

Que → Find the value of x for which the points $(x, -1)$, $(2, 1)$ and $(4, 5)$ are collinear.

Solution → In this problem we have to use the condition of collinearity of three points,

let, $A(x, -1)$, $B(2, 1)$, $C(4, 5)$

$$\text{slope of } AB = \frac{1 - (-1)}{2 - x} = \frac{2}{2 - x}$$

$$\text{slope of } BC = \frac{5 - 1}{4 - 2} = \frac{4}{2} = 2.$$

$$\text{slope of } AB = \text{slope of } BC.$$

$$\rightarrow \frac{2}{2 - x} = 2,$$

$$\rightarrow 2 = 2(2 - x)$$

$$\rightarrow 1 = 2 - x$$

$$\rightarrow x = 1$$