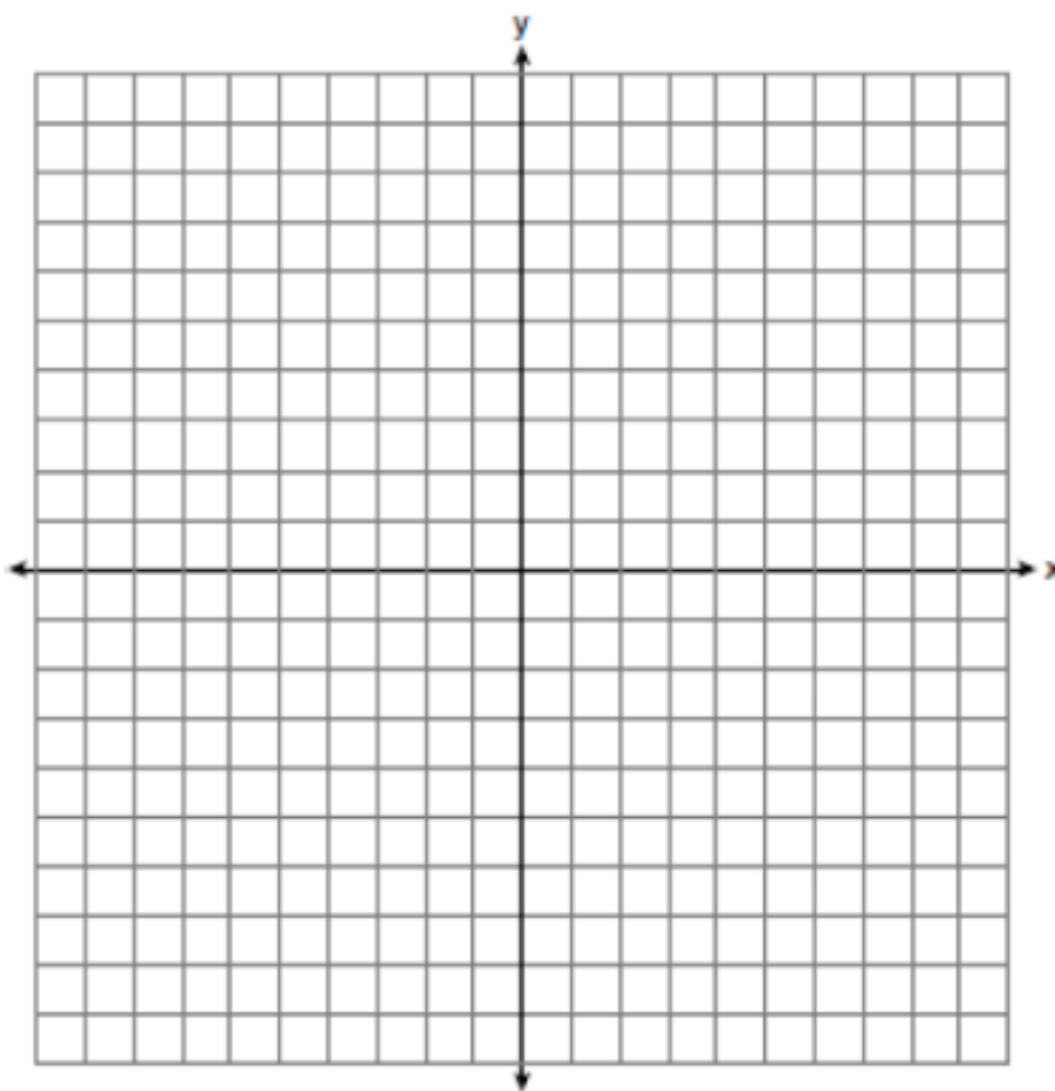**Homework Review: Tools of Geometry on the Coordinate Plane**

Midpoint and Distance

1. FG has endpoints F (–2, 3) and G (1, 1). What are the coordinates of its midpoint?

2. M is the midpoint of AB and is located at M(3, 5). A is located at A(1,2). What is the coordinate of the other endpoint, B?

3. What is the distance between points D (32, 4) and E(20, 8)?

Directed Line Segments

4. Plot the line segment XZ with endpoints X(-4,5) and Z(6,10). Point Y is on XZ such that XY:YZ is 2:3. Find the coordinates of point Y. Plot it on the grid.

Equations of Lines

Use the given information to write the equation of the line.

5. slope $\dfrac{1}{3}$ and y-intercept 4

6. What is the slope of the line perpendicular to $y = \dfrac{1}{2}x + 1$?

Parallel and Perpendicular Lines

Find the slope of LM and QR. Then determine whether LM and QR are *parallel, perpendicular,* or *neither.* Explain.
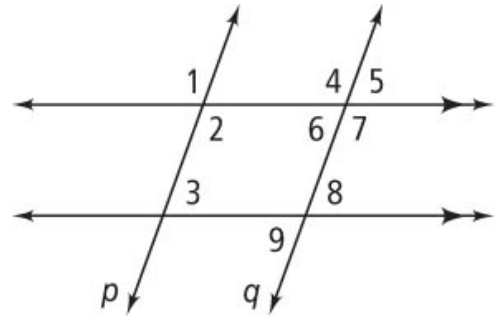
7. $L(10, 2)$, $M(6, -6)$, $Q(10, 6)$, $R(9, 4)$

8. $L(-3, 8)$, $M(2, -7)$, $Q(14, 16)$, $R(10, 4)$

Spiral Review – Two Parallel Lines cut by a Transversal

9. Name a pair of the following type of angles:

a.   Corresponding

b.   Alternate interior

c.   Vertical

d.   Same-side interior

e.   Same-side exterior

10. $m\angle 2 = 50$ and $m\angle 3 =$ _____ ?   **11.** $m\angle 4 = 100$ and $m\angle 2 =$ _____ ?

11. $m\angle 1 = 75$ and $m\angle 3 =$ _____ ?   **13.** $m\angle 5 = 110$ and $m\angle 8 =$ _____ ?