



Direct and Inverse Variations Ex 10.1 Q4

**Answer :**

(i) directly

(ii)  $x$  and  $y$  are said to vary directly with each other if  $\frac{x}{y} = k$ , where  $k$  is a positive number

(iii) because  $u = 3v$ ,  $u$  and  $y$  vary directly with each other

Direct and Inverse Variations Ex 10.1 Q5

**Answer :**

Here,  $x$  and  $y$  vary directly.

$$\therefore x = ky$$

$$(i) \quad x = 2.5 \text{ and } y = 5$$

$$\text{i.e., } 2.5 = k \times 5$$

$$\Rightarrow k = \frac{2.5}{5} = 0.5$$

For  $y = 8$  and  $k = 0.5$ , we have :

$$x = ky$$

$$\Rightarrow x = 8 \times 0.5 = 4$$

For  $y = 12$  and  $k = 0.5$ , we have :

$$x = ky$$

$$\Rightarrow x = 12 \times 0.5 = 6$$

For  $x = 15$  and  $k = 0.5$ , we have :

$$x = ky$$

$$\Rightarrow 15 = 0.5 \times y$$

$$\Rightarrow y = \frac{15}{0.5} = 30$$

$$(ii) \quad x = 5 \text{ and } y = 8$$

$$\text{i.e., } 5 = k \times 8$$

$$\Rightarrow k = \frac{5}{8} = 0.625$$

For  $y = 12$  and  $k = 0.625$ , we have :

$$x = ky$$

$$\Rightarrow x = 12 \times 0.625 = 7.5$$

For  $x = 10$  and  $k = 0.625$ , we have :

$$x = ky$$

$$\Rightarrow 10 = 0.625 \times y$$

$$\Rightarrow y = \frac{10}{0.625} = 16$$

For  $x = 35$  and  $k = 0.625$ , we have :

$$x = ky$$

$$\Rightarrow 35 = 0.625 \times y$$

$$\Rightarrow y = \frac{35}{0.625} = 56$$

For  $x = 25$  and  $k = 0.625$ , we have :

$$x = ky$$

$$\Rightarrow 25 = 0.625 \times y$$

$$\Rightarrow y = \frac{25}{0.625} = 40$$

For  $y = 32$  and  $k = 0.625$ , we have :

$$x = ky$$

$$\Rightarrow x = 0.625 \times 32 = 20$$

$$(iii) \quad x = 6 \text{ and } y = 15$$

$$\text{i.e., } 6 = k \times 15$$

$$\Rightarrow k = \frac{6}{15} = 0.4$$

For  $x = 10$  and  $k = 0.4$ , we have :

$$y = \frac{10}{0.4} = 25$$

For  $y = 40$  and  $k = 0.4$ , we have :

$$x = 0.4 \times 40 = 16$$

For  $x = 20$  and  $k = 0.4$ , we have :

$$y = \frac{20}{0.4} = 50$$

$$\text{(iv)} \quad x = 4 \text{ and } y = 16$$

$$\text{i.e., } 4 = k \times 16$$

$$\Rightarrow k = \frac{4}{16} = \frac{1}{4}$$

For  $x = 9$  and  $k = \frac{1}{4}$ , we have :

$$9 = ky$$

$$\Rightarrow y = 4 \times 9 = 36$$

For  $y = 48$  and  $k = \frac{1}{4}$ , we have :

$$x = ky$$

$$= \frac{1}{4} \times 48 = 12$$

For  $y = 36$  and  $k = \frac{1}{4}$ , we have :

$$x = ky$$

$$= \frac{1}{4} \times 36 = 9$$

For  $x = 3$  and  $k = \frac{1}{4}$ , we have :

$$x = ky$$

$$\Rightarrow 3 = \frac{1}{4} \times y$$

$$\Rightarrow y = 12$$

For  $y = 4$  and  $k = \frac{1}{4}$ , we have :

$$x = ky$$

$$= \frac{1}{4} \times 4 = 1$$

$$(v) \quad x = 5 \text{ and } y = 20$$

$$\text{i.e., } 5 = k \times 20$$

$$\Rightarrow k = \frac{5}{20} = \frac{1}{4}$$

For  $x = 3$  and  $k = \frac{1}{4}$ , we have :

$$3 = \frac{1}{4} \times y$$

$$\Rightarrow y = 4 \times 3 = 12$$

For  $x = 9$ ,  $k = \frac{1}{4}$ , we have :

$$x = ky$$

$$\Rightarrow 9 = \frac{1}{4} \times y$$

$$\Rightarrow y = 9 \times 4 = 36$$

\*\*\*\*\* END \*\*\*\*\*