Q1. 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) 50 m to 10 km

(c) 50 paise to Rs.5

Ans. (a) Speed of cycle = 15 km/hr

Speed of scooter = 30 km/hr

Hence ratio of speed of cycle to that of scooter =

$15 : 30 = \dfrac{15}{30} = \dfrac{1}{2} = 1 : 2$

(b) $\because$ 1 km = 1000 m

$\therefore$ 10 km = 10×1000 = 10000 m

$\therefore$ Ratio = $\dfrac{5\ m}{10000\ m} = \dfrac{1}{2000} = 1 : 2000$

(c) $\because$ `1 = 100 paise

$\therefore$ `5 = 5×100 = 500 paise

Hence Ratio = $\dfrac{50\ paise}{500\ paise} = \dfrac{1}{10} = 1 : 10$

Q2. Convert the following ratios to percentages:

(a) 3 : 4

(b) 2 : 3

Ans. (a) Percentage of 3 : 4 = $\dfrac{3}{4} \times 100$ %

= 75%

(b) Percentage of 2 : 3 = $\frac{2}{3} \times 100$ %

= $66\frac{2}{3}$%

Q3. 72% of 25 students are good in mathematics. How many are not good in mathematics?

Ans. Total number of students = 25

Number of good students in mathematics = 72% of 25 = $\frac{72}{100} \times 25 = 18$

Number of students not good in mathematics = 25 − 18 = 7

Hence percentage of students not good in mathematics = $\frac{7}{25} \times 100 = 28\%$

Q4. 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?

Ans. Let total number of matches be x.

According to question,

40% of total matches = 10

$\Rightarrow$ 40% of x = 10

$\Rightarrow \frac{40}{100} \times x = 10$

$$\Rightarrow x = \frac{10 \times 100}{40} = 25$$

Hence total number of matches are 25.

Q5. If Chameli had Rs. 600 left after spending 75% of her money, how much did she have in the beginning?

Ans. Let her money in the beginning be `x.

According to question,

$x - 75\%$ of $x = 600$

$$\Rightarrow x - \frac{75}{100} \times x = 600$$

$$\Rightarrow x - \frac{3}{4}x = 600$$

$$\Rightarrow x\left(1 - \frac{3}{4}\right) = 600$$

$$\Rightarrow x\left(\frac{4-3}{4}\right) = 600$$

$$\Rightarrow x\left(\frac{1}{4} = 600\right)$$

$$\Rightarrow x = 600 \times 4 = `2400$$

Hence the money in the beginning was `2,400.

Q6. If 60% people in a city like cricket, 30% like football and the remaining like other games, then what percent 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.

Ans. Number of people who like cricket

= 60%

Number of people who like football

= 30%

Number of people who like other games

= 100% − (60% + 30%) = 10%

Now Number of people who like cricket

= 60% of 50,00,000

$= \dfrac{60}{100} \times 50,00,000 = 30,00,000$

And Number of people who like football

= 30% of 50,00,000

$= \dfrac{30}{100} \times 50,00,000 = 15,00,000$

∴ Number of people who like other games = 10% of 50,00,000

$= \dfrac{10}{100} \times 50,00,000 = 5,00,000$

Hence, number of people who like other games are 5 lakh.