

EXERCISE 11(C)

Question 1.

₹ 120 is to be divided between Hari and Gopi in the ratio 5 : 3. How much does each get?

Solution:

$$\text{Total amount} = ₹120$$

$$\text{Ratio in Hari and Gopi} = 5 : 3$$

$$\text{Sum of ratios} = 5 + 3 = 8$$

$$\text{Hari's share} = \frac{120 \times 5}{8} = ₹75$$

$$\text{and Gopi's share} = \frac{120 \times 3}{8} = ₹45$$

Question 2.

Divide 72 in the ratio $2\frac{1}{2} : 1\frac{1}{2}$

Solution:

$$\begin{aligned} \text{Given ratio} &= 2\frac{1}{2} : 1\frac{1}{2} = \frac{5}{2} : \frac{3}{2} \\ &= \frac{5}{2} \times 2 : \frac{3}{2} \times 2 \end{aligned}$$

$$\text{Sum of ratio} = 5 + 3 = 8$$

$$\text{1st divide} = \frac{5}{8} \times 72 = 45$$

$$\text{2nd divide} = \frac{3}{8} \times 72 = 27$$

Question 3.

Divide 81 into three parts in the ratio 2 : 3 : 4.

Solution:

$$\text{Given ratio} = 2 : 3 : 4$$

$$\text{Sum of ratio} = 2 + 3 + 4 = 9$$

$$\text{1st part} = \frac{2}{9} \times 81 = 18$$

$$\text{2nd part} = \frac{3}{9} \times 81 = 27$$

$$\text{3rd part} = \frac{4}{9} \times 81 = 36$$

Question 4.

Divide Rs 10,400 among A, B and C in the ratio $\frac{1}{2} : \frac{1}{3} : \frac{1}{4}$

Solution:

$$\text{Given ratio} = \frac{1}{2} : \frac{1}{3} : \frac{1}{4}$$

$$= \frac{1}{2} \times 12 : \frac{1}{3} \times 12 : \frac{1}{4} \times 12$$

(Since L. C. M. of 2, 3 and 4 = 12)

$$= 6 : 4 : 3$$

$$\text{Sum of ratio} = 6 + 4 + 3 = 13$$

$$\text{A's part} = \frac{6}{13} \times 10400 = 6 \times 800 = \mathbf{4800}$$

$$\text{B's part} = \frac{4}{13} \times 10400 = 4 \times 800 = \mathbf{3200}$$

$$\text{C's part} = \frac{3}{13} \times 10400 = 3 \times 800 = \mathbf{2400}$$

Question 5.

A profit of Rs 2,500 is to be shared among three persons in the ratio 6 : 9 : 10. How much does each person get?

Solution:

Total profit = Rs 2,500

Given ratio = 6 : 9 : 10

Sum of ratio = 6 + 9 + 10 = 25

$$\begin{aligned} \text{Share of 1st person} &= \frac{6}{25} \times 2500 \\ &= 6 \times 100 = \mathbf{Rs\ 600} \end{aligned}$$

$$\begin{aligned} \text{Share of 2nd person} &= \frac{9}{25} \times 2500 \\ &= 9 \times 100 = \mathbf{Rs\ 900} \end{aligned}$$

$$\begin{aligned} \text{Share of 3rd person} &= \frac{10}{25} \times 2500 \\ &= 10 \times 100 = \mathbf{Rs\ 1000} \end{aligned}$$

Question 6.

The angles of a triangle are in the ratio 3: 7: 8. Find the greatest and the smallest

angles.

Solution:

Sum of angles of triangle = 180°

Given ratio 3 : 7 : 8

Sum of ratio = $3 + 7 + 8 = 18$

Smallest angle = $\frac{3}{18} \times 180^\circ = 30^\circ$

Greatest angle = $\frac{8}{18} \times 180^\circ = 80^\circ$

Question 7.

The sides of a triangle are in the ratio 3 : 2 : 4. If the perimeter of the triangle is 27 cm, find the length of each side.

Solution:

Ratio in the sides of a triangle = 3 : 2 : 4

Sum of ratios = $3 + 2 + 4 = 9$

Perimeter of triangle = 27 cm

Length of first side = $\frac{27 \times 3}{9} = 9$ cm

Length of second side = $\frac{27 \times 2}{9} = 6$ cm

Length of third side = $\frac{27 \times 4}{9} = 12$ cm

Question 8.

An alloy of zinc and copper weighs $12\frac{1}{2}$ kg. If in the alloy, the ratio of zinc and copper is 1 : 4, find the weight of copper in it.

Solution:

Weight of alloy = $12\frac{1}{2}$ kg = $\frac{25}{2}$ kg.

Given ratio = 1 : 4

Sum of ratio = $1 + 4 = 5$

Weight of copper = $\frac{4}{5} \times \frac{25}{2}$ kg = $2 \times 5 = 10$ kg

Question 9.

How will Rs 31500 be shared between A, B and C ; if A gets the double of what B gets, and B gets the double of what C gets ?

Solution:

Let the share of C = 1

Share of B = double of C = $2 \times 1 = 2$

Share of A = double of B = $2 \times 2 = 4$

Given ratio (A : B : C) = 4 : 2 : 1

$$\text{Sum of ratio} = 4 + 2 + 1 = 7$$

$$\begin{aligned}\text{A's share} &= \frac{4}{7} \times \text{Rs } 31500 \\ &= 4 \times \text{Rs } 4500 = \text{Rs } 18000\end{aligned}$$

$$\begin{aligned}\text{B's share} &= \frac{2}{7} \times \text{Rs } 31500 \\ &= 2 \times \text{Rs } 4500 = \text{Rs } 9000\end{aligned}$$

$$\begin{aligned}\text{C's share} &= \frac{1}{7} \times \text{Rs } 31500 \\ &= 1 \times \text{Rs } 4500 = \text{Rs } 4500\end{aligned}$$

Question 10.

Mr. Gupta divides Rs 81000 among his three children Ashok, Mohit and Geeta in such a way that Ashok gets four times what Mohit gets and Mohit gets 2.5 times what Geeta gets. Find the share of each of them.

Solution:

Let the share of Geeta = 1

Share of Mohit is (2.5 times of Geeta) = 2.5

Share of Ashok is (4 times of Mohit) = $4 \times 2.5 = 10$

Ratio = $1 : 2.5 : 10 = 1 \times 2 : 2.5 \times 2 : 10 \times 2 = 2 : 5 : 20$

Sum of ratio = $2 + 5 + 20 = 27$

Share of Geeta = $\frac{2}{27} \times \text{Rs } 81000 = 2 \times \text{Rs } 3000 = \text{Rs } 6000$

Share of Mohit = $\frac{5}{27} \times \text{Rs } 81000 = 5 \times \text{Rs } 3000 = \text{Rs } 15000$

Share of Ashok = $\frac{20}{27} \times \text{Rs } 81000 = 20 \times \text{Rs } 3000 = \text{Rs } 60000$