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Course : MAT 102

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Assignment

(1) If A and B are points $(5, 3)$ and $(15, -7)$ respectively. Find the co ordinates of the point which divides AB externally at the ratio 3:1

Solution

$$A = (5, 3)$$

$$B = (15, -7)$$

$$\text{using } y = \frac{ly_1 - ky_2}{l - k}$$

$$A = (x_1, y_1) = y_1 = 3$$

$$B = (x_2, y_2) = y_2 = -7$$

$$\text{Point P} = (x, y) = y = x$$

$$x = \frac{l(3) - k(-7)}{l - k}$$

$$x(l - k) = 3l + 7k$$

$$xl - xk = 3l + 7k$$

$$-xk - 7k = 3l - xl \quad \dots \quad (1)$$

$$-xk - 7k = 3k \quad \dots \quad (1)$$

$$3l - xl = l$$

$$-xk - 7k = 3k$$

$$k(-x - 7) = 3k$$

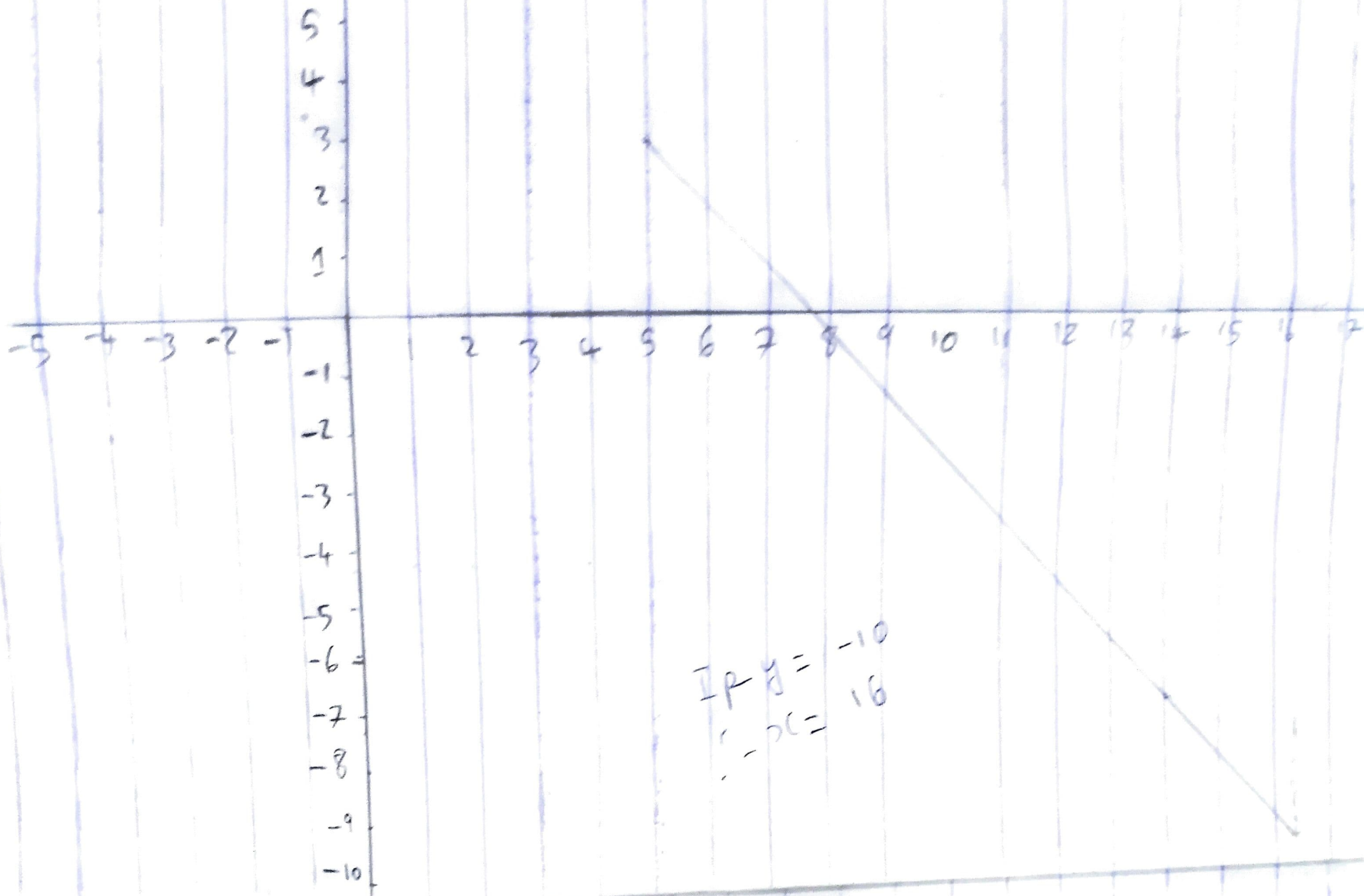
$$-x - 7 = 3$$

$$-x = 3 + 7$$

$$-x = 10$$

$$x = -10$$

$$y = -10$$



$$\begin{aligned} \text{IP } y &= -10 \\ \text{PC} &= 16 \end{aligned}$$