

IFEOLUWA PROMISE
19/ENG02/021
COMPUTER ENGINEERING.
MAT 102.

1. Show that the points $A(6, -5)$, $B(-2, 1)$, $C(0, 3)$ form an isosceles triangle.

2. If P, Q and R are points $(s, -3)$, $(-4, 9)$ and $(14, -15)$ respectively. Find the Ratio when (s, p) divides QR . $R \div PQ$.

1) $A(6, -5)$, $B(-2, 1)$, $C(0, 3)$

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

$$= \sqrt{8^2 + 6^2}$$

$$= \sqrt{64 + 36}$$

$$= 10 \text{ Sq. unit.}$$

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

$$= \sqrt{8^2 + 6^2}$$

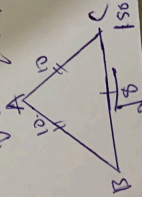
$$= 10 \text{ Sq. unit.}$$

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

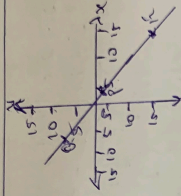
$$= \sqrt{6^2 + 8^2}$$

$$= \sqrt{36 + 64}$$

$$= \sqrt{100} \text{ Sq. unit} = 10 \text{ Sq. unit.}$$



2)



Internal division $\Rightarrow (x, y) = \frac{x_1 + ky_2}{1+k}$

$$\frac{y_1 + ky_2}{1+k}$$

Using x

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

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

$$9L = 9k$$

The Ratio which P divides QR is 1:1.

2) External Division $\Rightarrow (x, y) = \frac{x_1 - ky_2}{1-k}$

$$\frac{y_1 - ky_2}{1-k}$$

$$-15 = \frac{9L - 15k}{1-k}$$

$$-15L - 15k = 9L + 3k$$

$$-15L - 9L = 3k + 15k$$

$$-24L = 18k$$

$$-4L = 3k$$

$$4L = 3k$$

$$L/k = 3/4 \therefore L/k = 4/3$$

The ratio that P divides PQ = 4