Profit, Loss and Discount

Tip 1

- Profit, Loss and Discount is very important topic for CAT and significant number of questions are asked from this topic every year.
- The number of concepts in these topics is limited and most of the problems can be solved by applying the formulae directly
- This document covers various formulas, tips and shortcuts of Profit, Loss and Discount topic.

Tip 2

- **Cost Price**

The amount paid to purchase an article or the cost of manufacturing an article is called Cost Price (C.P)

- **Selling Price**

The price at which a product is sold is called Selling price (S.P)

- **Marked Price**

The price at which an article is marked is called Marked price (M.P)

Tip 3

- If S.P>C.P, then Profit or Gain, P = S.P – S.P
- If C.P>S.P, then Loss, L = C.P – S.P
- % Profit or Gain percentage or Profit Percentage = $\frac{\text{Profit}}{\text{C.P}} \times 100$
- %Loss = $\frac{\text{Loss}}{\text{C.P}} \times 100$
- Discount = M.P – S.P (If no discount is given, then M.P = S.P)
- %Discount = $\frac{\text{Discount}}{\text{M.P}} \times 100$

Tip 4

- Total increase in price due to two subsequent increases of X% and Y% is (X+ Y+ $\frac{XY}{100}$)%

- If two items are sold at same price, each at Rs. x, one at a profit of P% and other at a loss of P% then there will be overall loss of $\frac{P^2}{100}$ %

  The absolute value of loss = $\frac{2P^2x}{100^2-P^2}$

Tip 5

- If C.P of two items is same, and by selling of each item he earned p% profit on one article and p% loss on another, then the there will be no loss or gain.

- If a trader professes to sell at C.P but uses false weight, then

$$\text{Gain}\% = \frac{\text{Difference}}{\text{True Weight}} \times 100\%$$

difference represents the difference in claimed weight and true weight; claimed weight $>$ true weight

Tip 6

- S.P = $\left(\frac{100 + \text{Profit}\%}{100}\right)$ C.P (If S.P > C.P)
- S.P = $\left(\frac{100 - \text{Loss}\%}{100}\right)$ C.P (If S.P < C.P)
- C.P = $\frac{100 \times \text{S.P}}{100 + \text{Profit}\%}$ (If S.P > C.P)
- C.P = $\frac{100 \times \text{S.P}}{100 - \text{Loss}\%}$ (If S.P < C.P)

Tip 7

- Buy x get y free, then the %discount = $\frac{y}{x+y} \times 100$.

  (here x+y articles are sold at C.P of x articles.)

- When there are two successive discounts of a% and b% are given then the,

$$\text{Resultant discount} = \left(a + b - \frac{a*b}{100}\right)$$

- If C.P of x article is equal to the selling price of y articles then the,

$$\text{Resultant profit \% or loss \%} = \frac{y-x}{y} \times 100$$