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MAT102

19/BNGOS/007

Mechanics

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Question 1

Solution

A (5, 3) B(15, -7)

Coordinates of the external division in the ratio 3:1

$$x_1 = 5, y_1 = 3, x_2 = 15, y_2 = -7$$

$$m = 3, n = 1$$

$$x = \frac{m x_2 - n x_1}{m - n} = \frac{3(15) - 1(5)}{3 - 1} = \frac{40}{2} = 20$$

$$y = \frac{m y_2 - n y_1}{m - n} = \frac{3(-7) - 1(3)}{3 - 1} = \frac{-24}{2} = -12$$

Coordinates, C of the external division of A and B in the ratio 3:1 is

$$C(20, -12)$$