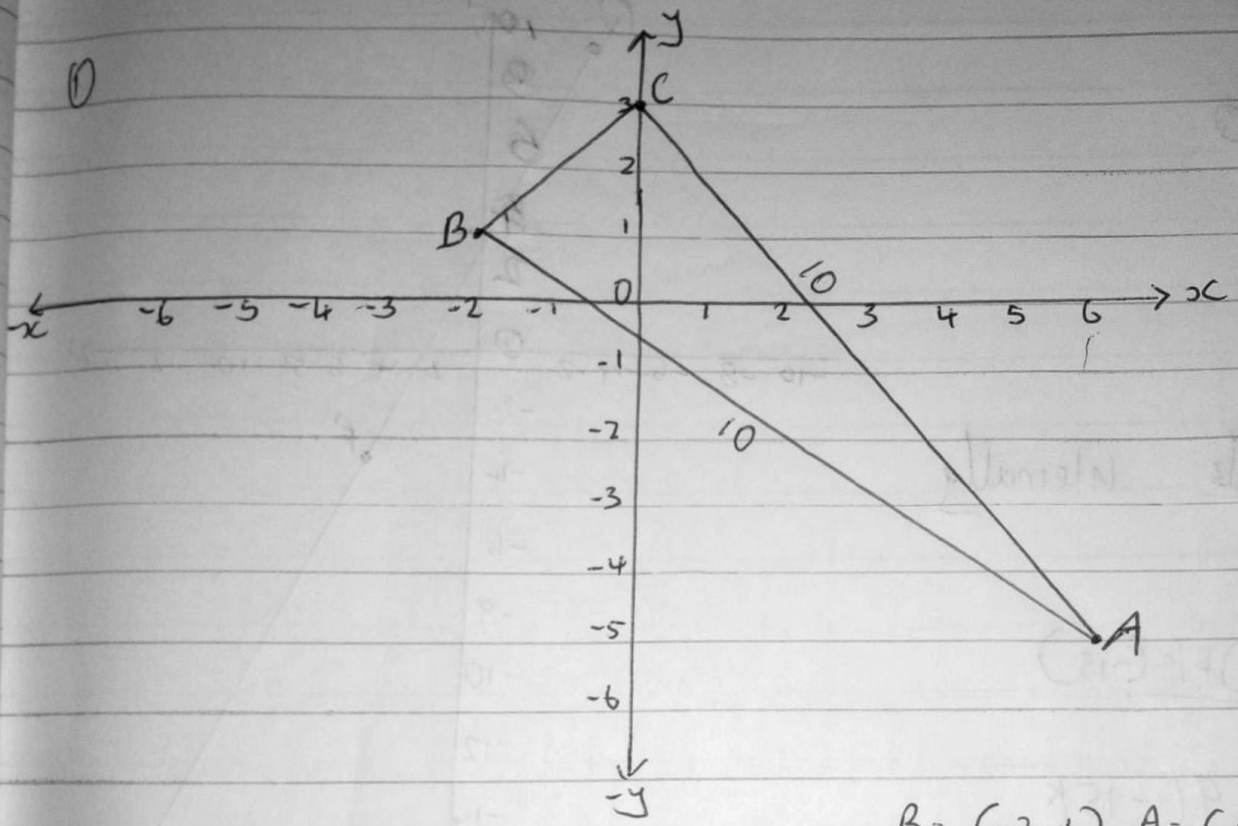
Oyeleye Ibrahim-Niass Oluwaseyi
Elect/Elect Engineering 19/ENG04/052
MAT 102

1



x_3, y_3
$C = (0, 3)$

$B = (-2, 1)$ $A = (6, -5)$
x_2, y_2 x_1, y_1

$\overline{AB}$ ~~BA~~ $= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

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

AB ~~BA~~ $= \sqrt{-8^2 + 6^2}$

$\overline{AB}$ ~~BA~~ $= \underline{\underline{10}}$

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

$\overline{BC} = \sqrt{2^2 + 2^2} = \sqrt{8}$

$\overline{AC}$ ~~CA~~ $= \sqrt{(x_3 - x_1)^2 + (y_3 - y_1)^2}$

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

$\overline{AC}$ ~~CA~~ $= \sqrt{6^2 + 8^2}$ $\sqrt{6^2 + 8^2}$

$AC = \underline{\underline{10}}$

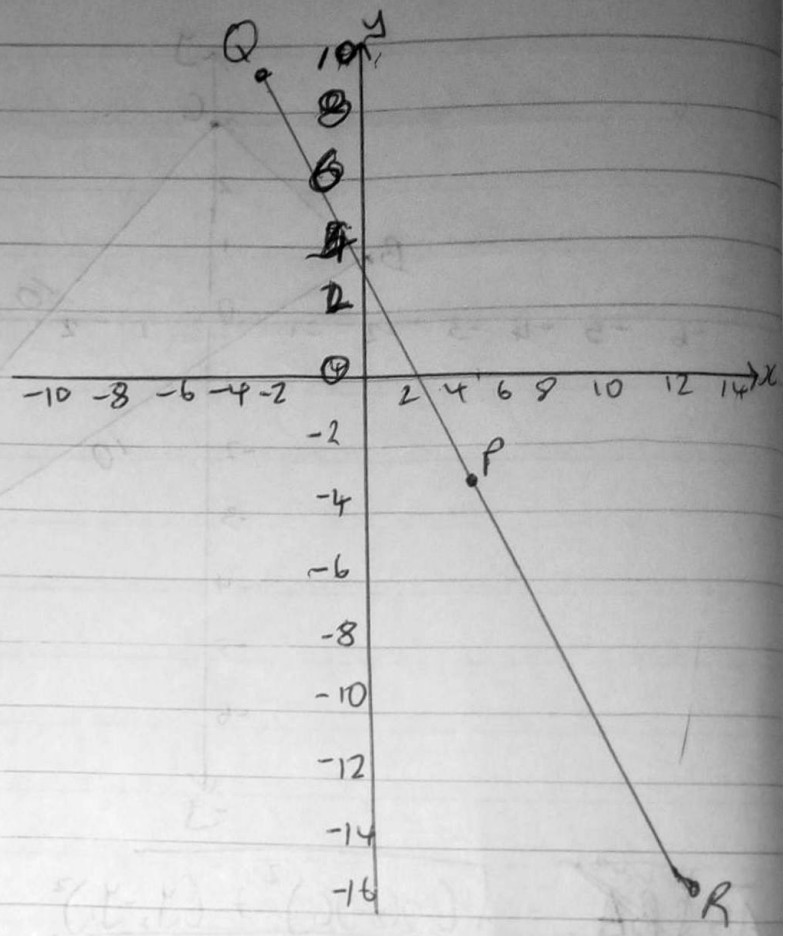
$\overline{AC} = \overline{AB} = 10$ ∴ They form an isosceles triangle.

2) $x_1 = 5$ $x_2 = -4$ $x_3 = 14$ $y_1 = -3$ $y_2 = 9$ $y_3 = -15$

$P = (5, -3)$ $Q\ (-4, 9)$ $R\ (14, -15)$

ⓐ P / QR

ⓑ R / PQ



ⓐ P/QR

$$y = \frac{l y_2 + k y_3}{l + k}$$ internally

$$-3 = \frac{l(9) + k(-15)}{l + k}$$

$$-3l - 3k = 9l - 15k$$

$$-12l = -12k$$

$$12l = 12k$$

$$\frac{l}{k} = \frac{1}{1}$$

$$l : k = 1 : 1$$

b) R/PQ externally

$$x = \frac{l x_1 - k x_2}{l - k}$$

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

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

$$9l = 18k$$

$$l = 2k$$

$$\frac{k}{l} = \frac{2}{1}$$

$$k : l = 2 : 1$$