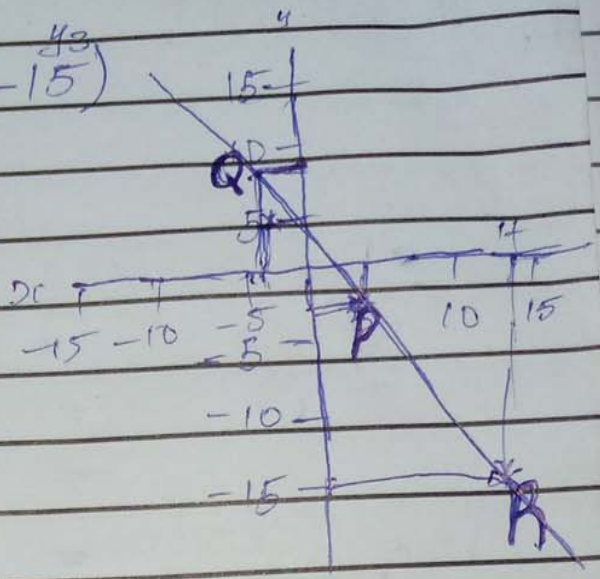
$x_1\ y_1 \quad x_2\ y_2 \quad x_3\ y_3$

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



$(x_1, y_1) = Q \quad (x_2, y_2) = R \quad (x, y) = P$

P divides QR internally

$$x = \frac{lx_1 + kx_2}{l+k}$$

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

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

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

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

$$9l = 9k$$

$$l = k$$

ratio $K:L = 1:1$

R divides PQ externally

$$x = \frac{lx_1 - kx_2}{l-k}$$

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

$$14(l-k) = l(5) - k(-4)$$

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

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

$$9l = 18k$$

$$l = 2k$$

ratio $K:L = 2:1$

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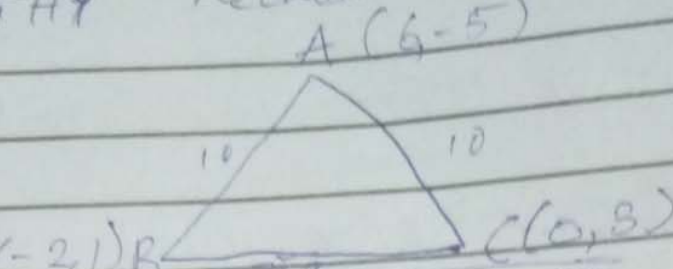
A(6, -5)
B(-2, 1)
C(0, 3)



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

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

$= \sqrt{64+36}$

$= \sqrt{100}$

$= 10$

Line BC (BC) $= \sqrt{(x_2-x_1)^2+(y_2-y_1)^2}$

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

$= \sqrt{4+4}$

$= \sqrt{8}$

$= 2\sqrt{2}$

Line AC (AC) $= \sqrt{(x_2-x_1)^2+(y_2-y_1)^2}$

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

$= \sqrt{36+64}$

$= \sqrt{100}$

$= 10$

It forms an Isosceles triangle since only two sides are equal in length