



Subject: Year 13 Accounting Worksheet 16

Name: \_\_\_\_\_

Strand 6	Cost Accounting
Sub strand 6.3	Cost Volume Profit analysis
Content Learning Outcome 6.3.1	Examine the calculation of cost volume and profit for firms

Refer to pages for examples (216 to 2019 of Year 13 accounting textbook)

Formulae for calculations

1. Unit contribution margin = Selling price per unit - Variable costs per unit

2. Contribution margin (\$) = Sales - Variable cost

3. Contribution margin ratio =  $\frac{\text{Contribution Margin}}{\text{Sales \$}}$

4. Contribution margin percentage =  $\frac{\text{Contribution margin}}{\text{Sales \$}} \times 100$

5. Break even Units =  $\frac{\text{Fixed Cost}}{\text{Unit Selling price} - \text{Unit Variable Cost}}$

6. Break even Dollars =  $\frac{\text{Fixed Cost}}{\text{Unit Selling price} - \text{Unit Variable Cost}} \times \text{Unit selling price}$

7. Margin of safety in dollars = Actual sales (\$) - Breakeven Sales (\$)

8. Margin of safety in units = Actual sales units - Breakeven Sales in units

9. Targeted Output =  $\frac{\text{Fixed Cost} + \text{Desired Profits}}{\text{Unit Sale price} - \text{Unit Variable cost}}$

10. Targeted Sales (\$) =  $\frac{\text{Fixed Cost} + \text{Desired Profits}}{\text{Unit Sale price} - \text{Unit Variable cost}} \times \text{Unit selling Price}$

11. Degree of operating leverage =  $\frac{\text{Contribution margin}}{\text{Net income}} \times 100$

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### Question 1                      Cost Volume Profit Analysis

Smith is a farmer and owns a dalo farm. He provides you with the following information:

Contribution Margin Statement	\$
Sales (25000 tons)	\$300000
Variable cost	100000
Contribution Margin	200000
Fixed cost	50000
Profit	150000

The sale price per unit is \$12.00 and the variable cost is \$4

Use the information above to calculate the following

- a. Contribution margin per ton
- b. Contribution margin ratio
- c. Break even income in dollars
- d. Breakeven in units
- e. Margin of safety in dollars
- f. Tons of dalo that need to be produced to make \$300 000 profit.
- g. Average cost per tons.