

OMNESCHMAXWELL

19/EMG04/046

MAT102 ASSIGMENT.

- 1) $A(6, -5) - (x, y)$
 $B(-2, 1) - (x_1, y_1)$
 $C(0, 3) - (x_2, y_2)$

$$S = \frac{L(-4) + k(14)}{L+k}$$

$$5L + 5k = -4L + 14k$$

$$9L = 9k$$

$$L = k$$

∴ ratio of $k:L = 1:1$

$$\overline{AB} = \sqrt{(-2-6)^2 + (1-(-5))^2}$$

$$\overline{AB} = \sqrt{100} = 10$$

$$\overline{AC} = \sqrt{(0-6)^2 + (3-(-5))^2}$$

$$= \sqrt{100} = 10$$

$$\overline{BC} = \sqrt{(0-(-2))^2 + (3-1)^2}$$

$$\overline{BC} = \sqrt{8} = 2.8$$

Since $\overline{AB} = \overline{AC}$, The triangle is isosceles.

b) External division

$$(x_1, y_1) = (5, -3)$$

$$(x_2, y_2) = (-4, 9)$$

$$(x, y) = (14, -15)$$

$$x = \frac{L(x_1) - k(x_2)}{L-k}$$

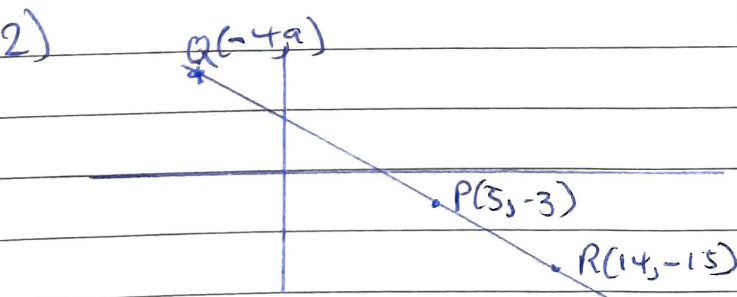
$$14 = \frac{L(5) - k(-4)}{L-k}$$

$$14L + 14k = 5L + 4k$$

$$9L = 18k$$

$$L = 2k$$

∴ ratio of $k:L = 2:1$



a) Internal division

$$(x_1, y_1) = (-4, 9)$$

$$(x_2, y_2) = (14, -15)$$

$$(x, y) = (5, -3)$$

$$x = \frac{L(x_1) + k(x_2)}{L+k}$$