

MAT 102 7th April 2020

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MECHATRONICS ENGINEERING

# 19 / ENG 05 / 014

1. If A and B are the points  $(5, 3)$  and  $(15, -2)$  respectively, find the coordinates of the point which divides AB externally in the ratio 3:1

$$x(L - k) = Lx_2 - kx_1 \quad x_1 = 5 \quad x_2 = 15$$

~~y(L - k)~~  $L = 3 \quad k = 1$

$$x(3 - 1) = 3(15) - 1(5)$$
$$2x = 45 - 5$$
$$2x = 40$$
$$x = 20$$

$$y(L - k) = Ly_2 - ky_1 \quad y_2 = -2 \quad y_1 = 3$$

$$y(3 - 1) = 3(-2) - 1(3)$$
$$2y = -6 - 3$$
$$2y = -9$$
$$y = -4.5$$

$$(x, y) = (20, -12)$$