



### Exercise 12B

	Length of the mast (in cm)	Length of the ship (in cm)
Actual ship	1500	3500
Model of the ship	9	$x$

Clearly, if the length of the actual ship is more, then the length of the model ship will also be more.

So, this is a case of direct proportion.

$$\text{Now, } \frac{1500}{9} = \frac{3500}{x}$$

$$\Rightarrow x = \frac{3500 \times 9}{1500}$$

$$\Rightarrow x = 21 \text{ cm}$$

Therefore, the length of the model of the ship is 21 cm.

Q10.

**Answer :**

Let  $x$  kg be the required amount of dust. Then, we have:

No. of days	8	15
Dust (in kg)	$6.4 \times 10^7$	$x$

Clearly, more amount of dust will be collected in more number of days.

So, this is a case of direct proportion.

$$\text{Now, } \frac{8}{6.4 \times 10^7} = \frac{15}{x}$$

$$\Rightarrow x = \frac{15 \times 6.4 \times 10^7}{8}$$

$$\Rightarrow x = 12 \times 10^7$$

Therefore, 12,00,00,000 kg of dust will be picked up in 15 days.

Q11.

**Answer :**

Let  $x$  km be the required distance. Then, we have:

$$1 \text{ h} = 60 \text{ min}$$

$$\text{i.e., } 1 \text{ h } 12 \text{ min} = (60 + 12) \text{ min} = 72 \text{ min}$$

Distance covered (in km)	50	$x$
Time (in min)	60	72

Clearly, more distance will be covered in more time.

So, this is a case of direct proportion.

$$\text{Now, } \frac{50}{60} = \frac{x}{72}$$

$$\Rightarrow x = \frac{50 \times 72}{60}$$

$$\Rightarrow x = 60$$

Therefore, the distance travelled by the car in 1 h 12 min is 60 km.

Q12.

**Answer :**

Let  $x$  km be the required distance covered by Ravi in 2 h 24 min.

Then, we have:

$$1 \text{ h} = 60 \text{ min}$$

$$\text{i.e., } 2 \text{ h } 24 \text{ min} = (120 + 24) \text{ min} = 144 \text{ min}$$

Distance covered (in km)	5	$x$
Time (in min)	60	144

Clearly, more distance will be covered in more time.

So, this is a case of direct proportion.

$$\text{Now, } \frac{5}{60} = \frac{x}{144}$$

$$\Rightarrow x = \frac{5 \times 144}{60}$$

$$\Rightarrow x = 12$$

Therefore, the distance covered by Ravi in 2 h 24 min is 12 km.

Q13.

**Answer :**

Let  $x$  mm be the required thickness. Then, we have:

Thickness of cardboard (in mm)	65	$x$
No. of cardboards	12	312

Clearly, when the number of cardboard is more, the thickness will also be more.

So, it is a case of direct proportion.

$$\text{Now, } \frac{65}{12} = \frac{x}{312}$$

$$\Rightarrow x = \frac{65 \times 312}{12}$$

$$\Rightarrow x = 1690$$

Therefore, the thickness of the pile of 312 cardboards is 1690 mm.

Q14.

**Answer :**

Let  $x$  be the required number of men.

$$\text{Now, } 6\frac{3}{4} \text{ m} = \frac{27}{4} \text{ m}$$

Then, we have:

Number of men	11	$x$
Length of trench (in metres)	$\frac{27}{4}$	27

Clearly, the longer the trench, the greater will be the number of men required.

So, it is a case of direct proportion.

$$\text{Now, } \frac{11}{\frac{27}{4}} = \frac{x}{27}$$

$$\Rightarrow \frac{11 \times 4}{27} = \frac{x}{27}$$

$$\Rightarrow x = 44$$

Therefore, 44 men should be employed to dig a trench of length 27 m.

Q15.

**Answer :**

Let Reenu type  $x$  words in 8 minutes.

No. of words	540	$x$
Time taken (in min)	30	8

Clearly, less number of words will be typed in less time.

So, it is a case of direct proportion.

$$\text{Now, } \frac{540}{30} = \frac{x}{8}$$

$$\Rightarrow x = \frac{540 \times 8}{30}$$

$$\Rightarrow x = 144$$

Therefore, Reenu will type 144 words in 8 minutes.

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