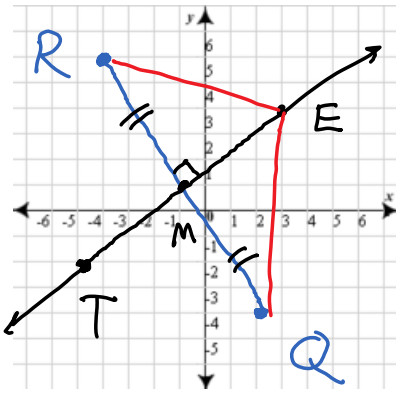
08-25-14 Warmup/Lesson
(no journals on Mondays)

Consider the points R(-4, 5) and Q(2, -3). x y x y



1. Plot the points.

2. What is the distance between these points? Use the distance formula and round your answer to the nearest thousandth if necessary.

$d = \sqrt{(\text{diff } x)^2 + (\text{diff } y)^2}$

$d = \sqrt{(6)^2 + (8)^2} = \sqrt{36+64} = \sqrt{100} = 10$

3. What is the slope of $\overline{RQ}$? Show work.

$\text{Slope} = \frac{\text{rise}}{\text{run}} = \frac{\text{vertical change}}{\text{horizontal change}} = \frac{5 - -3}{-4 - 2} = \frac{5+3}{-6} = \frac{8}{-6} = -\frac{4}{3}$

4. Point M is the midpoint of $\overline{RQ}$. What are M's coordinates? Show work.

midpoint – Middle = Average (Avg x, Avg y)

$\left(\frac{-4+2}{2}, \frac{5+-3}{2}\right) = \left(\frac{-2}{2}, \frac{2}{2}\right) \Rightarrow (-1, 1)_M$

5. What is the slope of a line parallel to $\overline{RQ}$? Explain.

parallel → same slope, so $-4/3$

6. What is the slope of a line perpendicular to $\overline{RQ}$? Explain.

⊥ → opposite reciprocal $\Rightarrow -\frac{4}{3} \Rightarrow \frac{3}{4}$

Point-Slope Form of a line

(Algebra I)

If m is the slope of a line, and (x_1, y_1) is any point on that line, then:

$$y - y_1 = m(x - x_1)$$

is the equation of that line in **point-slope form.**

7. $\overleftrightarrow{ET}$ is the perpendicular bisector of $\overline{RQ}$. What is the equation for $\overleftrightarrow{ET}$ in point-slope form?

Slope of $\overleftrightarrow{ET} = 3/4$ Pt M(-1, 1)

$y - y_1 = m(x - x_1)$

$y - 1 = \frac{3}{4}(x - -1)$

$y - 1 = \frac{3}{4}(x + 1)$

Example: Point (2, -3) slope = 1/3

$y - y_1 = m(x - x_1)$

$y - -3 = \frac{1}{3}(x - 2)$

$y + 3 = \frac{1}{3}(x - 2)$

8. Consider ΔRME. Complete the statement: ΔRME ≅ ΔQME

for.