1.5.38

AI24BTECH11019-KOTHA PRATHEEK REDDY

Question:
Find the ratio in which the Y axis divides the line segment joining the points $(6,-4)$ and $(-2,-7)$. Also find the point of intersection.

Solution:

Let A=$(6,-4)$ and B=$(-2,-7)$

Let the line segment joining A and B meet the Y-axis at $C\,(0,y)$

$$C = \frac{kA + B}{k+1} \tag{0.1}$$

equating the x coordinates, we get

$$0 = \frac{6k-2}{k+1} \tag{0.2}$$

$$k = \frac{1}{3} \tag{0.3}$$

$$y = \frac{-4k-7}{k+1} \tag{0.4}$$

On solving we get,

$$y = -\frac{25}{4} \tag{0.5}$$

$$C = \left(0, -\frac{25}{4}\right) \tag{0.6}$$

Point	Coordinates
A	(6,-4)
B	(-2,-7)
C	$(0,-\frac{25}{4})$

TABLE 0: Coordinates

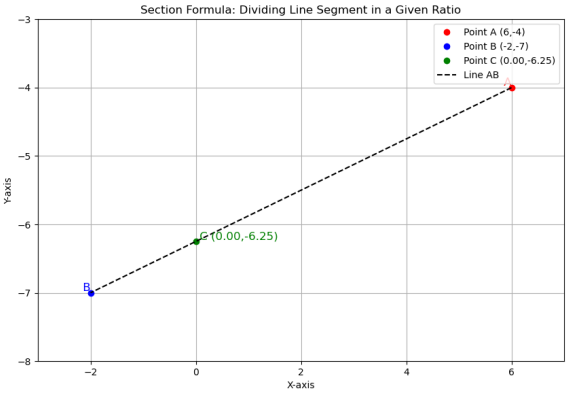

Fig. 0.1: Line joining A and B