



VIII - Comparing Quantities - Mathematics Assignment -

Basic Concepts:- This chapter of Comparing quantities has five sub-topics as mentioned below

1. Ratio
2. Percentage
3. Profit and Loss
4. Discount
5. Compound Interest.

We shall discuss these topics one by one.

1. Ratio: It means Comparing two quantities of similar nature (measured in the same unit). Ratio is converted into a fraction as $a:b$ means $\left(\frac{a}{b}\right)$

Note:- The value of a ratio is not changed if both its terms are multiplied or divided by the same number

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2. Percentage:- Per cent means 'out of hundred'.
The symbol used to denote percent is %

$$\text{eg } 10\% = \frac{10}{100} = \frac{1}{10} = 0.1$$

$$25\% = \frac{25}{100} = 0.25 \text{ etc.}$$

So from above, we noticed that percent can be converted into a fraction or in a ratio as well as.

$$\text{eg. } 40\% = \frac{40}{100} \text{ OR } 40:100 \text{ OR } 4:10 \\ \text{OR } 2:5$$

3. Profit and Loss: let us explain its concept by means of an example. Suppose I purchased an article for Rs 500 and sold it at 550 i.e. Rs 50 more. This more amount is called the profit.

on the other hand if we sell it for Rs 450 i.e. Rs 50 less than the Rs 500 will be the Loss. The amount which we have invested in purchasing

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The article is called Cost-price
and is generally denoted by CP and
S.P i.e. selling price is the price
for which the article is sold.

Now

if $SP > CP$ then we get Profit

if $SP < CP$ " " " Loss.

$$\text{So Profit} = SP - CP$$

$$\text{and Loss} = CP - SP$$

if $SP = CP$ then there is no profit
no Loss.

Profit or Loss % is always calculated
on C.P.

i.e.,

$$\text{Profit/Loss \%} = \frac{\text{Profit/Loss}}{C.P.} \times 100$$

Now

How to find SP if CP & Profit
or loss % is given

$$S.P = \frac{CP \times (100 + P\%)}{100} \text{ or } \frac{CP \times (100 - L\%)}{100}$$

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Similarly

how to find CP if SP and Profit/Loss % given.

$$CP = \frac{S.P \times 100}{(100 + P\%)} \quad \text{OR} \quad \frac{SP \times 100}{(100 - L\%)}$$

4. Discount:- Student, you might have seen on festivals that shopkeepers offers a heavy discount so that the sale is increased. Discount is a type of rebate given by the shopkeeper to the customer. i.e. taking less amount than the marked price (which is written on the article).

Let us discuss in detail.

Marked Price (M.P): The printed price of an article is called the M.P. It is also called the List price (L.P) or usual price.

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Discount: The deduction done on the M.P. is called discount. The shopkeeper generally announce the discount in percentage. Anyhow, but it is always calculated on the M.P. or L.P.

Net Price :- The difference between the M.P and Discount is called net-price or Sale price. It is also called discounted price.

5. Compound Interest :- Before discussing about Compound interest, let us discuss about Simple interest. It means, the interest calculated over principal for certain time and certain rate. We call this interest as Simple interest. There is a short way to calculate Simple interest i.e. by using formula.

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