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# AI1110 ASSIGNMENT 1

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## ICSE class 10 paper 2019

**Q3** (b): M and N are two points on the X axis and Y axis respectively. P(3,2) divides the line segment MN in the ratio 2:3.

Find:

(i)the coordinates of M and N

(ii)the slope of MN.

## **Solution:**

Given,

M and N are two points on X and Y axes respectively.

Let M be (a,0) and N be (0,b)

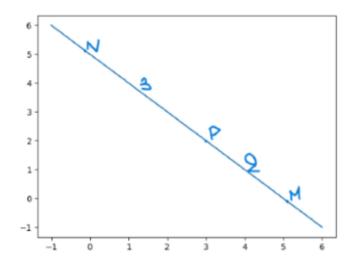
P divides MN in the ratio 2:3.

According to Section formula,

$$P \equiv \left(\frac{2(0) + 3(a)}{2 + 3}, \frac{2(b) + 3(0)}{2 + 3}\right)$$
$$P \equiv \left(\frac{3a}{5}, \frac{2b}{5}\right)$$

But we have,

$$P \equiv (3,2)$$



Therefore,

$$\frac{3a}{5} = 3$$

$$\Rightarrow a = 5$$

$$\frac{2b}{5} = 2 \quad (1)$$

$$b = 5 \quad (2)$$

(i)
$$M \equiv (5,0)$$
 and  $N \equiv (0,5)$ 

(ii) Slope of MN = 
$$\frac{5-0}{0-5}$$
$$= -1$$