
Chapter – 8

Comparing Quantities

- **Ratio:** Comparing by division is called ratio. Quantities written in ratio have the same unit. Ratio has no unit. Equality of two ratios is called proportion.
- Product of extremes = Product of means
- **Percentage:** Percentage means for every hundred. The result of any division in which the divisor is 100 is a percentage. The divisor is denoted by a special symbol %, read as percent.
- **Profit and Loss:**
 - (i) **Cost Price (CP):** The amount for which an article is bought.
 - (ii) **Selling Price (SP):** The amount for which an article is sold.
- Additional expenses made after buying an article are included in the cost price and are known as **overhead expenses**. These may include expenses like amount spent on repairs, labour charges, transportation, etc.
- **Discount** is a reduction given on marked price. Discount = Marked Price – Sale Price.
- Discount can be calculated when discount percentage is given. Discount = Discount % of Marked Price
- Additional expenses made after buying an article are included in the cost price and are known as **overhead expenses**. CP = Buying price + Overhead expenses
- Sales tax is charged on the sale of an item by the government and is added to the Bill Amount. Sales tax = Tax% of Bill Amount
- **Simple Interest:** If the principal remains the same for the entire loan period, then the interest paid is called simple interest. $SI = \frac{P \times R \times T}{100}$
- Compound interest is the interest calculated on the previous year's amount ($A = P + I$)
 - (i) Amount when interest is compounded annually = $P \left(1 + \frac{R}{100}\right)^n$; P is principal, R is rate of interest, n is time period
 - (ii) Amount when interest is compounded half yearly

$$= P \left(1 + \frac{R}{100}\right)^{2n} \begin{cases} \frac{R}{2} \text{ is, half yearly rate and} \\ 2n = \text{number of 'half - years'} \end{cases}$$
