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 **********