

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:

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

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

$$= 20$$

... 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:

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

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

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

$$= 100$$

... 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:

$$12x = 75$$

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

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

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

$$x = 30 \text{ and } k = 900$$

$$\therefore xy = k$$

$$\Rightarrow 30y = 900$$

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

$$= 30$$

$$\therefore y = 30$$

(iv) Given:

$$y = 35 \text{ and } k = 7$$

Now,
$$xy = k$$

$$\Rightarrow 35x = 7$$

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

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

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

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