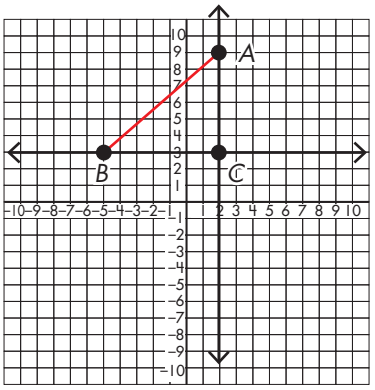
NAME _____

Lesson 5.9 Pythagorean Theorem in the Coordinate Plane

The Pythagorean Theorem can be used to find an unknown distance between two points on a coordinate plane.



Find the distance between points *A* and *B*.

Step 1: Draw lines extending from points *A* and *B* so that when they intersect they create a right angle. Label the point at which they meet, point *C*.

Step 2: Find the distance of segment $\overline{AC}$ (7), and segment $\overline{BC}$ (6).

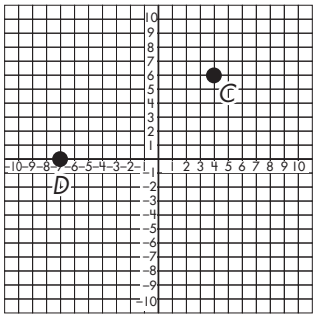
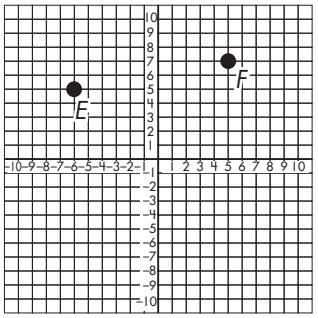
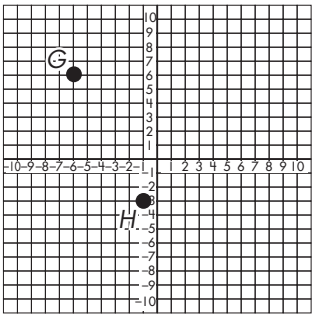
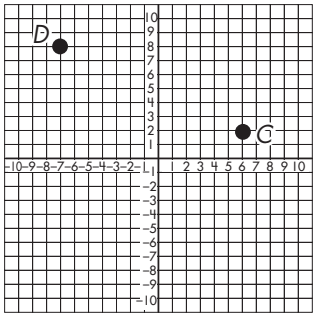
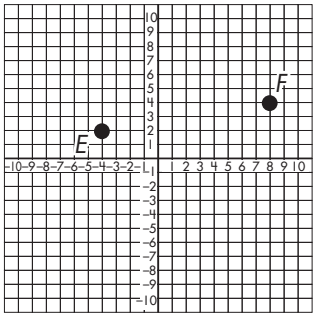
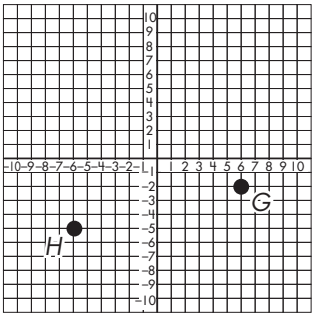
Step 3: Use Pythagorean Theorem to find the length of segment $\overline{AB}$.

$$7^2 + 6^2 = 85$$

$$(\overline{AB})^2 = 85$$

$$\overline{AB} = \sqrt{85} = 9.22$$

Find the distance between each of the points given below using the Pythagorean Theorem. Round answers to the nearest hundredth.

	a	b	c
1.			
	$\overline{CD}$ = _____	$\overline{EF}$ = _____	$\overline{GH}$ = _____
2.			
	$\overline{CD}$ = _____	$\overline{EF}$ = _____	$\overline{GH}$ = _____