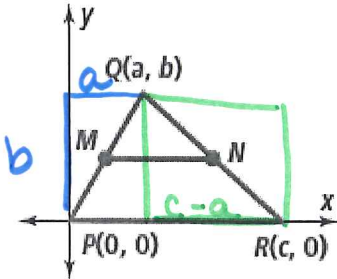


Practice Triangle Coordinate Geometry Day 2

7. M and N are midpoints of QP and QR respectively.
a.) Find the coordinates of midpoints M and N.



$$M: (.5a, .5b) \quad N: (.5(a+c), .5b)$$

- b.) Is $MN \parallel PR$? Why or why not. SHOW MATH!

From Day 1 HW!

- c.) Is $\triangle PQR$ isosceles? Why or why not. SHOW MATH!

$$a^2 + b^2 = PQ^2$$

$$\sqrt{a^2 + b^2} = PQ$$

$$b^2 + (c-a)^2 = QR^2$$

$$\sqrt{b^2 + (c-a)^2} = QR$$

$$PR = c \quad \text{cont'd}$$

No \cong sides $\therefore \triangle PQR$ is Not isosceles

- d.) Is $\triangle MQN$ a right triangle? Why or why not. SHOW MATH!

$$\text{slope } PQ = \frac{b}{a}$$

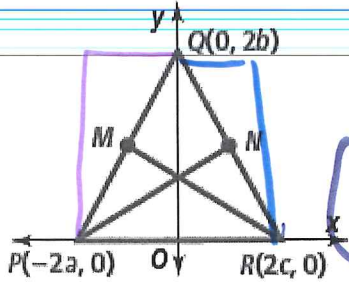
$$\text{slope } QR = -\frac{b}{c-a}$$

$$\text{slope } PR = \frac{0}{c} = 0$$

NO \perp slopes $\therefore \triangle PQR$ is Not a Right Triangle

8. M and N are midpoints of QP and QR respectively.

a.) Find the coordinates of midpoints M and N.



$$\left(\frac{2c-0}{2}, \frac{0+2b}{2}\right) = \left(\frac{2c}{2}, \frac{2b}{2}\right)$$

$$\left(\frac{-2a+0}{2}, \frac{0+2b}{2}\right)$$

$$M: (-a, b) \quad N: (c, b)$$

$$\left(\frac{-2a}{2}, \frac{2b}{2}\right) = (-a, b)$$

b.) Is $\triangle PQR$ isosceles? Why or why not. SHOW MATH!

$$PR = 2a + 2c$$

$$(2a)^2 + (2b)^2 = PQ^2$$

$$\sqrt{4a^2 + 4b^2} = PQ$$

$$(2c)^2 + (2b)^2 = QR^2$$

$$\sqrt{4c^2 + 4b^2} = QR$$

No \cong sides $\therefore \triangle PQR$ is
NOT an isosceles triangle

c.) Is $\triangle PQR$ a right triangle? Why or why not. SHOW MATH!

$$\text{Slope } PR = \frac{0}{2a+2c} = 0$$

$$\text{Slope } PR = 0$$

$$\text{Slope } RQ = \frac{-2b}{2c} = -\frac{b}{c}$$

$$\text{Slope } RQ = -\frac{b}{c}$$

$$\text{Slope } PQ = \frac{2b}{2a} = \frac{b}{a}$$

$$\text{Slope } PQ = \frac{b}{a}$$

No \perp slopes $\therefore \triangle PQR$ is NOT a right \triangle