



### Direct and Inverse Variations Ex 10.1 Q16

**Answer :**

Let  $x$  metre be the length of the cloth that can be purchased for Rs 302.50.

Length (in m)	97	$x$
Cost (in Rs)	242.50	302.50

Since the length of the cloth and its cost are in direct variation, we have :

$$\begin{aligned}\frac{97}{x} &= \frac{242.50}{302.50} \\ \Rightarrow 97 \times 302.50 &= x \times 242.50 \\ \Rightarrow x &= \frac{97 \times 302.50}{242.50} \\ &= \frac{29342.50}{242.50} \\ &= 121\end{aligned}$$

Thus, the required length will be 121 metre.

### Direct and Inverse Variations Ex 10.1 Q17

**Answer :**

Let  $x$  be the number of men required to dig a trench of 27 metre.

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

Since the length of the trench and the number of men are in direct variation, we have :

$$\begin{aligned}\frac{11}{x} &= \frac{27/4}{27} \\ \Rightarrow 11 \times 27 &= x \times \frac{27}{4} \\ \Rightarrow x &= \frac{11 \times 27 \times 4}{27} \\ &= 44\end{aligned}$$

Thus, 44 men will be required to dig a trench of 27 metre.

### Direct and Inverse Variations Ex 10.1 Q18

**Answer :**

Let  $x$  be the number of days for which the worker is paid Rs 875.

Income (in Rs.)	210	875
Number of days	6	$x$

Since the income of the worker and the number of working days are in direct variation, we have :

$$\begin{aligned}\frac{210}{875} &= \frac{6}{x} \\ \Rightarrow 210 \times x &= 875 \times 6 \\ \Rightarrow x &= \frac{875 \times 6}{210} \\ &= \frac{5250}{210} \\ &= 25\end{aligned}$$

Thus, the required number of days is 25.

### Direct and Inverse Variations Ex 10.1 Q19

**Answer :**

Let Rs  $x$  be the income for 20 days of work.

Income (in Rs)	200	$x$
Number of days	8	20

Since the income and the number of working days are in direct variation, we have :

$$\begin{aligned}\frac{200}{x} &= \frac{8}{20} \\ \Rightarrow 200 \times 20 &= 8x \\ \Rightarrow x &= \frac{200 \times 20}{8} \\ &= \frac{4000}{8} \\ &= 500\end{aligned}$$

Thus, the worker will get Rs 500 for working 20 days.

Direct and Inverse Variations Ex 10.1 Q20

**Answer :**

Let  $x$  gm be the weight that would produce an extension of 17.4 cm.

Weight (in gm)	150	$x$
Length (in cm)	2.9	17.4

Since the amount of extension in an elastic string and the weight hung on it are in direct variation, we have :

$$\begin{aligned}\frac{150}{x} &= \frac{2.9}{17.4} \\ \Rightarrow 17.4 \times 150 &= 2.9 \times x \\ \Rightarrow x &= \frac{17.4 \times 150}{2.9} \\ &= \frac{2610}{2.9} \\ &= 900\end{aligned}$$

Thus, the required weight will be 900 gm.

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