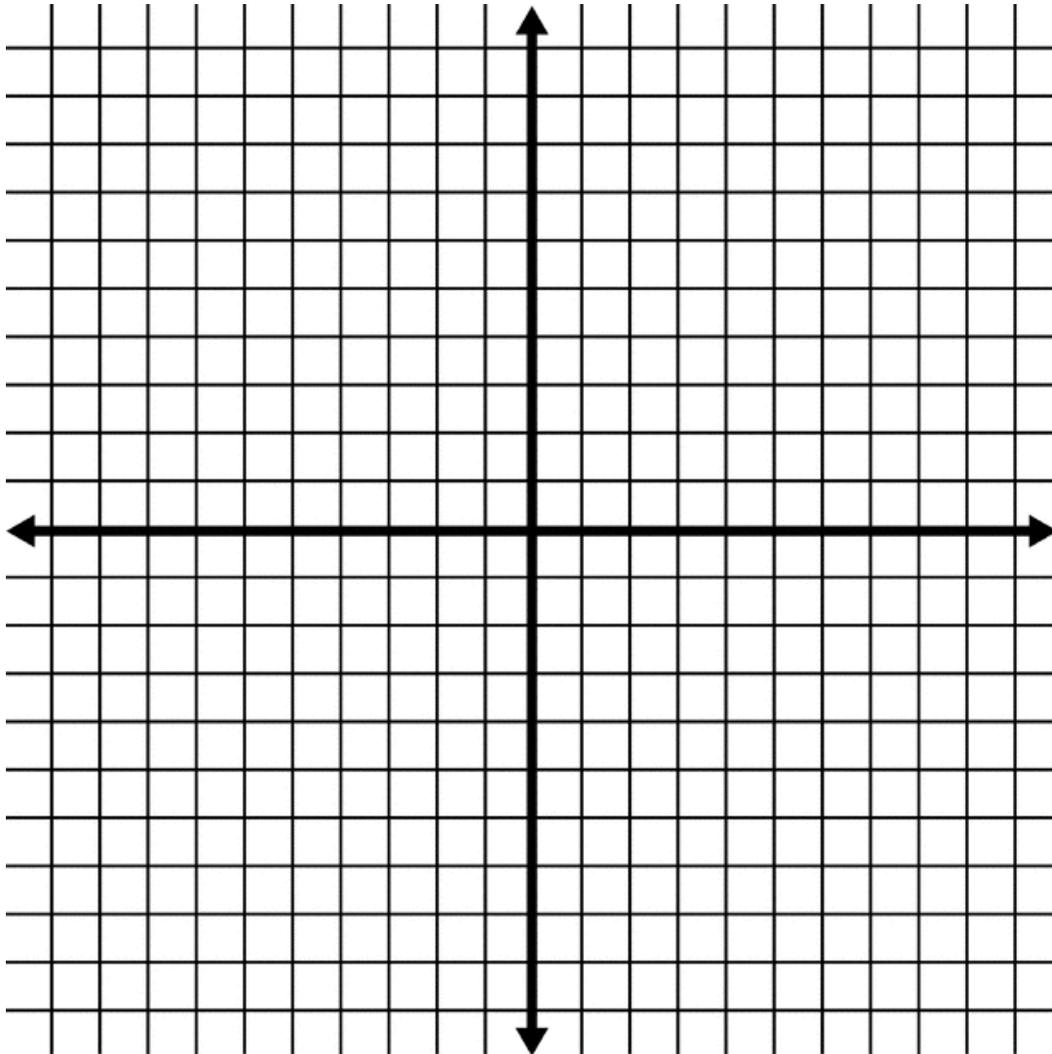


## Lesson 16 & 17: Symmetry in the Coordinate Plane

### Examples 2–3: Navigating the Coordinate Plane



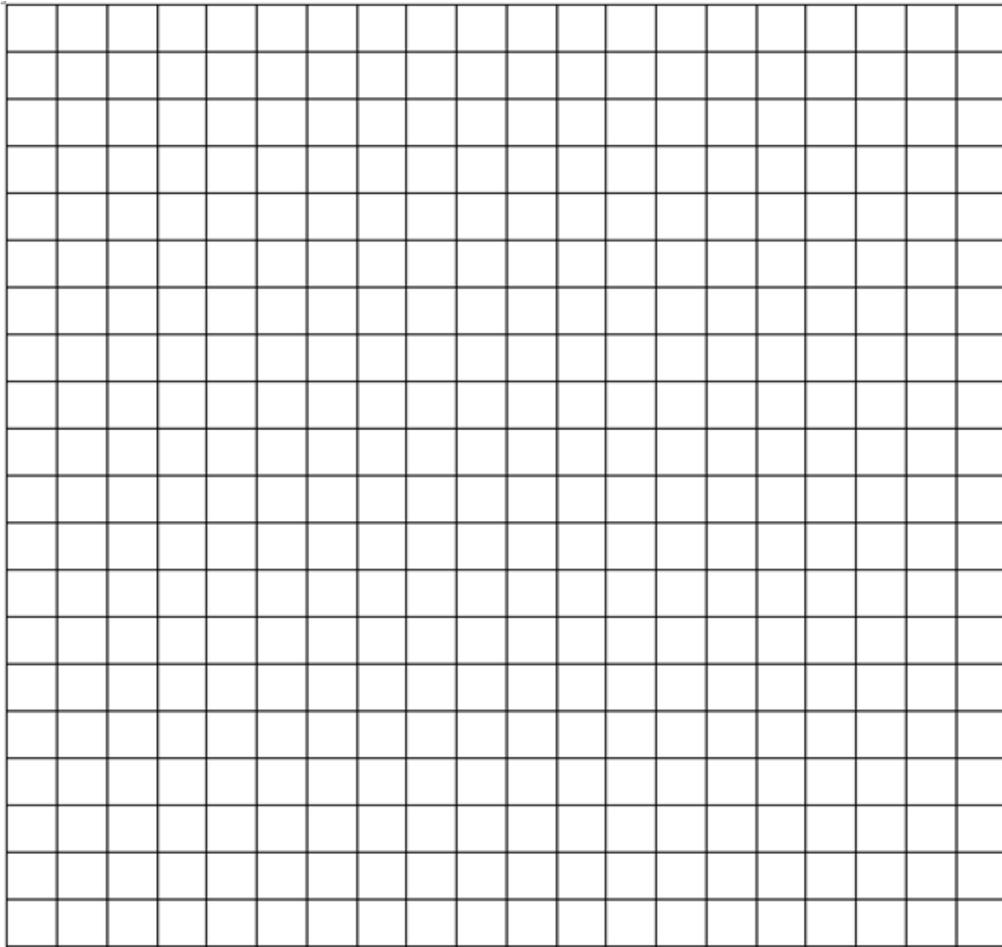
**Example 1: Drawing the Coordinate Plane Using a 1: 1 Scale**

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:

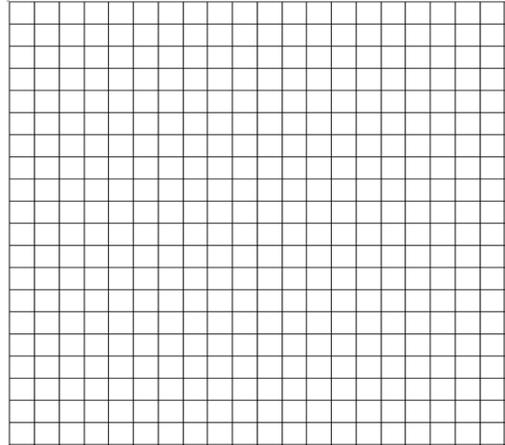
$\{(-4,20), (-3,35), (1,-35), (6,10), (9,-40)\}$ .



**Classwork**

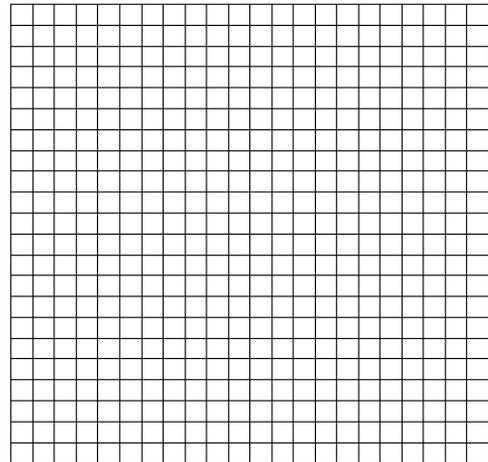
1. Label the coordinate plane, and then locate and label the set of points below.

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



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

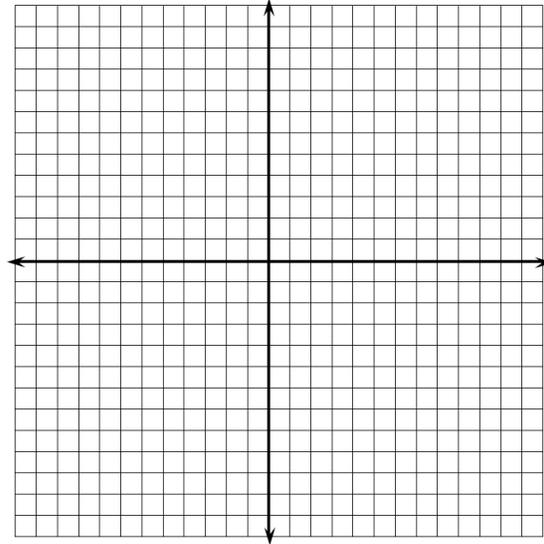
$$\left\{ \begin{array}{l} (90, 9), (-110, -11), (40, 4), \\ (-60, -6), (-80, -8) \end{array} \right\}$$



### 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.

- 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  $B$ ?
- 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  $A$ ?
- 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.