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MAT 102 ASSIGNMENT

MECHATRONICS ENGINEERING

1. If A & B are points (5, 3) & (15, -7) respectively. Find the coordinates of the point which divides AB externally in ratio 3:1

SOLN

$$\text{Let } x_1 = 5 \quad y_1 = 3$$

$$x_2 = 15 \quad y_2 = -7$$

$$m:n = 3:1$$

$$P = \left( \frac{mx_2 + nx_1}{m-n}, \frac{my_2 + ny_1}{m-n} \right)$$

$$= \left( \frac{3(15) + 1(5)}{3-1}, \frac{3(-7) + 1(3)}{3-1} \right)$$

$$= \left( \frac{45+5}{2}, \frac{-21+3}{2} \right)$$

$$= \left( \frac{50}{2}, \frac{-18}{2} \right)$$

$$= (25, -9)$$