

## Problem: 1

Solve!

(a)

### X Y Z Company for the year ended Statement of Cost of Goods Manufactured

Particulars	Amount
Raw Materials (1/1/2022)	\$ 35000
(+) Raw material - purchased	215,000
Raw material available for use	\$ 250,000
(-) Raw material - 31/12/2022)	(25,000)
Raw material used	225,000
(+) Direct labor	450,000
(+) Manufacturing Overhead	675000
Total Manufacturing cost	205000
(+) Work in Process (1/1/2022)	880,000
Total Work in Process	90,000
(-) Work in Process (31/12/2022)	(60,000)
Cost of Goods Manufactured	\$ 730,000

Notes:  
Calculation of Manufacturing O/H!

Property taxes for factory building	\$ 16,000
factory Manager's salary	40,000
Indirect labor	1,15,000
Depreciation factory, building	34,000

\$ 209,000

(b)

Calculation of Period cost:

Administrative expenses	\$ 250,000
Delivery expense	100,000
Insurance for head office	24,000
Sales commissions	150,000

\$ 524,000

Calculation of conversion cost:

$$\begin{aligned} & \text{Direct labor + Manf. O/H} \\ = & \$ 450,000 + 205000 \\ = & \$ 655000 \end{aligned}$$

### Problem: 003

①

$$\text{CM ratio} = \frac{SP - VL}{SP}$$

$$= \frac{60 - 45}{60}$$

$$= 0.25$$

variable expense  
sales

$$\text{Variable expense ratio} = \frac{45}{60}$$

$$= 75\%$$

②

$$\text{BEP (units)} = \frac{\text{fixed cost}}{\text{CM per unit}}$$

$$= \frac{\$240,000}{60-45}$$

$$= 16000 \text{ units}$$

$$\text{BEP} \text{ (dollar sales)} = \frac{\text{Fixed cost}}{\text{CM ratio}}$$

$$= \frac{\$ 240,000}{0.25}$$

$$= \$ 960,000$$

③

Sales ( $16000 \times 60$ )	\$ 960,000
less: Variable expenses ( $16000 \times 45$ )	(720,000)
Contribution margin	<u>\$ 240,000</u>

Whittemore Company

$$= \$ 960,000$$

④

$$\text{Target sales in units} = \frac{\text{fixed cost} + \text{Target Profit}}{\text{CM per unit}}$$

$$\begin{aligned} &= \frac{4240,000 + 90,000}{60 - 45} \\ &= 22000 \text{ units} \end{aligned}$$

$$\text{Target sales in Amounts} = \frac{\text{fixed cost} + \text{Target Profit}}{\text{CM ratio}}$$

$$\begin{aligned} &= \frac{4240,000 + 90,000}{0,25} \\ &= \$ 13,20,000 \end{aligned}$$

(4)

$$\text{Margin of Safety (in units)} = \frac{\text{Actual Sales (unit)} - \text{BEP (unit)}}{\text{Sales per unit}}$$
$$= 20000 - 16000$$
$$= 4000 \text{ units}$$

$$\text{Margin of safety (dollars)} = (\text{Actual sales (unit)} - \text{BEP (unit)}) \times \text{Sales per unit}$$
$$= (20,000 - 16,000) \times \$60$$
$$= \$240,000$$

$$\text{Margin of safety ratio} = \frac{\text{MOS in dollars}}{\text{Sales}}$$
$$= \frac{\$240,000}{\$1,200,000}$$
$$= 0.20 \text{ or } 20\%$$

(6)

Voldemord Company  
Contribution Margin Income Statement

Particulars	Amount
Sales ( $1200,000 + 50,000$ )	\$ 1250,000
less: Variable expenses	900,000
Contribution margin	350,000
less: Fixed expenses	240,000
Net operating income	110,000

Because of the increase in sales the net operating income is increased also.

## Problem: 5

(For your understanding)

(a)

High Activity  
Low Activity

No. of units produced

2406  
124

Maintenance cost

\$ 5184  
1588

Change

2282

\$ 3596

$$b = \frac{\$ 3596}{2282}$$

$$= \$ 1.57 \text{ per unit}$$

Considering the high activity,

Total cost  ~~$\alpha + \beta n$~~

$$\Rightarrow \$ 5184 = \$ 1.57 \text{ per unit} * x + a$$

$$\Rightarrow \$ 5184 = a + \$ 1.57 \text{ per unit} * 2406$$

$$\Rightarrow a = \$ 1406.58$$

So,

The variable cost is \$ 1.57 per unit

Fixed cost is \$ 1406.58.

b)

Cost formula,

$$y = \$1406.58 + \$1.57 \text{ per unit}$$

(c)

The total cost will be,

$$y = \$1406.58 + \$1.57 \text{ per unit} \times 2450$$
$$= \$5253.08$$

Problem 6: See your class work.