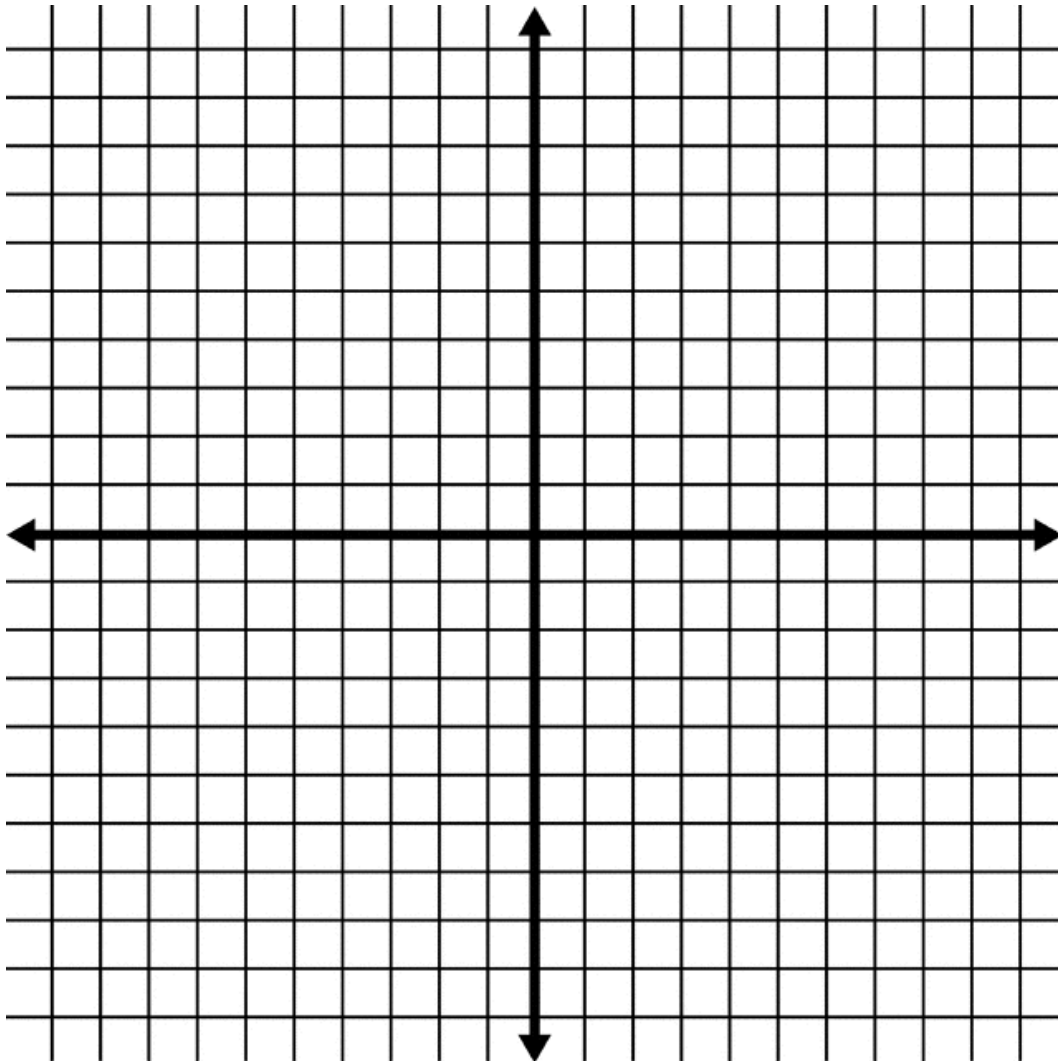


Lesson 16 & 17: Symmetry in the Coordinate Plane

Examples 2–3: Navigating the Coordinate Plane



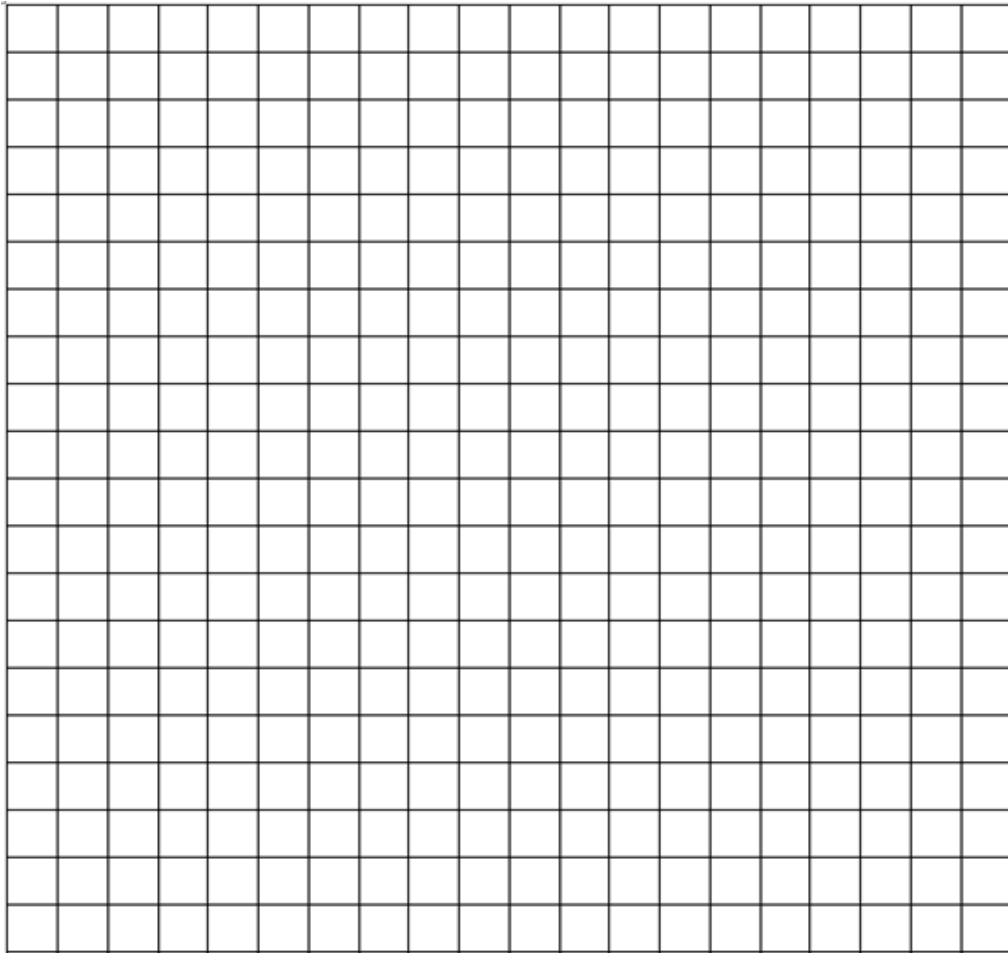
Example 1: Drawing the Coordinate Plane Using a 1: 1 Scale

Locate and label the points $\{(3,2), (8,4), (-3,8), (-2,-9), (0,6), (-1,-2), (10,-2)\}$ on the grid above.

Example 2: Drawing the Coordinate Plane Using an Increased Number Scale for One Axis

Draw a coordinate plane on the grid below, and then locate and label the following points:

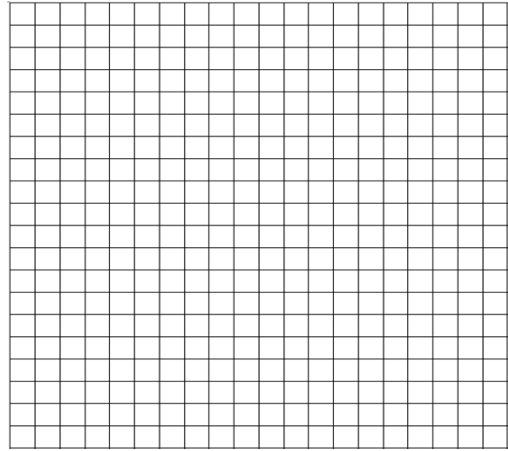
$\{(-4,20), (-3,35), (1,-35), (6,10), (9,-40)\}$.



Classwork

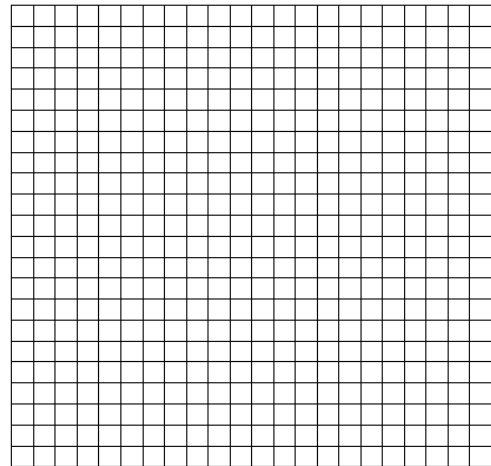
1. Label the coordinate plane, and then locate and label the set of points below.

$$\left\{ \begin{array}{l} (0.3, 0.9), (-0.1, 0.7), (-0.5, -0.1), \\ (-0.9, 0.3), (0, -0.4) \end{array} \right\}$$



2. Label the coordinate plane, and then locate and label the set of points below.

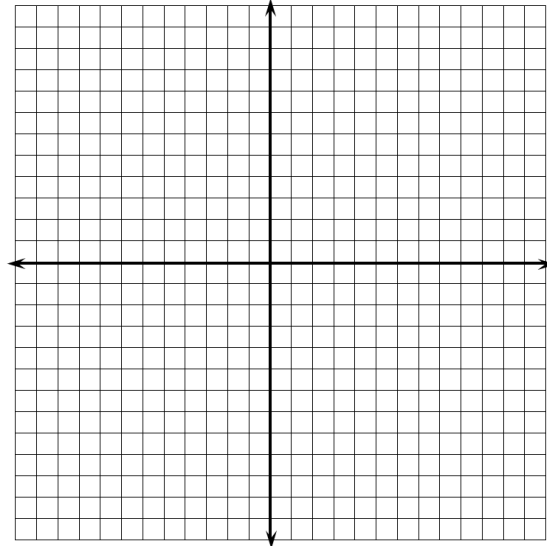
$$\left\{ \begin{array}{l} (90, 9), (-110, -11), (40, 4), \\ (-60, -6), (-80, -8) \end{array} \right\}$$



Problem Set

1. Locate a point in Quadrant IV of the coordinate plane. Label the point A , and write its ordered pair next to it.

- a. Reflect point A over an axis so that its image is in Quadrant III. Label the image B , and write its ordered pair next to it. Which axis did you reflect over? What is the only difference in the ordered pairs of points A and B ?
- b. Reflect point B over an axis so that its image is in Quadrant II. Label the image C , and write its ordered pair next to it. Which axis did you reflect over? What is the only difference in the ordered pairs of points B and C ? How does the ordered pair of point C relate to the ordered pair of point A ?
- c. Reflect point C over an axis so that its image is in Quadrant I. Label the image D , and write its ordered pair next to it. Which axis did you reflect over? How does the ordered pair for point D compare to the ordered pair for point C ? How does the ordered pair for point D compare to points A and B ?



2. Bobbie listened to her teacher’s directions and navigated from the point $(-1, 0)$ to $(5, -3)$. She knows that she has the correct answer, but she forgot part of the teacher’s directions. Her teacher’s directions included the following:

“Move 7 units down, reflect about the ___?___-axis, move up 4 units, and then move right 4 units.”

Help Bobbie determine the missing axis in the directions, and explain your answer.