

# 1.4.13

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## 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,

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

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

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

$$C = 1.5a - 0.5b$$

So, position vector of  $C$  is  $1.5a - 0.5b$ .

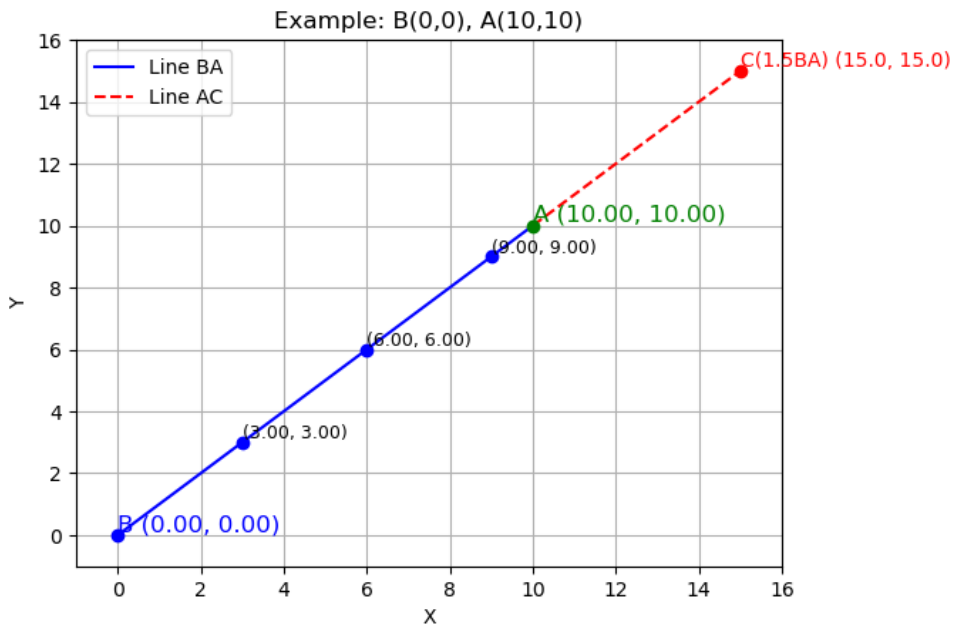


Fig. 0. Coordinates of C