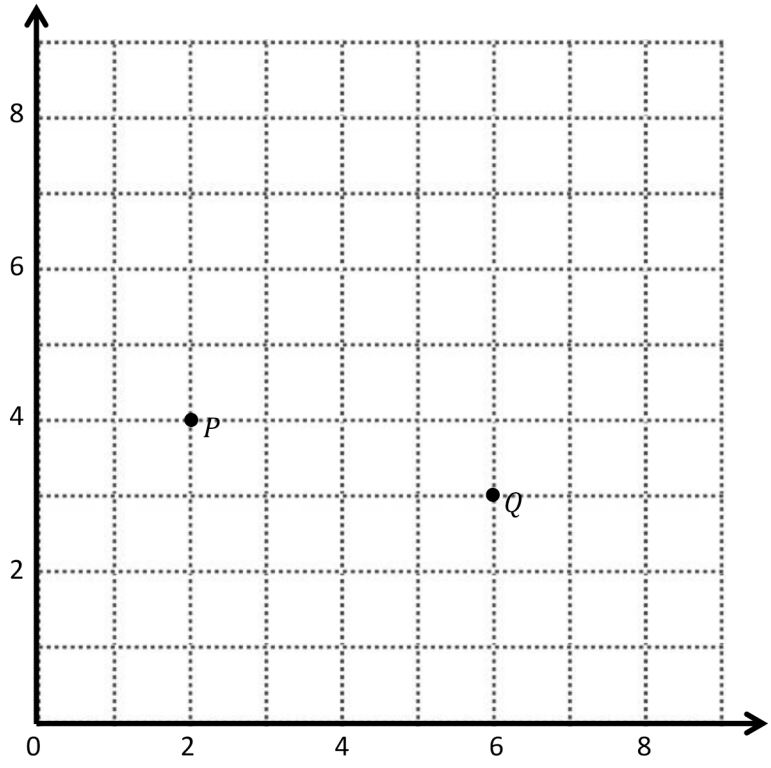
Name _____ Date _____

1. Use the coordinate plane below to complete the following tasks.



a. Draw $\overline{PQ}$.

b. Plot point R (7, 7).

c. Draw $\overline{PR}$.

d. Explain how you know $\angle PQR$ is a right angle without measuring it.

e. Compare the coordinates of points P and Q. What is the difference of the x-coordinates? The y-coordinates?

f. Compare the coordinates of points P and R. What is the difference of the x-coordinates? The y-coordinates?

g. What is the relationship of the differences you found in (e) and (f) to the triangles of which these two segments area a part?

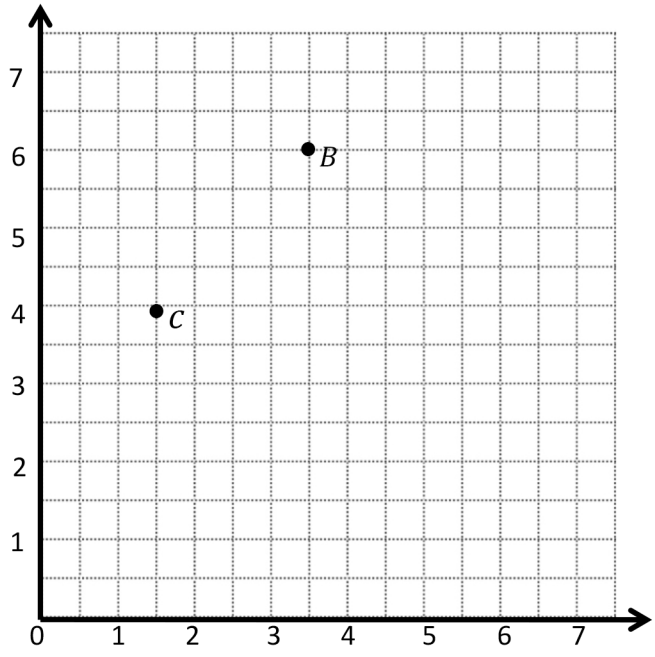
2. Use the coordinate plane below to complete the following tasks.

a. Draw $\overline{BC}$.

b. Plot point D $(3, 2\frac{1}{2})$.

c. Draw $\overline{BD}$.

d. Explain how you know $\angle BCD$ is a right angle without measuring it.



e. Compare the coordinates of points B and C. What is the difference of the x-coordinates? The y-coordinates?

f. Compare the coordinates of points B and D. What is the difference of the x-coordinates? The y-coordinates?

g. What is the relationship of the differences you found in (e) and (f) to the triangles of which these two segments area a part?

3. $\overleftrightarrow{ST}$ contains the following points. S: (2, 3) T: (9, 6)

a. Give the coordinates of a pair of points, U and V, such that $\overleftrightarrow{ST} \perp \overleftrightarrow{UV}$.

S: (_____, _____) T: (_____, _____)

Answer Key

1. a. $\overline{PQ}$ drawn
   b. Point R plotted
   c. $\overline{PR}$ drawn
   d. Explanations will vary.
   e. x-coordinates: 4; y-coordinates: 1
   f. x-coordinates: 1; y-coordinates: 4
   g. Explanations will vary.

2. a. $\overline{BC}$ drawn
   b. Point D plotted
   c. $\overline{BD}$ drawn
   d. Explanations will vary.
   e. x-coordinates: $1\frac{1}{2}$; y-coordinates: 1
   f. x-coordinates: 1; y-coordinates: $1\frac{1}{2}$
   g. Explanations will vary.

3. Answers will vary.