STD - 8

Assignment - 10

Direct and Inverse Variation

1. The cost of 8 pencils ₹ 160. Find the cost of 12 such pencils.

Solution:

Cost of 8 pencils $=$ ₹ 160

Cost of 12 pencils $=$?

Clearly, more no. of pencils will cost more.

So it is a case of direct variation.

Let the cost of pencils $= x$

No. of pencils	8	12
Amount	160	x

$$\frac{8}{160} = \frac{12}{x}$$

$$\Rightarrow \quad 8x = 12 \times 160$$

$$x = \frac{12 \times \cancel{160}^{20}}{\cancel{8}}$$

$$\therefore \quad x = ₹\,240$$

2. x and y very directly. When x = 4 then y = 48. What will be the value of x? When y = 120.

Solution:

x and y very directly

x	4	?
y	48	120

So $$\frac{x}{y} = \frac{4}{48} = \frac{x}{120}$$

$$x = \frac{\cancel{120}^{10} \times \cancel{4}}{\cancel{48}_{\cancel{12}}}$$

$$\therefore \quad x = 10$$

3. 35 persons can complete a work in 12 days. If 15 more persons are appointed. Find the number of days taken to complete the work.

Solution:

No of persons:	x	35	35 + 15
No of days:	y	12	y

Clearly if number of persons are more the number of days taken to complete a task is less.

$\therefore$ It is a inverse variations.

$\therefore \quad x \times y = 35 \times 12 = 60y$

$$\frac{\cancel{35} \times \cancel{12}^{7}}{\cancel{60}_{5}} = y$$

$\therefore \quad y = 7$ days.