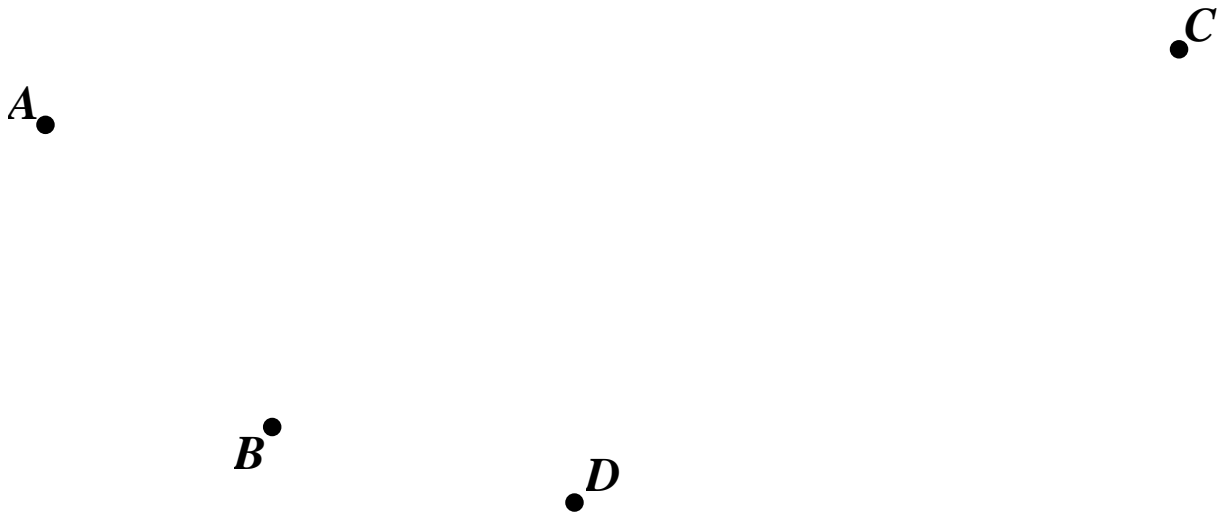**10.3b Class Activity: Finding Distance Between Two Points**

1. Using a centimeter ruler, find the distance between the following sets of points shown below. Then draw the slope triangle of each segment, measure the lengths of the rise and run, and verify that the Pythagorean Theorem holds true. 💼
   a. *A* to *B*
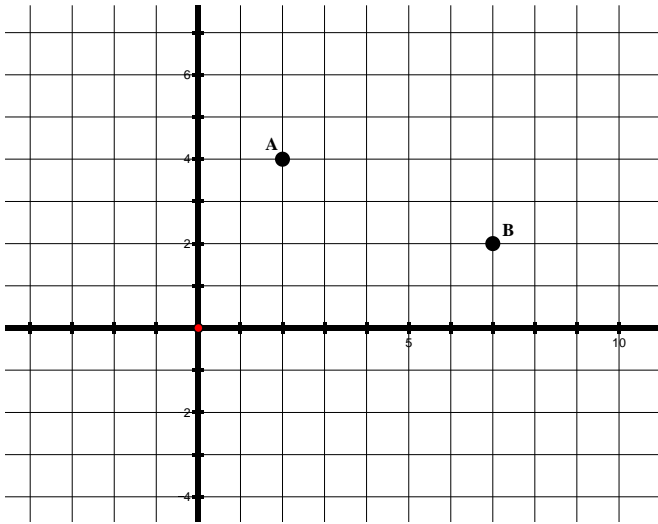   b. *B* to *C*
   c. *C* to *D*

.*C*

A.

B.

.*D*

2. Find the lengths of the segments below. Assume that each horizontal and vertical segment connecting the dots has a length of 1 unit.
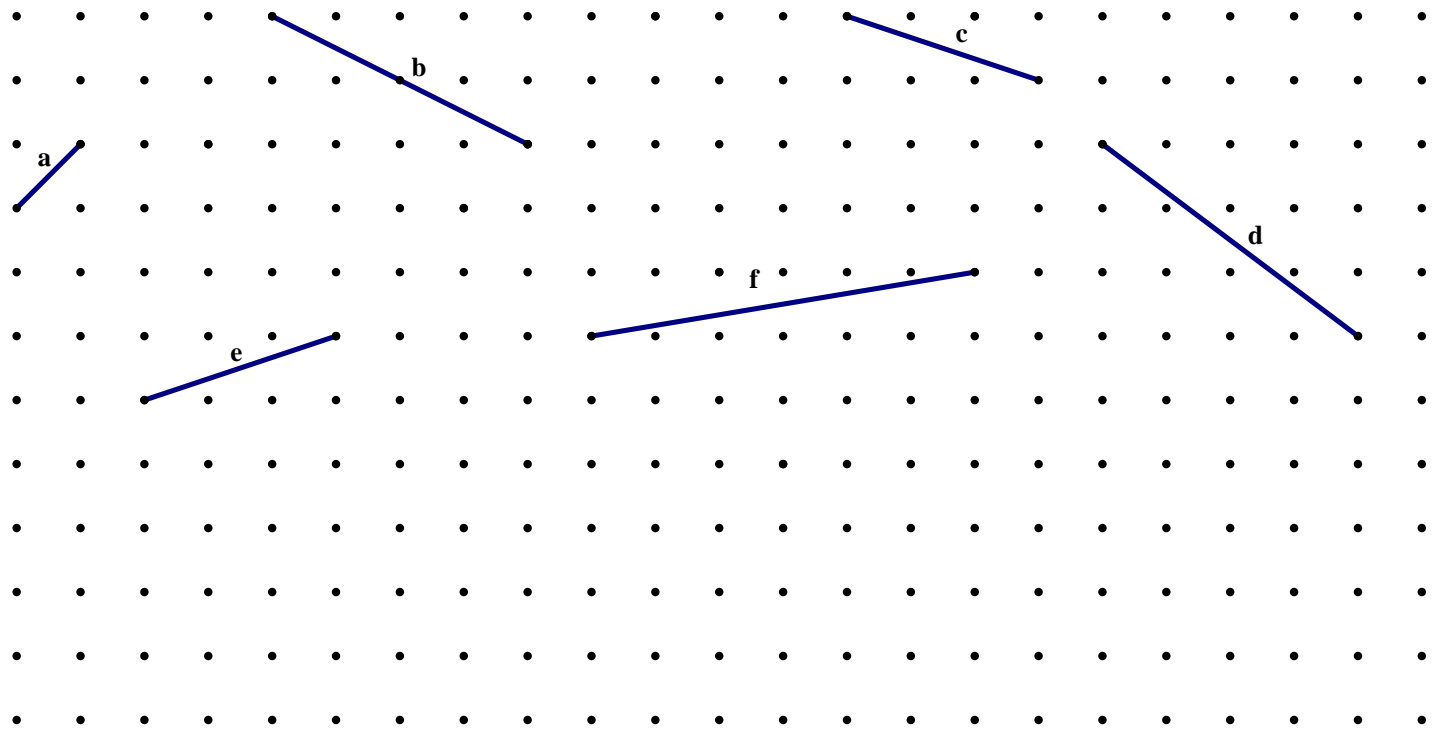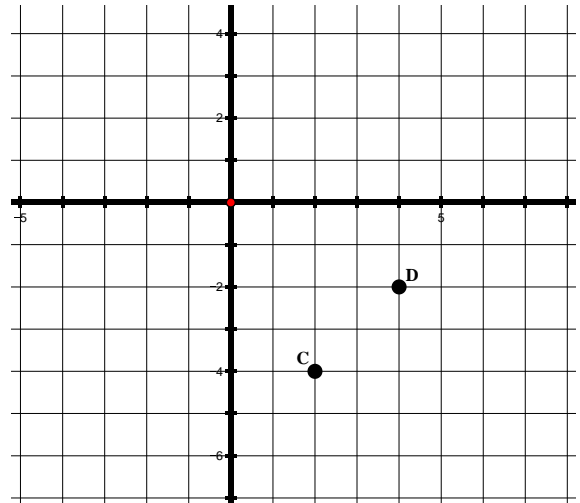
Directions: Label the coordinates of each point. Then, find the distance between the two points shown on each grid below.
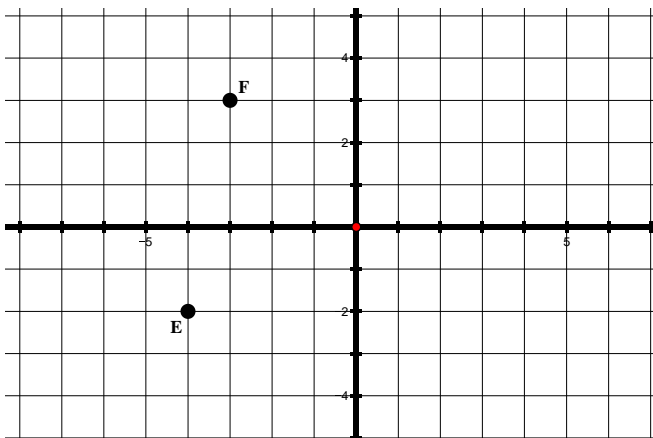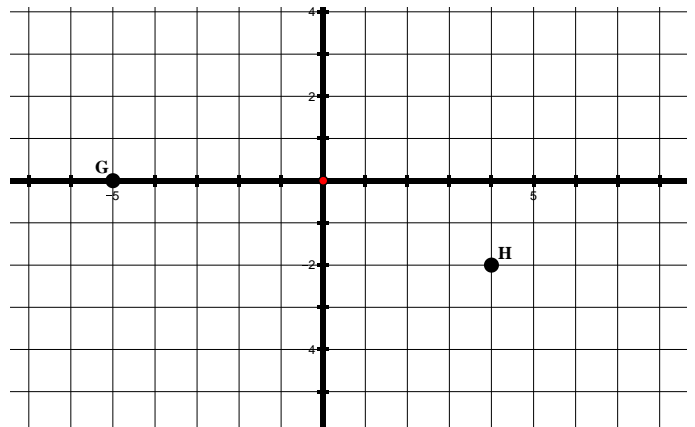
3.

4.

5.

6.

The Coordinate Distance Formula

7. Find the distance between the two points given on the graph below.

$P(100, 80)$

$Q(45, 50)$
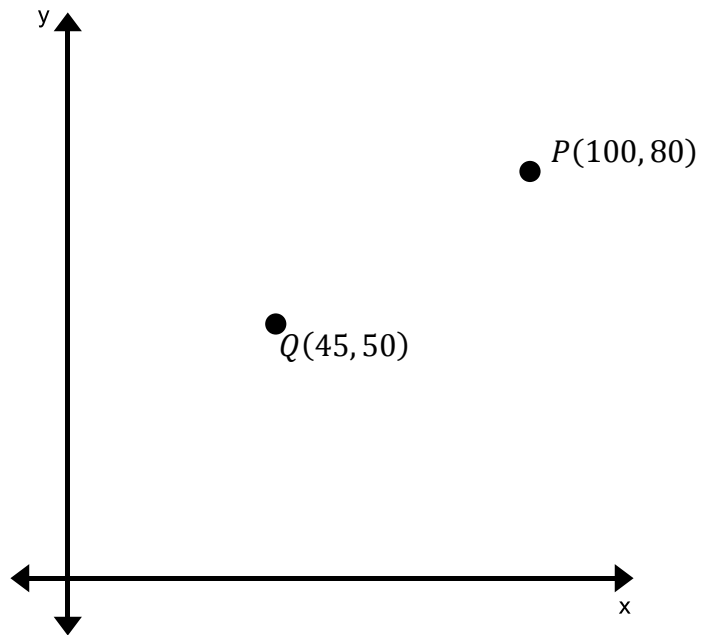
8. Find the distance between the two points given below. Leave your answers in simplest radical form.

a. $A: (3, 5)$ $B: (6, 9)$

b. $R: (-1, 4)$ $S: (3, 8)$

c. $C: (0, 5)$ $D: (2, -3)$

d. $S: (-3, -5)$ $T: (2, -7)$

9. A triangle has vertices at the points (2,3) and (4,8), and (6,3) on the coordinate plane.
   a. Find the perimeter of the triangle. Use the grid below if needed.

   b. Find the area of the triangle.

   c. If the triangle is dilated by a scale factor of 3 what will the new perimeter be?

   d. If the triangle is dilated by a scale factor of 3 what will the new area be?

   e. Plot the original triangle, label it triangle A. Then reflect the triangle over the *y*-axis, label the new
      triangle A'. Does this transformation change the perimeter of the triangle? Explain your answer.
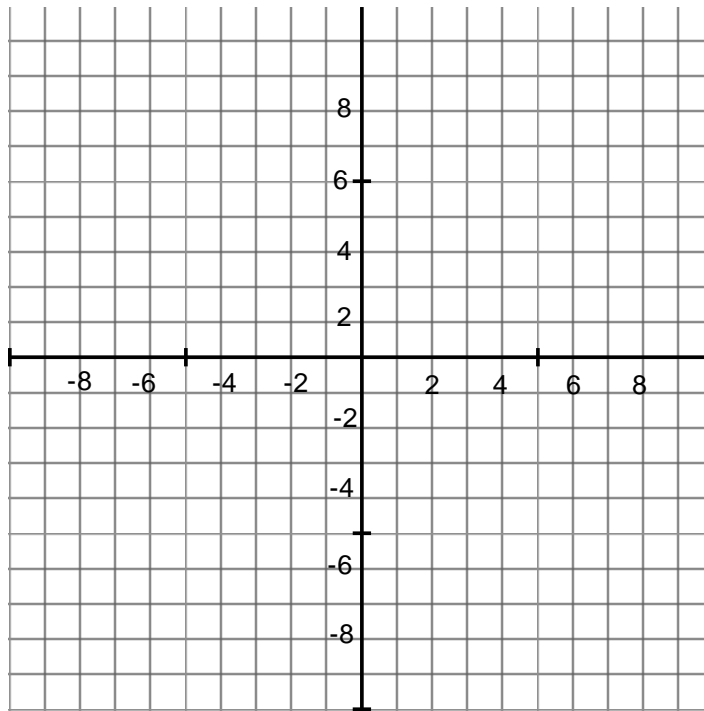
10. List **three** coordinate pairs that are 5 units
    away from the origin in the first quadrant.
    Describe how to find the points and justify
    your reasoning. The grid has been provided
    to help you.
    (**Note:** Points on the axes are not in the first
    quadrant).

8WB10-81