Exercise 8.1 Page: 119

1. Find the ratio of the following:

a) Speed of a cycle 15 km per hour to the speed of scooter 30 km per hour.

b) 5 m to 10 km

c) 50 paise to ₹ 5

Solution:

a) Ratio of the speed of cycle to the speed of scooter $= \frac{15}{30} = \frac{1}{2} = 1:2$

b) Since 1 km = 1000 m,

$$\Rightarrow \frac{5m}{10km} = \frac{5m}{10 \times 1000m} = \frac{5m}{10000m} = \frac{1}{2000} = 1:2000$$

Required ratio= 1:2000

c) Since Re 1 = 100 paise,

$$\Rightarrow \frac{50\ paise}{₹\ 5} = \frac{50\ paise}{5 \times 100\ paise} = \frac{50\ paise}{500\ paise} = \frac{1}{10} = 1:10$$

Required ratio= 1:10

2. Convert the following ratios to percentages.

a) 3:4

b) 2:3

Solution:

a) $3:4 = \frac{3}{4} = \frac{3}{4} \times \frac{100}{100} = \frac{3}{4} \times 100\% = 0.75 \times 100\% = 75\%$

b) $2:3 = \frac{2}{3} = \frac{2}{3} \times \frac{100}{100} = \frac{2}{3} \times 100\% = 0.666 \times 100\% = 66.66\% = 66\frac{2}{3}\%$

3. 72% of 25 students are good in mathematics. How many are not good in mathematics?

Solution:

It is given that 72% of 25 students are good in mathematics.

∴, Percentage of students who are not good in mathematics $= (100 - 72)\%$
$= 28\%$

Here, Number of students who are good in mathematics $= \frac{72}{100} \times 25 = 18$

∴, Number of students who are good in mathematics = 25-18=7

[Also, 28% of $25 = \frac{28}{100} \times 25 = 7$]

∴, 7 students are not good in mathematics.

4. A football team won 10 matches out of the total number of matches they played. If their win percentage was 40, then how many matches did they play in all?

Solution:

Let the total number of matches played by the team be x.

Given that the team won 10 matches and the winning percentage of the team was 40%.

$\therefore, \frac{40}{100} \times x = 10$

$\Longrightarrow 40x = 10 \times 100$

$\Longrightarrow 40x = 1000$

$\Longrightarrow x = \frac{1000}{40}$

$= \frac{100}{4}$

$= 25$

∴, the team played 25 matches.

5. If Chameli had ₹600 left after spending 75% of her money, how much did she have in the beginning?

Solution:

Let the amount of money which Chameli had in the beginning be x.

Given that, after spending 75% of ₹ x, she was left with ₹ 600.

$\therefore, \quad (100 - 75)\%$ of $x = ₹\ 600$

Or, $25\ \%$ of $x = ₹\ 600$

$\frac{25}{100} \times x = ₹\ 600$

$x = 600 \times 4$

$= 2400$

∴, Chameli had ₹ 2400 in the beginning.

6. If 60% people in city like cricket, 30% like football and the remaining like other games, then what per cent of the people like other games? If the total number of people are 50 lakh, find the exact number who like each type of game.

Solution:

Percentage of people who like other games $= (100 - 60 - 30)\%$

$= (100 - 90)\% = 10\ \%$

Total number of people= 50 lakh

∴, Number of people who like cricket $= \frac{60}{100} \times 50 = 30$ lakh

Number of people who like football $= \frac{30}{100} \times 50 = 15$ lakh

Number of people who like other games $= \frac{10}{100} \times 50 = 5$ lakh