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 $BC = 1.5BA$.
Solution: Point C divides BA in the ratio $3:1$ externally,
$\therefore$ using section formula,

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

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

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

$$C = 1.5a - 0.5b \tag{4}$$

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

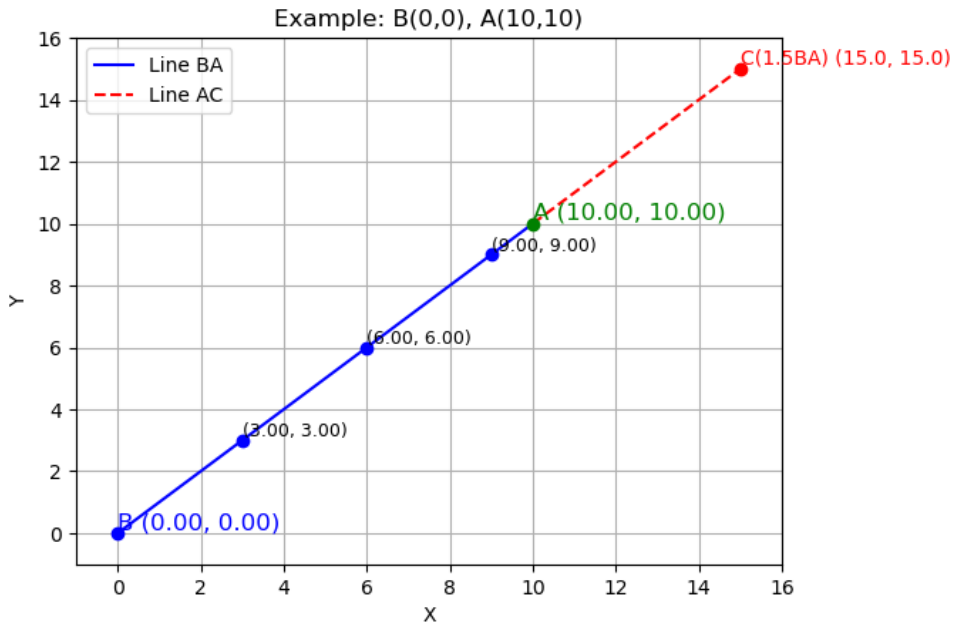

Fig. 0. Coordinates of C