Exercise 10B

Q5

Answer :

(i) 25 cm:1 m and Rs 40:Rs 160 (or) 25 cm:100 cm and Rs 40:Rs 160

$\frac{25}{100} = \frac{25 \div 25}{100 \div 25} = \frac{1}{4}$ and $\frac{40}{160} = \frac{40 \div 40}{160 \div 40} = \frac{1}{4}$

Hence, they are in proportion.

(ii) 39 litres:65 litres and 6 bottles:10 bottles

$\frac{39}{65} = \frac{39 \div 13}{65 \div 13} = \frac{3}{5}$ and $\frac{6}{10} = \frac{6 \div 2}{10 \div 2} = \frac{3}{5}$

Hence they are in proportion.

(iii) 200 mL:2.5 L and Rs 4:Rs 50 (or) 200 mL:2500 mL and Rs 4:Rs 50

$\frac{200}{2500} = \frac{2}{25}$ and $\frac{4}{50} = \frac{4 \div 2}{50 \div 2} = \frac{2}{25}$

Hence, they are in proportion.

(iv) 2 kg:80 kg and 25 g:625 kg (or) 2 kg:80 kg and 25 g:625000 g

$\frac{2}{80} = \frac{2 \div 2}{80 \div 2} = \frac{1}{40}$ and $\frac{25}{625000} = \frac{25 \div 25}{625000 \div 25} = \frac{1}{25000}$

Hence, they are not in proportion.

Q6

Answer :

Let the 3rd term be x.

Thus, 51:68::x:108

We know:

Product of extremes = Product of means

$$51 \times 108 = 68 \times x$$

$$\Rightarrow \quad 5508 = 68x$$

$$\Rightarrow \quad x = \frac{5508}{68} = 81$$

Hence, the third term is 81.

Q7

Answer :

Let the second term be x.

Then. 12:x::8:14

We know:

Product of extremes = Product of means

$$12 \times 14 = 8x$$

$$\Rightarrow \quad 168 = 8x$$

$$\Rightarrow \quad x = \frac{168}{8} = 21$$

Hence, the second term is 21.

Q8

Answer :

(i) 48:60, 60:75

Product of means = $60 \times 60 = 3600$

Product of extremes = $48 \times 75 = 3600$

Product of means = Product of extremes

Hence, 48:60::60:75 are in continued proportion.

(ii) 36:90, 90:225

Product of means = $90 \times 90 = 8100$

Product of extremes = $36 \times 225 = 8100$

Product of means = Product of extremes

Hence, 36:90::90:225 are in continued proportion.

(iii) 16:84, 84:441

Product of means = 84 × 84 = 7056

Product of extremes = 16 × 441 = 7056

Product of means = Product of extremes

Hence, 16:84::84:441 are in continued proportion.

Q9

Answer :

Given: 9:x::x:49

We know:

Product of means = Product of extremes

$$x \times x = 9 \times 49$$

$$\Rightarrow \quad x^2 = 441$$

$$\Rightarrow \quad x^2 = (21)^2$$

$$\Rightarrow \quad x = 21$$

Q10

Answer :

Let the height of the pole = x m

Then, we have:

x:20::6:8

Now, we know:

Product of extremes = Product of means

$$8x = 20 \times 6$$

$$x = \frac{120}{8} = 15$$

Hence, the height of the pole is 15 m.

Q11

Answer :

5:3::x:6

We know:

Product of means = Product of extremes

$$3x = 5 \times 6$$

$$\Rightarrow x = \frac{30}{3} = 10$$

$\therefore x = 10$

********** END **********