

1.4.13

EE24BTECH11021 - Eshan Ray

Question:

If a and b are the position vectors of A and B , respectively, find the position vector of a point C in BA produced such that $BC = 1 \cdot 5BA$.

Solution: Point C divides BA in the ratio $3:1$ externally,
 \therefore using section formula,

$$\Rightarrow C = \frac{kA - B}{k - 1} \quad \left(\text{where, } k = \frac{3}{1} \right) \quad (1)$$

$$\Rightarrow C = \frac{3A - B}{3 - 1} \quad (2)$$

$$\Rightarrow C = \frac{3a - b}{2} \quad (3)$$

$$\Rightarrow C = 1 \cdot 5a - 0 \cdot 5b \quad (4)$$

So, position vector of C is $1 \cdot 5a - 0 \cdot 5b$.

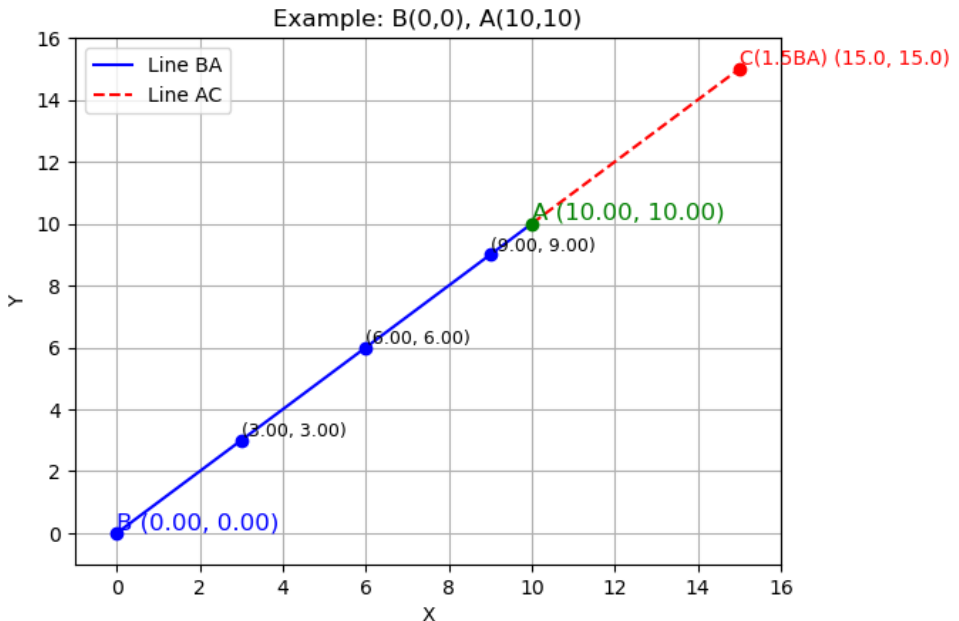


Fig. 0. Coordinates of C