same as in 20X5.

**Required: (20%)**

Prepare income statements for both years using both absorption and variable costing methods.

4. Old Castle Vineyard produces premium wine. Its success in the industry is due to its quality, although all of its customers, wine shops and specialty grocery stores, are very cost conscious and negotiate for price cuts on all large orders. Noting that the wine industry is becoming increasingly competitive, Old Castle is looking for a way to meet the challenge. It is negotiating with Eastern Seasons, a regional specialty grocery store, to purchase a large order of wine. Old Castle is currently producing at under-capacity and would like to keep its production facilities gain better economies of scale by increasing production. Eastern Seasons has agreed to a large order but only at a price of \$35 per bottle. The special order can be purchased in one batch with available capacity. Old Castle prepared these data:

Next month's operating information (per unit, for 10,000 units, made in 10 batches of 1,000 each)

Sales price	\$45
Per unit costs	
Variable manufacturing costs	19
Batch-level costs	5
Variable marketing costs	8
Fixed manufacturing costs	5
Fixed marketing costs	2
Special order information (order is produced in one batch)	
Sales units	2,000
Sales price per unit	\$35

No variable marketing costs are associated with this order, but Old Castle has spent \$2,500 during the past two months trying to get Eastern Seasons to purchase the special order.

How much will the special order change Old Castle's total operating income? (12%)

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5. Pandra Manufacturing specifies the quality characteristic of one of its popular products to be  $0.500 \pm 0.020$ . An analysis of company records for the last two years suggests that the average cost for warranty repair or replacement is \$125 per unit. The customer service manager is of the opinion that the product is likely to fail during the warranty period when the quality characteristic exceeds on either side of the target of 0.500 by the tolerance of 0.020. In order to gain a better understanding of the impacts of quality variation to help you manage better, you, the product manager, would like to know the following values in a Taguchi loss function.

**Required: (16%)**

- (1) Cost coefficient. (4%)
- (2) Estimated losses when the actual quality characteristic is 0.505. (4%)
- (3) Estimated losses when the actual quality characteristic is 0.510. (4%)
- (4) The amount of change in the estimated losses when the deviation from the quality characteristic doubled. (4%)

6. T-shirts R Us Inc. operates two divisions that manufactures t-shirts for universities. Each division has its own manufacturing facility. The historical-cost accounting system reports the following data for 2007.

Atlantic Coast Division	
Income Statement (000s)	
Revenues	\$600
Operating Costs	<u>470</u>
Operating Income	\$130

Big 10 Division	
Income Statement	
(000s)	
Revenues	\$600
Operating Costs	<u>400</u>
Operating Income	\$200

T-shirts R Us Inc. estimates the useful life of each manufacturing facility to be 15 yrs. The company uses straight line depreciation, with a depreciation charge of \$70,000 per year for each division and no salvage value at the end of 15 years. The manufacturing facility is the only long-lived asset of either division. Current assets are \$300,000 in each division. At the end of 2007 the Atlantic Coast Division is 4 years old and the Big 10 Division is 6 years old.

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An index of construction costs, replacement cost, and liquidation values for manufacturing facilities for production of t-shirts for the 6 year period that T-shirts R Us Inc. has been operating is as follows:

Year	Cost Index	Replacemen	Liquidation Value	
		t	Big 10	Atlantic Coast
		Cost		
2002	80	\$1,000,000	\$800,000	\$800,000
2003	82	1,000,000	800,000	800,000
2004	84	1,100,000	700,000	700,000
2005	89	1,150,000	600,000	700,000
2006	94	1,200,000	600,000	800,000
2007	96	1,250,000	600,000	900,000
2008	100	1,300,000	500,000	1,000,000

**Required: (22%)**

- (1) Compute return on investment for each division using historical-cost. Interpret the results. (4%)
- (2) Compute return on investment for each division, incorporating current-cost estimates as follows, using: (10%)
  - (a) gross book values under historical costs.
  - (b) gross book value at historical cost restated to current cost using the index of construction costs.
  - (c) net book value of long-lived assets restated at current cost using the index of construction costs.
  - (d) current replacement cost
  - (e) current liquidation value.
- (3) Which of the measures calculated in (2) above would you choose for (a) performance evaluation of each division manager, (b) deciding which division is most profitable for the overall firm. What are the strategic advantages and disadvantages to the firm of each measure for both (a) and (b)? (8%)

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