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

$3x = 42$

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

$\therefore$ Length = $5x = 5 \times 14 = 70$ metres

Q15

Answer :

Income:Savings = 11:2

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

Saving = Rs 1520

$2x = 1520$

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

$\therefore$ Income = Rs $11x$ =Rs (11×760) = Rs 8360

Expenditure = Income − Saving

= Rs (8360 − 1520)

= Rs 6840

Q16

Answer :

Income:Expenditure = 7:6

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

Income = Rs 14000

$7x = 14000$

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

Expenditure = Rs $6x$ = Rs 6×2000 = Rs 12000

$\therefore$ Saving = Income − Expenditure

= Rs (14000 − 12000)

= Rs 2000

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:

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

$\frac{12 \times 5}{60} \quad \frac{30 \times 2}{60}$

$\Rightarrow \frac{25}{60} < \frac{34}{60}$

$\therefore (5:12) < (17:30)$

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

Making the denominator equal:

$\frac{3 \times 9}{7 \times 9} = \frac{27}{63}$ and $\frac{4 \times 7}{9 \times 7} = \frac{28}{63}$

$\Rightarrow \frac{27}{63} < \frac{28}{63}$

(3:7) < (4:9)

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

Making the denominator equal:

$\frac{1 \times 27}{2 \times 27} = \frac{27}{54}$ and $\frac{13 \times 2}{27 \times 2} = \frac{26}{54}$

$\Rightarrow \frac{27}{54} > \frac{26}{54}$

(1:2) > (13:27)

Q20

Answer :

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

(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 **********