

Terms Related to Break Even point

i) Angle of Incidence (θ) :-

It is the angle at which, total sale line cuts the total cost line, Larger this angle (θ) better the Working Conditions will be.

ii) Contribution Margin : (CM) → Marginal Profit or Gross Margin

Changes in Profit

$$CM = \text{Total Sale} - \text{Total Variable Cost}$$

$$CM = S - V = (S - V) \times x$$

[Contribution] ~~is~~ for

$$S = S \times x$$

$$V = V \times x$$

$$\text{Contribution} = (S - V)$$

$$V = 5 \text{ Rs unit}$$

$$S = 8 \text{ Rs unit}$$

$$S = F + V + P$$

(CM) → $S - V = F + P$

$$CM = F + P = (S - V) \times x$$

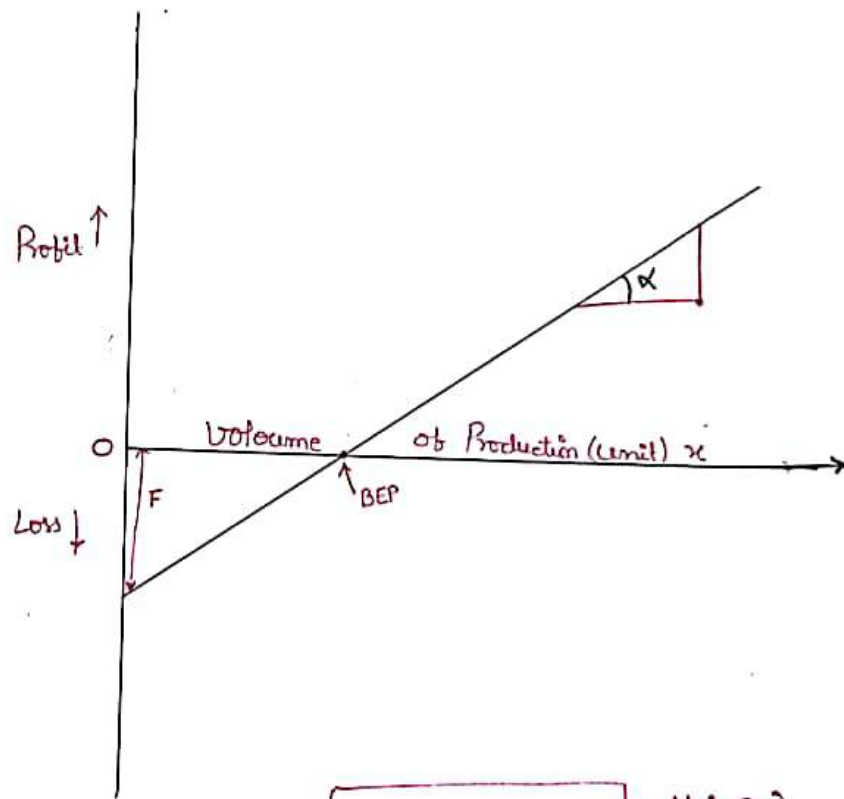
Change in Profit \rightarrow Units \times Profit

Adjunct Profit or net profit

$$P = CM - F$$

Marginal Profit
or
Gross Margin

iii) Profit volume Graph :-



$$\begin{aligned} S &= F + V + P \quad \rightarrow \text{Main Eqn} \\ Sx &= F + vx + P \\ \boxed{P} &= (s-v)x - F \\ \text{Slope} &= (s-v) \end{aligned}$$

at $x=0$ $\boxed{P = -F}$

at BEP; $\boxed{x_{\text{BEP}} = \frac{F}{(s-v)}}$

iv) Profit volume Ratio :- (P/V) Ratio [1 Company diff Product.]

→ It is the term use to represent profitability related to sales and it is used mainly when we deal in multi product.

→ This Ratio Always remains constant for a particular product.

$$(P/V) \text{ Ratio} = \frac{CM}{S} = \frac{S-V}{S} = \frac{S-V}{S}$$

$$(P/V) \text{ Ratio} = \frac{F + P \uparrow}{S \uparrow} = \frac{S-V}{S} \rightarrow \text{Constant}$$

$$\frac{F + P_1}{S_1} = \frac{F + P_2}{S_2}$$

$$(P/V) \text{ Ratio} = \frac{\Delta P}{\Delta S}$$

e.g. 0.22 0.18 0.31
 to ↑ to ↑ to ↑

NOTE:

If there is option of increasing the sale, highest (P/V) Ratio should be preferred and if there is option of decreasing the sale lowest (P/V) Ratio should be preferred.

v) Margin of Safety % (MOS)

It is the difference b/w output at full capacity, compared to output at Break even point.

$$(MOS)_{\text{Sale}} = (Sale)_x - (Sale)_{\text{BEP}}$$

$$(MOS)_{\text{Sale}} = S_x - S_{\text{BEP}} \quad \underline{\text{Rs.}}$$

$$(MOS)_{\text{Sale}} = S_x - S x_{\text{BEP}} \\ = S \left[x - \frac{F}{(S-v)} \right]$$

$$(MOS)_{\text{Sale}} = S \cdot \left[\frac{(S-v)x - F}{S-v} \right]$$

$$(MOS)_{\text{Sale}} = \frac{.P}{\frac{S-v}{S}}$$

$$(MOS)_{\text{Sale}} = \frac{P}{(P/V)_{\text{Ratio}}}$$

% Wise Margin of Safety :-

$$(MOS)\% = \left[\frac{S_x - S_{\text{BEP}}}{S_x} \right] \times 100$$