Direct and Inverse Variations Ex 10.2 Q16

Answer :

Let x be the number of cycles bought if each cycle costs Rs 125 more.

Cost of a cycle (in Rs)	500	625
Number of cycles	25	x

It is in inverse variation. Therefore, we get :

$$500 \times 25 = 625 \times x$$

$$\Rightarrow x = \frac{500 \times 25}{625}$$

$$= 20$$

$\therefore$ The required number of cycles is 20.

Direct and Inverse Variations Ex 10.2 Q17

Answer :

Let x be the number of machines he can buy if a discount of Rs. 50 is offered on each machine.

Number of machines	75	x
Price of each machine (in Rs)	200	150

Since Raghu is getting a discount of Rs 50 on each machine, the cost of each machine will get decreased by Rs 50.

If the price of a machine is less, he can buy more number of machines.

It is a case of inverse variation. Therefore, we have :

$$75 \times 200 = x \times 150$$

$$\Rightarrow x = \frac{75 \times 200}{150}$$

$$= \frac{15000}{150}$$

$$= 100$$

$\therefore$ The number of machines he can buy is 100.

Direct and Inverse Variations Ex 10.2 Q18

Answer :

(i) Since x and y vary inversely, we have :

$xy = k$

For $x = 3$ and $y = 8$, we have :

$3 \times 8 = k$

$\Rightarrow k = 24$

For $x = 4$, we have :

$4y = 24$

$\Rightarrow y = \frac{24}{4}$

$= 6$

$\therefore y = 6$

(ii) Since x and y vary inversely, we have :

$xy = k$

For $x = 5$ and $y = 15$, we have :

$5 \times 15 = k$

$\Rightarrow k = 75$

For $y = 12$, we have :

$12x = 75$

$\Rightarrow x = \frac{75}{12}$

$= \frac{25}{4}$

$\therefore x = \frac{25}{4}$

$\left(\text{iii}\right)$ Given :

$x = 30$ and $k = 900$

$\therefore xy = k$

$\Rightarrow 30y = 900$

$\Rightarrow y = \frac{900}{30}$

$= 30$

$\therefore y = 30$

$\left(\text{iv}\right)$ Given :

$y = 35$ and $k = 7$

Now, $xy = k$

$\Rightarrow 35x = 7$

$\Rightarrow x = \frac{7}{35}$

$= \frac{1}{5}$

$\therefore x = \frac{1}{5}$

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