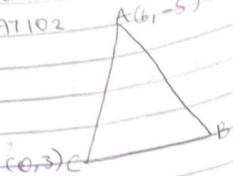
Ogenyi Emmanuella Ori
19/ENG02/039
MAT 102

1



AB = $x_1 = 6$ $x_2 = -2$ $y_1 = -5$ $y_2 = 1$

distance between A and B = $\sqrt{(x_2-x_1)^2 + (y_2-y_1)^2}$

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

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

$= \sqrt{64+36}$

$= 10$

distance between BC = $\sqrt{}$ $x_1 = -2$ $x_2 = 0$, $y_1 = 1$ $y_2 = 3$

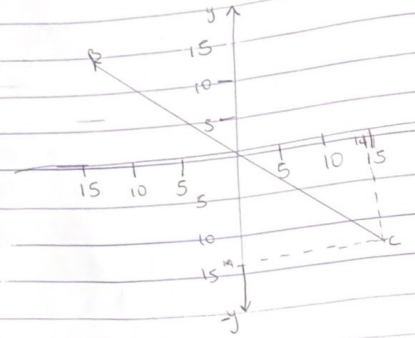
$= \sqrt{(0-2)^2 + (3-1)^2}$

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

$= \sqrt{8}$

Since its an isosceles triangle meaning both 2 sides are equal and one side is not AB = AC = 10

2.)



a.) P divides QR

$(x_1, y_1) = Q$ $(x_2, y_2) = R$

$(x, y) = P$ $x_1 = -4$ $x_2 = 14$ $x = 8$

Using $x = \frac{Lx_1 + Kx_2}{L+K}$

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

$5(L+K) = -4L + 14K$

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

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

$9L = 9K$

ratio of K:L = 1:1

b.) R divides PQ

$(x_1, y_1) = (5, -3)$ $(x_2, y_2) = (-4, 9)$ $y = -15$

$y = \frac{Ly - Ky_2}{L-K}$

$-15 = \frac{(-3)L - K(9)}{L-K}$

$-15(L-K) = -3L - 9K$

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

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

$-12L = -24K$

ratio of K:L = 2:1