

BILANGAN ADEDOLOPO ABDULFATTAH
MAR OKUNHOLA
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$A(5, 3)$ $B(15, -7)$ $C(x, y)$
External division in the ratio 3:1

Solution

$x_1 = 5, y_1 = 3, x_2 = 15, y_2 = -7$ $x = ?$ $y = ?$ $m = 3, n = 1$

$$x = \frac{mx_2 - nx_1}{m - n}, \quad y = \frac{my_2 - ny_1}{m - n}$$

$$\therefore x = \frac{3(15) - 1(5)}{3 - 1}, \quad y = \frac{3(-7) - 1(3)}{3 - 1}$$

$$x = \frac{45 - 5}{2}, \quad y = \frac{-21 - 3}{2}$$

$$x = \frac{40}{2}, \quad y = \frac{-24}{2}$$

$$x = 20, \quad y = -12$$

$$\therefore C(x, y) = (20, -12)$$

The coordinate of $C = (20, -12)$