



Direct and Inverse Variations Ex 10.2 Q1

Answer :

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

$$y = \frac{k}{x}$$

$$\Rightarrow xy = k$$

\therefore The product of x and y is constant.

In all cases, the product xy is constant (i.e., 24).

Thus, in this case, x and y vary inversely.

(ii) In all cases, the product xy is constant for any two pairs of values for x and y .

Here, $xy = 100$ for all cases

Thus, in this case, x and y vary inversely.

(iii) If x and y vary inversely, the product xy should be constant.

Here, in one case, product $= 6 \times 8 = 48$ and in the rest, product $= 36$

Thus, in this case, x and y do not vary inversely.

(iv) If x and y vary inversely, the product xy should be constant.

Here, product is different for all cases.

Thus, in this case, x and y do not vary inversely.

Direct and Inverse Variations Ex 10.2 Q2

Answer :

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

$$xy = k$$

For $x = 16$ and $y = 6$, we have :

$$16 \times 6 = k$$

$$\Rightarrow k = 96$$

For $x = 12$ and $k = 96$, we have :

$$xy = k$$

$$\Rightarrow 12y = 96$$

$$\Rightarrow y = \frac{96}{12}$$

$$= 8$$

For $y = 4$ and $k = 96$, we have :

$$xy = k$$

$$\Rightarrow 4x = 96$$

$$\Rightarrow x = \frac{96}{4}$$

$$= 24$$

For $x = 8$ and $k = 96$, we have :

$$xy = k$$

$$\Rightarrow 8y = 96$$

$$\Rightarrow y = \frac{96}{8}$$

$$= 12$$

For $y = 0.25$ and $k = 96$, we have :

$$xy = k$$

$$\Rightarrow 0.25x = 96$$

$$\Rightarrow x = \frac{96}{0.25}$$

$$= 384$$

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

$$xy = k$$

For $x = 16$ and $y = 4$, we have :

$$16 \times 4 = k$$

$$\Rightarrow k = 64$$

For $x = 32$ and $k = 64$, we have :

$$xy = k$$

$$\Rightarrow 32y = 64$$

$$\Rightarrow y = \frac{64}{32}$$

$$= 2$$

For $x = 8$ and $k = 64$

$$xy = k$$

$$\Rightarrow 8y = 64$$

$$\Rightarrow y = \frac{64}{8}$$

$$= 8$$

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

$$xy = k$$

For $x = 9$ and $y = 27$

$$9 \times 27 = k$$

$$\Rightarrow k = 243$$

For $y = 9$ and $k = 243$, we have :

$$xy = k$$

$$\Rightarrow 9x = 243$$

$$\Rightarrow y = \frac{243}{9}$$

$$= 27$$

For $x = 81$ and $k = 243$, we have :

$$xy = k$$

$$\Rightarrow 81y = 243$$

$$\Rightarrow y = \frac{243}{81}$$

$$= 3$$

***** END *****

