Chapter- 7

PERCENT AND PERCENTAGE

Main Concepts and Results

Hundredth Part: If you divide any thing into 100 equal parts, then each part would be known as hundredth part.

Percentage: By a certain percentage, we mean *"that many hundredth"*
We denote x percentage by x , thus $x\% = x\ hundred^{th} = \frac{x}{100}$

Convert a Percentage into a Fraction

For converting a percentage into fraction, divide it by 100 and remove the $\%$ sign.

Thus $x\% = \frac{x}{100}$

Example: $5\% = \frac{5}{100} = 0.05$

Convert Fraction into Percentage

For converting a fraction into a percentage, multiply the fraction by 100 and add $\%$ sign to the resultant.

$$\frac{a}{b} = \frac{a}{b} \times 100\%$$

Example: $0.05 = (0.05 \times 100) = 5\%$

Convert a Percentage into a Ratio

A percentage can be expressed as a ratio with the first term equal to the given percentage and the second term equal to 100

Therefore, $x\% = \frac{x}{100}$

Example: $5\% = \frac{5}{100} = \frac{1}{20}$

Convert Ratio into a Percentage

First write the ratio as a fraction and then multiply the fraction by 100 and put sign.

Therefore $a : b = \frac{a}{b} \times 100\%$

Example: $1 : 4 = \frac{1}{4} \times 100\% = 25\%$

Convert a Percentage into a Decimal

First convert the percentage into fraction and then convert fraction into a decimal.

Example: $75\% = \frac{75}{100} = 0.75$

Convert a Decimal into a Percentage

First convert the given decimal into a fraction and then multiply the fraction by 100 and add $\%$ sign.

Example: $0.40 = \frac{40}{100} = \frac{40}{100} \times 100\% = 40\%$

Increasing or Decreasing a certain Quantity by a Certain Percentage

1. If you have to increase a number a by $x\%$, then the new number would be (1+ x/100) x original number
2. If you have to decrease a number a by $x\%$, then the new number would be (1- x/100) x original number
2.