

Percentage (%)

Instructions to Students: The notes provided must be copied to the math's copy & then do the Homework in the same copy.

'**Per cent**' means per hundred or out of 100.

So, by a certain per cent, we mean many hundredths.

X per cent means X hundred, denoted by X%

Examples : (i) 8% means 8 out of 100 = $\frac{8}{100}$ = 8 hundredths.

(ii) 75% means 75 out of 100 = $\frac{75}{100}$ = 75 hundredths.

Converting a percentage into a Fraction, Decimal or Ratio

Working rule

- I. For converting a percentage into a fraction, the percentage numeral is divided by 100.

For example ; i) $6\% = \frac{6}{100}$ ii) $23\% = \frac{23}{100}$ iii) $95\% = \frac{95}{100}$

- ii) The above fraction may be converted into a decimal or a ratio, as desired. For eg. $6\% = \frac{6}{100} = 0.06$, also $6\% = \frac{6}{100} = \frac{3}{50} = 3:50$

Finding a percentage of a given quantity

Rule : To find a percentage of a given quantity , change the percentage into a fraction & multiply by the given quantity.

Example 1. Find the value of;

- i) $7\frac{1}{2}\%$ of Rs. 560 ii) 7% of 12 km

Solution : we have;

i) $7\frac{1}{2}\%$ of Rs. 560 = Rs. $\{560 \times \frac{15}{2} \times \frac{1}{100}\}$ = Rs. 42

ii) 7% of 12 km = $\{12 \times \frac{7}{100}\}$ km = $\frac{21}{25}$ km = $\{\frac{21}{25} \times 1000\}$ m = 840m

Application of percentage

Example 1. There are 165 pupils in a school. Out of them, 20% are girls. How many girls are there in the school? How many are boys.

Solution: no. of girls in the school = 20% of 1650

$$= \frac{20}{100} \text{ of } 1650 = \left\{ 1650 \times \frac{20}{100} \right\} = 330$$

No. of boys in the school = $\{1650 - 330\} = 1320$

Example 2. After deducting 10% of the amount of a bill, Rs. 3204 is left to be paid. What is the amount of the original bill?

Solution : percentage of amount deducted = 10%

Percentage of amount to be paid = $(100 - 10) \% = 90\%$

90% of original bill = Rs. 3204

$$\Rightarrow \frac{90}{100} \times (\text{original bill}) = \text{Rs. } 3204$$

$$\Rightarrow \text{Original bill} = \text{Rs. } \left\{ 3204 \times \frac{100}{90} \right\} = \text{Rs. } 3560$$

Hence the amount of original bill is Rs. 3560.

Example 3. A metal contains 56% tin , 20% zinc, & the rest is brass. Find the quantity of brass in 750g of this metal.

Solution: percentage of tin = 56 %

percentage of zinc = 20 %

percentage of tin & zinc = $(56 + 20) \% = 76\%$

percentage of brass = $(100 - 76) \% = 24\%$

quantity of brass in 750g of metal = 24% of 750g = $\frac{24}{100}$ of 750g.

$$\left\{ 750 \times \frac{24}{100} \right\} \text{ g} = 180\text{g}$$

Hence 750g, of metal contains 180g of brass.

Home Work

Exercise 8.4



{Question No. 1, 2, 3, 4}
