



Exercise 10A

Q14

Answer :

Length:Width = 5:3

Let the length and the width of the field be $5x$ m and $3x$ m, respectively.

Width = 42 m

$$3x = 42$$

$$x = \frac{42}{3} = 14$$

$$\therefore \text{Length} = 5x = 5 \times 14 = 70 \text{ metres}$$

Q15

Answer :

Income:Savings = 11:2

Let the income and the saving be Rs $11x$ and Rs $2x$, respectively.

Saving = Rs 1520

$$2x = 1520$$

$$x = \frac{1520}{2} = 760$$

$$\therefore \text{Income} = \text{Rs } 11x = \text{Rs } (11 \times 760) = \text{Rs } 8360$$

$$\begin{aligned} \text{Expenditure} &= \text{Income} - \text{Saving} \\ &= \text{Rs } (8360 - 1520) \\ &= \text{Rs } 6840 \end{aligned}$$

Q16

Answer :

Income:Expenditure = 7:6

Let the income and the expenditure be Rs $7x$ and Rs $6x$, respectively.

Income = Rs 14000

$$7x = 14000$$

$$x = \frac{14000}{7} = 2000$$

$$\text{Expenditure} = \text{Rs } 6x = \text{Rs } 6 \times 2000 = \text{Rs } 12000$$

$$\begin{aligned} \therefore \text{Saving} &= \text{Income} - \text{Expenditure} \\ &= \text{Rs } (14000 - 12000) \\ &= \text{Rs } 2000 \end{aligned}$$

Q17

Answer :

Let the weight of zinc be x kg.

Ratio of zinc and copper = 7:9

Weight of copper in the alloy = 11.7 kg

$$\frac{7}{9} = \frac{x}{11.7}$$

$$\Rightarrow x = \frac{11.7 \times 7}{9} = \frac{81.9}{9} = 9.1$$

Weight of zinc = 9.1 kg

Q18

Answer :

A bus covers 128 km in 2 hours.

$$\text{Speed of the bus} = \frac{\text{Distance}}{\text{Time}} = \frac{128 \text{ km}}{2 \text{ hr}} = 64 \text{ km/hr}$$

A train covers 240 km in 3 hours.

$$\text{Speed of the train} = \frac{\text{Distance}}{\text{Time}} = \frac{240}{3} = 80 \text{ km/hr}$$

$$\text{Ratio of their speeds} = 64:80 = \frac{64}{80} = \frac{64 \div 16}{80 \div 16} = \frac{4}{5}$$

\therefore Ratio of the speeds of the bus and the train = 4:5

Q19

Answer :

(i) (3:4) or (9:16)

Making the denominator equal:

$$\frac{3 \times 4}{4 \times 4} = \frac{12}{16} \text{ and } \frac{12}{16} > \frac{9}{16}$$

\therefore (3:4) > (9:16)

(ii) (5:12) or (17:30)

Making the denominator equal:

$$\frac{5 \times 5}{5 \times 5} = \frac{25}{25} \text{ and } \frac{17 \times 2}{17 \times 2} = \frac{34}{34}$$

$$\begin{array}{rclcl}
 & 12 \times 5 & 60 & 30 \times 2 & 60 \\
 \Rightarrow & \frac{25}{60} & < & \frac{34}{60} \\
 \therefore & (5:12) & < & (17:30)
 \end{array}$$

(iii) (3:7) or (4:9)

Making the denominator equal:

$$\begin{array}{rclcl}
 & \frac{3 \times 9}{7 \times 9} & = & \frac{27}{63} & \text{and } \frac{4 \times 7}{9 \times 7} = \frac{28}{63} \\
 \Rightarrow & \frac{27}{63} & < & \frac{28}{63}
 \end{array}$$

(3:7) < (4:9)

(iv) (1:2) or (13:27)

Making the denominator equal:

$$\begin{array}{rclcl}
 & \frac{1 \times 27}{2 \times 27} & = & \frac{27}{54} & \text{and } \frac{13 \times 2}{27 \times 2} = \frac{26}{54} \\
 \Rightarrow & \frac{27}{54} & > & \frac{26}{54}
 \end{array}$$

(1:2) > (13:27)

Q20

Answer :

$$\text{(i) } \frac{24}{40} = \frac{24 \div 8}{40 \div 8} = \frac{3}{5} = \frac{3 \times 4}{5 \times 4} = \frac{12}{20}$$

$$\text{(ii) } \frac{36}{63} = \frac{36 \div 9}{63 \div 9} = \frac{4}{7} = \frac{4 \times 3}{7 \times 3} = \frac{12}{21}$$

$$(iii) \frac{5}{7} = \frac{5 \times 4}{7 \times 4} = \frac{20}{28} = \frac{5 \times 7}{7 \times 7} = \frac{35}{49}$$

***** END *****