

Marginal Costing, Break-even Analysis and Margin of Safety

The following questions are applicable with regard to the exam question types.

1. A company produces and sells a single product whose variable cost is £32.

The current selling price is £47 per unit

Fixed costs have been absorbed over the level of activity of 120,000 units and have been calculated at £7 per unit

How much profit is made under marginal costing if the company sells 220,000 units?

A. 2,200,000

B. 2,460,000

C. 2,000,000

D. 2,100,000

variable Cost
Selling Price $\rightarrow 47 - 32 = 15$ contribution
unit Sales $\rightarrow 220,000 \times 15 = 3,300,000$
Fixed Cost $(120,000 \times 7) (840,000)$
Profit $\underline{2,460,000}$

2. A company produces and sells a single product whose variable cost is £26.

The current selling price is £40 per unit

Fixed costs have been absorbed over the level of activity of 140,000 units and have been calculated at £12 per unit

How much profit is made under marginal costing if the company sells 450,000 units?

A. 2,250,000

B. 3,300,000

C. 4,620,000

D. 5,250,000

variable Cost
Selling Price $\rightarrow 40 - 26 = 14$ contribution
unit Sales $\rightarrow 450,000 \times 14 = 6,300,000$
Fixed Cost $12 \times 140,000 (1,680,000)$
Profit $\underline{4,620,000}$

3. Arlo Ltd sells one product. The cost card for that product is given below:

Direct Materials

5

Direct Labour

6

Variable Production Overhead

4

Fixed Production Overhead

3

Variable Selling Cost

4

Total Variable Cost
 $5 + 5 + 4 + 4 = 19$ variable Cost
 $= SP 32 - 19 = 13$ contribution
 $= 13 \times 900 = 11,700$
Units

The selling prices per unit is £32. Budgeted fixed overheads are based on budgeted production of 2,000 units. Opening inventory was 250 units and closing inventory was 200 units. Sales during the period were 900 units and the actual overheads incurred were £1,800.

The Total Contribution earned during the period was:

- ☒ A. ~~11,900~~ 11,700
- B. 12,000
- C. 11,000
- D. 12,900

4. Marlow Ltd sells one product. The cost card for that product is given below:

Direct Materials	7	Total Variable Cost. = $\overset{DM}{7} + \overset{DL}{8} + \overset{VPO}{5} + \overset{VSC}{5} = 25$ variable cost
Direct Labour	8	
Variable Production Overhead	5	= SP 35 - 25 = 10 contribution
Fixed Production Overhead	4	= 10 $\times$ $\underset{\substack{\uparrow \\ \text{units}}}{1000} = 10,000$
Variable Selling Cost	5	

The selling prices per unit is £35. Budgeted fixed overheads are based on budgeted production of 1,500 units. Opening inventory was 220 units and closing inventory was 180 units. Sales during the period were 1000 units and the actual overheads incurred were £1,400.

- A. 11,000
- ☒ B. 10,000
- C. 9,000
- D. 8,000

5. A company manufactures and sells a single product. The following data relate to a weekly output of 3,300 units:

	£ per unit	£ per unit
Selling Price		50
Less costs:		
Variable Production	10	
Other variable costs	11	
Fixed	15	
		(22)
Profit		<u>28</u>

What is the weekly breakeven point (to the nearest whole units)?

- A. 1700
- ☒ B. 1707
- C. 1600
- D. 1607

$$\text{Contribution per unit} = (\text{CSP } 50 - \text{VP } 10 - \text{OVC } 11) = 29$$

$$\text{Total Fixed Cost (FC)} = 15 \times 3300 = 49,500$$

$$\text{Breakeven} = \frac{49,500}{29} = 1707$$

6. A company has established a marginal costing profit of 110,000. Opening inventory was 500 units and closing inventory was 650 units.

The fixed production overhead absorption rate has been calculated as £6/unit.

What was the profit under absorption costing?

- A. 200,900
- B. 250,000
- ☒ C. 110,900
- D. 140,000

$$\begin{array}{r} \text{Marginal Costing Profit} \\ \text{Less: Fixed Costs in OI} \\ \text{Add: Fixed Costs in CI} \end{array} \quad \begin{array}{r} 110,000 \\ (500 \times 6) \\ (650 \times 6) \end{array} \quad \begin{array}{r} 110,000 \\ (3,000) \\ 3,900 \\ \hline 110,900 \end{array}$$

7. A company that uses marginal costing has a profit of 48,700 for a period. Opening inventory was 140 units and closing inventory was 250 units.

The fixed production overhead absorption rate has been calculated as £5/unit.

What was the profit under absorption costing?

- ☒ A. 49,250
- B. 50,000
- C. 49,000
- D. 50,250

$$\begin{array}{r} \text{Marginal Costing Profit} \\ \text{Less: Fixed costs in OI} \\ \text{Add: Fixed Costs in CI} \end{array} \quad \begin{array}{r} 48,700 \\ (140 \times 5) \\ (250 \times 5) \end{array} \quad \begin{array}{r} 48,700 \\ (700) \\ 1,250 \\ \hline 49,250 \end{array}$$

OS Ratio

SOLUTION

1.	Selling Price	47
	Variable Cost	32
	Contribution	15
Contribution	220,000 x 15	3,300,000
Fixed costs (120,000 X 7)		(840,000)
PROFIT		2,460,000

2.	Selling price	40
	Variable cost	26
	Contribution	14
Contribution	450,000 x 14	6,300,000
Fixed costs (140,000 X 12)		(1,680,000)
PROFIT		4,620,000

3. Total Variable Cost (5 + 6 + 4 + 4) = 19

= Selling Price 32 – 19 = 13

= 13 (contribution) x 900 (units) = £11,700

4. Total Variable Cost (7 + 8 + 5 + 5) = 25

= Selling Price 35 – 25 = 10

= 10 (contribution) x 1000 (units) = 10,000

5. Contribution per unit (SP – VP – OVC) 50 – 10 – 11 = £29

Total Fixed Cost (15 (fx) x 3300 (unit) = 49,500

Break-even point = 49,500/29 (contribution) = 1706.90 = 1707

6. Marginal Costing Profit	110,000
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Less: fixed costs in opening inventory	(3,000)
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(500 x 6)

Add: Fixed Costs in closing inventory	3,900
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110,00

7. Marginal Costing Profit	48,700
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Less: fixed costs in opening inventory	(700)
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(140 x 5)

Add: fixed costs in closing inventory	1,250
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(250 x 5)

49,250

