BALABHADRA SKILL DEVELOPMENT ACADEMY
MATHS FORMULA - 5
ARITHMETIC

PROFIT & LOSS

CP=Cost Price, SP=Selling Price

Sl	Situation	Formula
1	Profit	Selling price-Cost price=$\frac{CP \times r}{100}$
2	Loss	Cost Price-Selling price=$\frac{CP \times r}{100}$
3	Profit percentage	$\frac{Profit}{CP} X100\%$
4	Loss percentage	$\frac{\text{Loss}}{\text{CP}} \text{X}100\%$
5	Selling Price	$CP + \frac{CP \times r}{100}$ = $\frac{\text{CP} \times (100 + \text{Profit Percentage})}{100}$
6	Selling Price	$CP - \frac{CP \times r}{100}$ = $\frac{\text{CP X } (100 - \text{Loss Percentage})}{100}$
7	Cost Price	$\frac{\text{SP X } 100}{(100 + \text{Profit Percentage})}$
8	Cost Price	$\frac{\text{SP X } 100}{(100 - \text{Loss Percentage})}$
9	If an item is sold for Rs. A on a profit (or loss) of r%, then the selling price of the item for a profit (loss) of R% will be ('+' sign is used for a profit and '-' sign is used for a loss)	$\text{SP}= \frac{\text{A}(100 \pm \text{R})}{(100 \pm \text{r})}$
10	If selling price of an item is increased by Rs A instead of a profit or loss of R% it has a profit of r%, then the cost price of the article is	$\text{CP} = \frac{\text{A} \times 100}{(\text{R} \pm \text{r})}$
11	If selling price of two items is same and one of them is sold at a profit of r% and the other is sold at a loss of r%, then loss % is (in such cases, there is always loss)	$\text{Loss} = \left(\frac{\text{r}^2}{100}\right)\%$

12	If cost price of x items is equal to selling price of y items and x>y then there is always a profit and if x<y, then there is always a loss	$\text{Profit } \% = \frac{x-y}{y} \times 100\%$ $\text{Loss } \% = \frac{y-x}{y} \times 100\%$
13	Ram bought an item for Rs. x and sold it at r% profit (loss) to Mohan. Again, Mohan sold it at R% profit (loss) to Ram, then profit (loss) to Ram in this transaction.	$x\left(\frac{100 \pm r}{100}\right)\left(1 - \frac{100 \pm R}{100}\right)$
14	If A sold an article to B at a profit (loss) of r_1% and B sold this article to C at a profit (loss) of r_2%, then cost price of article for C	(Cost price for A) × $\left(1 \pm \frac{r_1}{100}\right)\left(1 \pm \frac{r_2}{100}\right)$
15	A dishonest dealer professes to sell his goods at cost price but he uses a weight of y gm for a weight of x gm, then his gain or loss percentage	$\frac{x-y}{y} \times 100\%$
16	A grocer sells an article at a profit of r% and uses a weight which is R% less, then gain percentage of grocer will be	$\left(\frac{r+R}{100-R} \times 100\right)\%$
17	If a person purchased y articles for Rs. x and sold them at a rate of x articles for Rs. y, then (i)if x>y, then loss percentage and (ii) if x<y, then gain percentage	$\frac{(x+y)(x-y)\times 100}{x^2}\%$
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