

## FORMULA

$$\text{Total carrying cost (TCC)} = (\text{inventory average}) (\text{carrying cost per unit}) \\ = (Q/2) C$$

$$\text{Total ordering cost (TOC)} = (\text{times order is made}) (\text{each order cost}) \\ = (S/Q) O$$

$$\text{Total inventory cost (TIC)} = \text{TCC} + \text{TOC} \\ = (Q/2) C + (S/Q) O$$

$$\text{EOQ} = \sqrt{\frac{2(S) (O)}{C}}$$

$$\text{Inventory average} = (\text{EOQ} / 2) + \text{safety stock}$$

$$\text{Number of annual order} = \text{annual requirement} / \text{each order quantity (EOQ)}$$

$$\text{Total inventory cost} = \text{Total Carrying Cost (TCC)} + \text{Total Ordering Cost (TOC)} \\ = ((Q/2) + \text{safety stock}) C + (S/Q) O$$

$$\text{Surrendered discount annual cost} = \frac{a}{1-a} \times \frac{360}{c-b}$$

(Credit effective cost)

$$\text{Interest} = \text{Principlal (P)} \times \text{Rate (R)} \times \text{Time (T)}$$

$$\text{Annual effective rate} = \frac{\text{Interest}}{\text{Principlal}} \times \frac{1}{\text{Time}}$$

$$\text{Annual effective rate} = \frac{\text{Interest}}{\text{Principlal} - \text{Interest}} \times \frac{1}{\text{Time}}$$

$$\text{Effective cost of Interest} = \frac{(\text{Interest} + \text{Fees})}{(\text{Principlal} - \text{Interest} - \text{Fees})} \times \frac{1}{\text{Time}}$$

$$V_b = I (\text{PVIFA } i, n) + M (\text{PVIF } i, n)$$

$$V_b = I (\text{PVIFA } i/m, mn) + M (\text{PVIF } i/m, mn)$$

$$V_{ps} = \frac{D}{R_{ps}}, \quad R_{ps} = \frac{D}{V_{ps}}, \quad V_{cs} = \frac{D}{1 + R_{cs}} + \frac{P_1}{1 + R_{cs}}$$

$$\text{Annual Depreciation} = \frac{\text{Cost of depreciable assets} - \text{Scrap Value}}{\text{Asset life}}$$

$$PP = \text{Initial outlay} / \text{ACF average}$$

$$NPV = (\text{ACF}_t \times \text{PVIFA } i, n) - IO$$

$$\text{IRR} = \boxed{IO = \frac{\text{ACF}_t}{\sum (1 + \text{IRR})^t}} \quad \boxed{PI = \frac{\text{ACF}_t}{\sum (1 + k)^t} / IO}$$

$$(P \times Q) - [(V \times Q) + F] = \text{EBIT} = 0$$

$$\text{BEP (unit)}, \quad Q = \frac{F}{P - V}, \quad \text{BEP (\$)} = \text{BEP (unit)} \times \text{sales price}$$

$$\text{BEP (\$)}, \quad *S = \frac{F}{1 - \frac{V}{S}}, \quad \text{BEP (unit)} = \text{BEP (\$)} / \text{Sales price per unit}$$

$$\text{DOL (S)} = (S - VQ) / (S - VQ - F)$$

$$\text{DFL (S)} = (S - VQ - FC) / (S - VQ - FC - I - [PD \times 1 / (1 - T)])$$

$$\text{DCL} = \text{DOL} \times \text{DFL}$$

$$\text{DCL (S)} = (S - VQ) / (S - VQ - FC - I - [PD / (1 - T)])$$