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 :

$\frac{97}{x} = \frac{242.50}{302.50}$

$\Rightarrow 97 \times 302.50 = x \times 242.50$

$\Rightarrow x = \frac{97 \times 302.50}{242.50}$

$= \frac{29342.50}{242.50}$

$= 121$

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 :

$\frac{11}{x} = \frac{27/4}{27}$

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

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

$= 44$

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 :

$\frac{210}{875} = \frac{6}{x}$

$\Rightarrow 210 \times x = 875 \times 6$

$\Rightarrow x = \frac{875 \times 6}{210}$

$= \frac{5250}{210}$

$= 25$

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 :

$\frac{200}{x} = \frac{8}{20}$

$\Rightarrow 200 \times 20 = 8x$

$\Rightarrow x = \frac{200 \times 20}{8}$

$= \frac{4000}{8}$

$= 500$

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* :

$\frac{150}{x} = \frac{2.9}{17.4}$

$\Rightarrow 17.4 \times 150 = 2.9 \times x$

$\Rightarrow x = \frac{17.4 \times 150}{2.9}$

$= \frac{2610}{2.9}$

$= 900$

Thus, the required weight will be 900 gm.

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