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 = 1.5BA.

Solution: Point C divides BA in the ratio 3: 1 externally,

: using section formula,

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

$$\implies C = \frac{3A - B}{3 - 1} \tag{2}$$

$$\implies C = \frac{3a - b}{2} \tag{3}$$

$$\implies C = 1 \cdot 5a - 0 \cdot 5b \tag{4}$$

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

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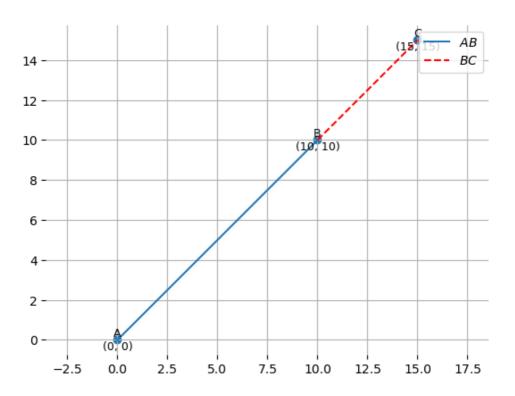


Fig. 0. A(0,0) and B(10,10)