Comparing Quantities: Exercise 8.1

Q.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 Rs. 5
Sol. **(a) Given:** Speed of a cycle = 15 km/hr
And Speed of scooter = 30km/hr

So, ratio of speed of a cycle to the speed of scooter = $\dfrac{15}{30} = \dfrac{1}{2} = 1:2$

(b) Given: 5 m and 100 km
We need to convert 100 km into m.
Since, 1 km = 1000 m.
So, 10 km = 10 x 1000 = 10,000 m

Therefore, required ratio = $\dfrac{5m}{10000m} = \dfrac{1}{2000} = 1:2000$

(c) Given: 50 paise and 5 Rs.
We need to convert 5 Rs. into paise.
Since, 1 Rs = 100 paise.
So, 5 Rs = 500 paise

Therefore, required ratio = $\dfrac{50\,paise}{500\,paise} = \dfrac{1}{10} = 1:10$

Q.2 Convert the following ratios to percentages.
(a) 3 : 4   **(b) 2 : 3**
Sol. (a) Given ratio =3 : 4

So, percentage of 3 : 4 = $\dfrac{3}{4}$ ×100% = 75 %

(b) Given ratio = 2 : 3

So, percentage of 2 : 3 = $\dfrac{2}{3}$ ×100% = $66\dfrac{2}{3}$ %

Q.3 72% of 25 students are good in mathematics. How many are not good in mathematics?
Sol. Given: Percentage of students are good in mathematics out of 25 = 72%
        Percentage of students not good in mathematics = (100 − 72) % = 28%

So, number of students who are not good in mathematics = $\dfrac{28}{100}$ x25 = 7

Thus, Number of students who are not good in mathematics = 7

Q.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?

Sol. Let x number of matches be the total number of matches.

Since, team had won 10 matches which represent winning percentage of the team = 40%.

So, 40% of x = 10

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

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

$$x = 25$$

Thus, the team had played total 25 matches.

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

Sol. Let x amount be the Chamlei had in the beginning.

Given: Since, Chameli had Rs 600 left after spending 75% of her money.

So, (100 − 75) % of x = Rs. 600

$\quad\quad$ 25% of x = Rs. 600

$$\frac{25}{100} \times x = 600 \text{ Rs.}$$

$$x = 600 \times \frac{100}{25} \text{ Rs.}$$

$$x = 600 \times 4 = 2400 \text{ Rs.}$$

Thus, Chameli had Rs. 2400 in the beginning.

Q.6 If 60% people in a 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.

Sol. Given: In a city, percentage of people who like cricket are = 60%

and percentage of people who like football are = 30%

So, percentage of people who like other games are = 100% - (60% + 30%)

$$= 10\%$$

Since, total number of people = 50 lakh

So, no. of people who like cricket = $\frac{60}{100} \times 50$ = 30 lakh

No. of people who like football = $\frac{30}{100} \times 50$ = 15lakh

No. of people who like cricket = $\frac{10}{100} \times 50$ = 5 lakh