Percentage

If a man sells two similar objects, one at a loss of $x\%$ and another at a gain of $x\%$, then he always incurs loss in this transaction and loss% is $\frac{x^2}{100}\%$

- If x is reduced to x_0, then Reduction $\% = \frac{x - x_0}{x} \times 100$
- If x is increased to x_1, then, Increment $x_1\ \% = \frac{x_1 - x}{x} \times 100$

Value after n years $= P\left(1 - \frac{R}{100}\right)^n$

Depreciation

'Per' hundred denoted by %

Fraction to % $\frac{3}{4} \times 100 = 75\%$

Population after n years $= P\left(1 + \frac{R}{100}\right)^n$

- Cost Price (C.P)
- Selling Price (S.P)
- Marked Price (M.P)
- Profit-Loss (P-L)

Profit / Loss

% to fraction $50\% = \frac{50}{100}$

- Profit $= S.P - C.P$
- Loss $= C.P - S.P$
- Profit % $= \frac{P}{C.P} \times 100\%$
- Loss % $= \frac{L}{C.P} \times 100\%$
- Gain/Loss% $= \left[\frac{x - y}{y}\right] \times 100$
- S.P $= \left[\frac{100 \pm \left(\frac{\text{gain}}{\text{loss}}\right)}{100}\right] \times C.P$

Where $x = S.P$, $y = C.P$

- If an object is sold on $r\%$ loss, then, $S.P = \frac{[100 - \text{Loss}\%]}{100} \times C.P$

or $C.P = \frac{100}{[100 - \text{Loss}\%]} \times S.P$

Discount $=$ Marked Price $-$ Selling Price

Discount % $= \frac{\text{discount}}{\text{Marked price}} \times 100$

If an article is sold at D% discount, then

$S.P = MP\left(\frac{100 - D}{100}\right)$ or $MP = \frac{S.P \times 100}{100 - D}$

Discount

More/less Percentage

- A is R % more than B, then B is less than A by $\left(\frac{R}{R + 100} \times 100\right)\%$
- A is R% less than B, then B is more than A by $\left(\frac{R}{100 - R} \times 100\right)\%$

- If a% and b% are two succeissive losses then (negative sign shown loss and positive sign shows profit). Total loss $\% = [-a - b + \frac{ab}{100}]$
- If $a\%$ profit and $b\%$ loss occur, simultaneously then overall loss or profit % is $[a - b - \frac{ab}{100}]\%$
- If $a\%$ loss and $b\%$ profit occur then, total $\frac{\text{loss}}{\text{profit}}$ is $\left[-a + b - \frac{ab}{100}\right]\%$

(–ve sign for loss, +ve sign for profit)

Single discount $= \left(x + y - \frac{xy}{100}\right)\%$

where x and y are two successive discounts.

Trace the Mind Map

▸ First Level ▸ Second Level ▸ Third Level