Name _____ Date _____ Class _____

Practice A
1-6 *Midpoint and Distance in the Coordinate Plane*

Complete the statements.

1. A coordinate plane is a plane that is divided into four regions by a horizontal

   number line, the _____, and a vertical number line, the _____.

2. The location, or _____, of a point are given by an ordered pair (x, y).
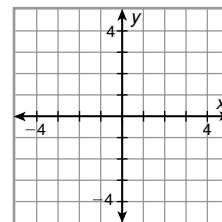
Use the figure for Exercises 3–5.

The midpoint of a segment has an *x*-coordinate that is the average of

the *x*-coordinates of its endpoints $\left(\dfrac{x_1 + x_2}{2}\right)$. The midpoint of a segment

has a *y*-coordinate that is the average of the *y*-coordinates of its

endpoints $\left(\dfrac{y_1 + y_2}{2}\right)$.
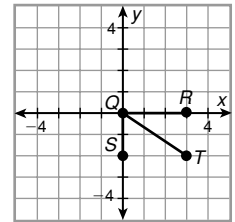
3. *Q* has coordinates (0, 0). *R* has coordinates (3, 0).
   Find the midpoint of $\overline{QR}$.   _____

4. *S* has coordinates (0, −2). Find the midpoint of $\overline{QS}$.   _____

5. *T* has coordinates (3, −2). Find the midpoint of $\overline{QT}$.   _____

Use the figure for Exercises 6 and 7.

6. *I* is the midpoint of $\overline{HJ}$. *H* has coordinates (0, 0), and
   I has coordinates (−1, 2). Sketch these points in the
   coordinate plane. Study the graph and guess where
   J will be. Draw $\overline{HJ}$.

7. Find the coordinates of *J* by using the Midpoint Formula.   _____

Use the figure for Exercises 8–12.

Manuel is out for a jog. The thick lines on the grid are
jogging paths. He is on his way home and is at *D*.
His home is at *E*. Each unit on the grid is 1 mile.
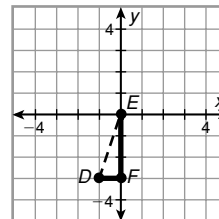
8. Name the coordinates of *D*.   _____

9. Find how many miles Manuel will jog if he goes straight to
   the *x*-axis.   _____

10. Find how many miles Manuel will jog if he stays on the jogging
    paths all the way home.   _____

11. Find how many miles Manuel will jog if he goes straight to
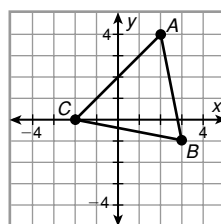   the *y*-axis.   _____

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Practice B
Midpoint and Distance in the Coordinate Plane

Find the coordinates of the midpoint of each segment.

1. $\overline{TU}$ with endpoints $T(5, -1)$ and $U(1, -5)$ _____

2. $\overline{VW}$ with endpoints $V(-2, -6)$ and $W(x + 2, y + 3)$ _____

3. Y is the midpoint of $\overline{XZ}$. X has coordinates $(2, 4)$, and
Y has coordinates $(-1, 1)$. Find the coordinates of Z.   _____

Use the figure for Exercises 4–7.

4. Find AB. _____

5. Find BC. _____

6. Find CA. _____

7. Name a pair of congruent segments. _____

Find the distances.

8. Use the Distance Formula to find the distance, to the
nearest tenth, between $K(-7, -4)$ and $L(-2, 0)$.   _____

9. Use the Pythagorean Theorem to find the distance, to
the nearest tenth, between $F(9, 5)$ and $G(-2, 2)$.   _____

Use the figure for Exercises 10 and 11.

Snooker is a kind of pool or billiards played on a 6-foot-by-12-foot table.
The side pockets are halfway down the rails (long sides).

6 ft

10. Find the distance, to the nearest tenth of a foot, diagonally
across the table from corner pocket to corner pocket.

_____

side
pocket

12 ft

11. Find the distance, to the nearest tenth of an inch, diagonally
across the table from corner pocket to side pocket.

_____

corner
pocket

Holt Geometry