Direct and Inverse Variations Ex 10.2 Q3

Answer :

(i) If the number of men is more, the time taken to construct a wall will be less. Therefore, it is in inverse variation.
(ii) If the length of a journey is more, the price of the ticket will also be more. Therefore, it is not in inverse variation.
(iii) If the length of the journey is more, the amount of petrol consumed by the car will also be more. Therefore, it is not in inverse variation.
Thus, only (i) is in inverse variation.

Direct and Inverse Variations Ex 10.2 Q4

Answer :

Since the volume and pressure for the given mass vary inversely, we have :
$vp = k$
For $v = 60$ and $p = \frac{3}{2}$, we have :
$k = 60 \times \frac{3}{2}$
$= 90$
For $p = 2$ and $k = 90$, we have :
$2v = 90$
$\Rightarrow v = \frac{90}{2}$
$= 45$
For $v = 48$ and $k = 90$, we have :
$48p = 90$
$\Rightarrow p = \frac{90}{48}$
$= \frac{15}{8}$
For $p = 1$ and $k = 90$, we have :
$1v = 90$
$\Rightarrow v = \frac{90}{1}$
$= 90$
For $v = 100$ and $k = 90$, we have :

$$100p = 90$$
$$\Rightarrow v = \frac{90}{100}$$
$$= \frac{9}{10}$$

For $p = \frac{1}{2}$ and $k = 90$, we have :

$$\frac{1}{2}v = 90$$
$$\Rightarrow v = 90 \times 2$$
$$= 180$$

For $v = 200$ and $k = 90$, we have :

$$200p = 90$$
$$\Rightarrow p = \frac{90}{200}$$
$$= \frac{9}{20}$$

Direct and Inverse Variations Ex 10.2 Q5

Answer :

Let x be the number of days in which 15 men can do a piece of work.

Number of men	36	15
Number of days	25	x

Since the number of men hired and the number of days taken to do a piece of work are in inverse variation, we have :

$36 \times 25 = x \times 15$

$\Rightarrow x = \frac{36 \times 25}{15}$

$= \frac{900}{15}$

$= 60$

Thus, the required number of days is 60.

Direct and Inverse Variations Ex 10.2 Q6

Answer :

Let x be the number days required to complete a piece of work by 125 men.

Number of men	50	125
Months	5	x

Since the number of men engaged and the number of days taken to do a piece of work are in inverse variation, *we have* :

$50 \times 5 = 125x$

$\Rightarrow x = \frac{50 \times 5}{125}$

$= 2$

Thus, the required number of months is 2.

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