

CHAPTER



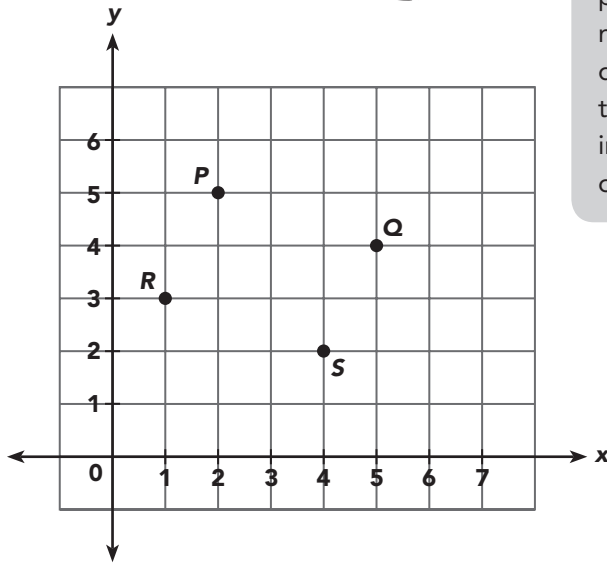
The Coordinate Plane

Lesson 9.1 Points on the Coordinate Plane

Use the coordinate plane below.

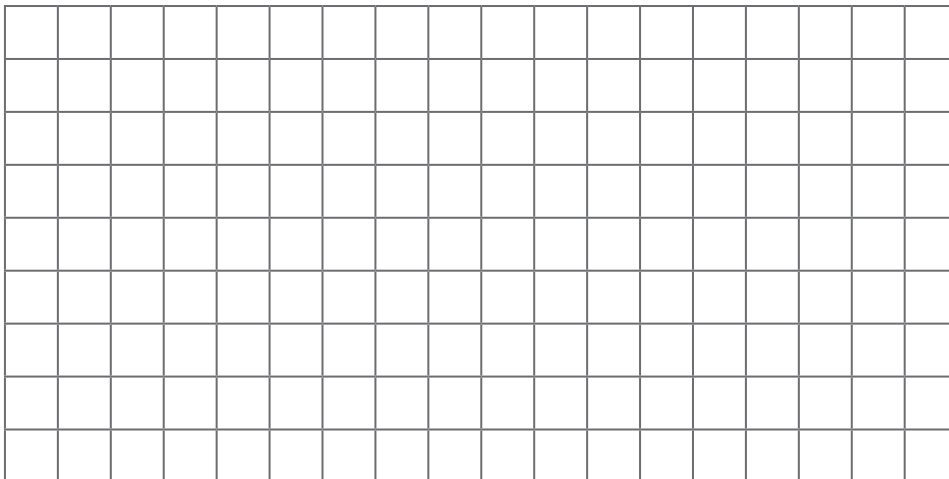
1. Give the coordinates of each point.

A pair of **coordinates** is an ordered pair of numbers that give the location of a point on a coordinate plane. The first number in an ordered pair indicates the direction and the position of the point on the horizontal axis. The second number indicates the direction and the position on the vertical axis.



Plot the points on the coordinate plane below.

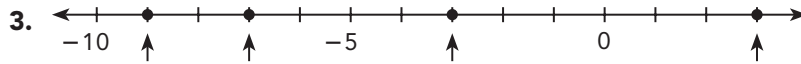
2. A (0, 5), B (6, 3), C (4, 0), D (2, 1)



Name: _____

Date: _____

Identify the number that each indicated point represents.



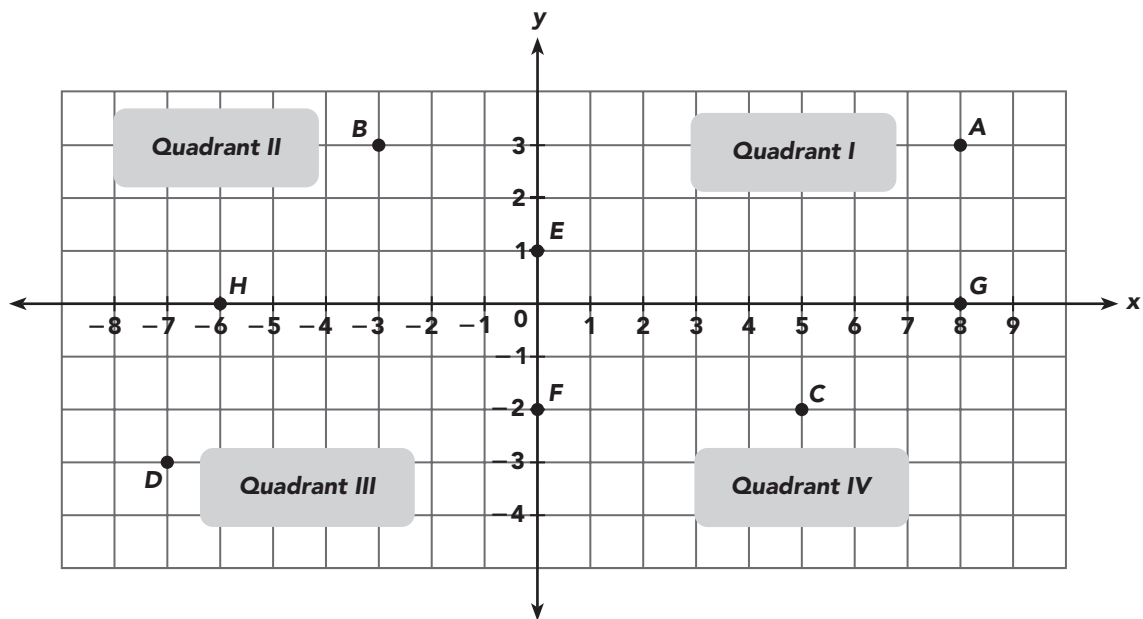
Draw a horizontal number line to represent the set of numbers.

4. $-5, 1, -4, -8, 0$

Use the coordinate plane below.

Example

Give the coordinates of each point. In which quadrant is each point located?



$A(8, 3)$, $B(-3, 3)$, $C(5, -2)$, $D(-7, -3)$, $E(0, 1)$, $F(0, -2)$,
 $G(8, 0)$, and $H(-6, 0)$

Quadrant I: A ; Quadrant II: B ; Quadrant III: D ; Quadrant IV: C

Point E lies on the y -axis. It is between Quadrant I and Quadrant II.

Point F lies on the y -axis. It is between Quadrant III and Quadrant IV.

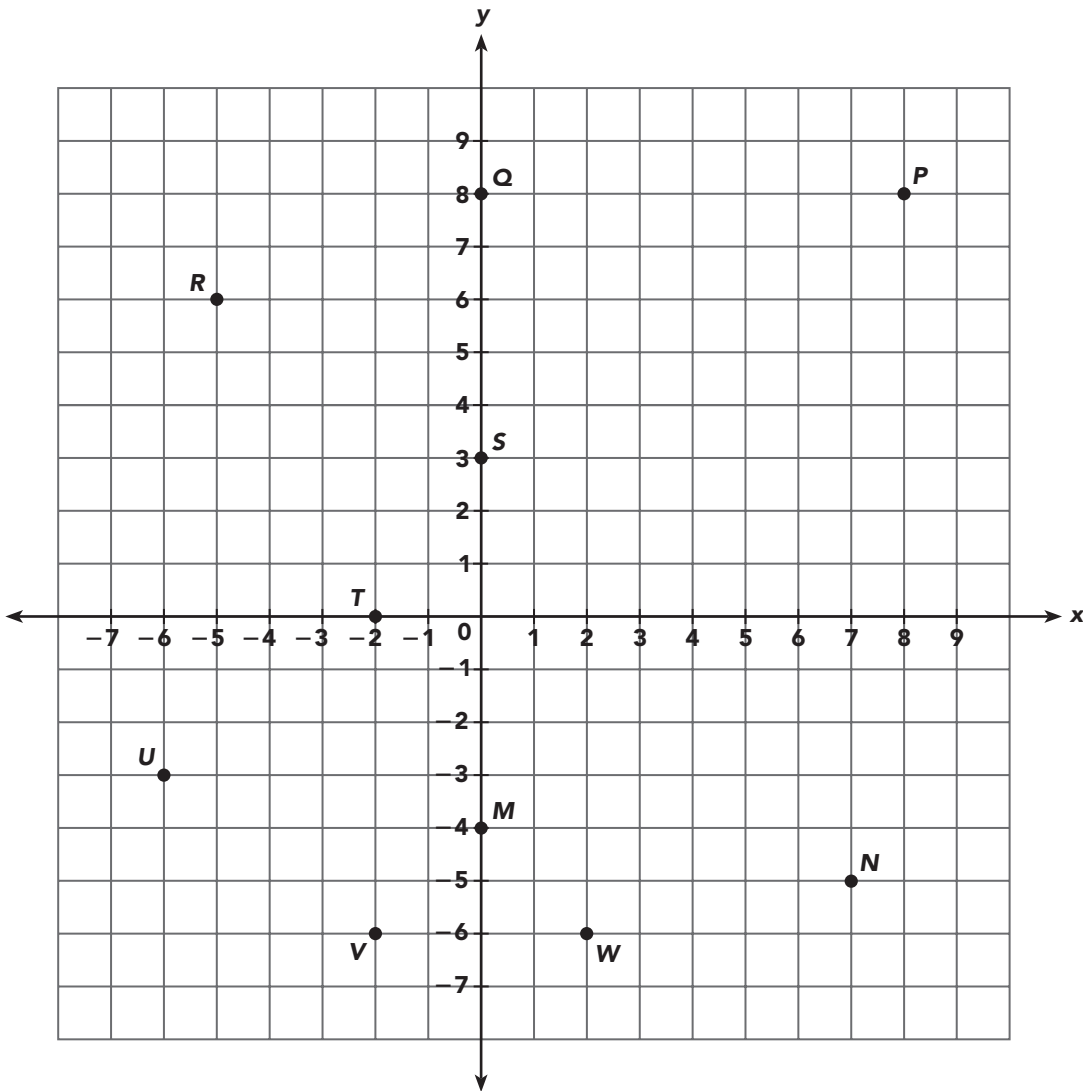
Point H lies on the x -axis. It is between Quadrant II and Quadrant III.

Point G lies on the x -axis. It is between Quadrant I and Quadrant IV.

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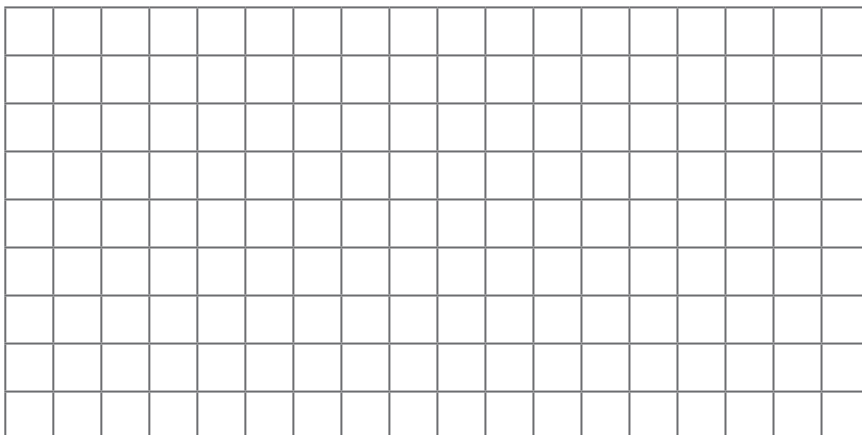
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5. Give the coordinates of each point.



Plot the points on the coordinate plane below. In which quadrant is each point located?

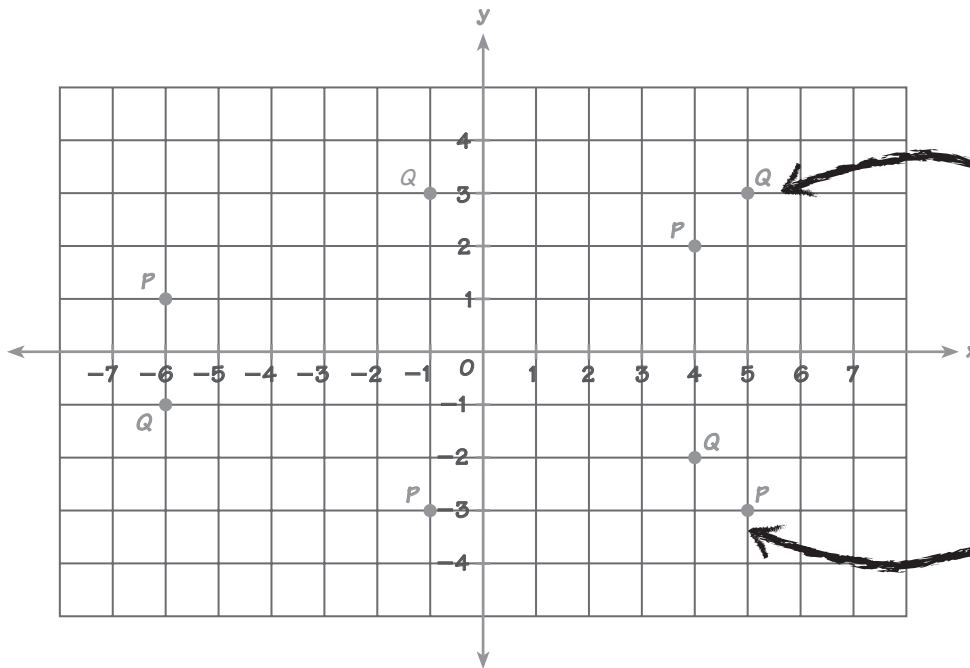
6. A (-6, -2), B (-4, -4), C (-1, -5), D (3, -4), E (5, -1), F (8, -6)



Points P and Q are reflections of each other about the x -axis. Give the coordinates of point Q if the coordinates of point P are the following:

Example

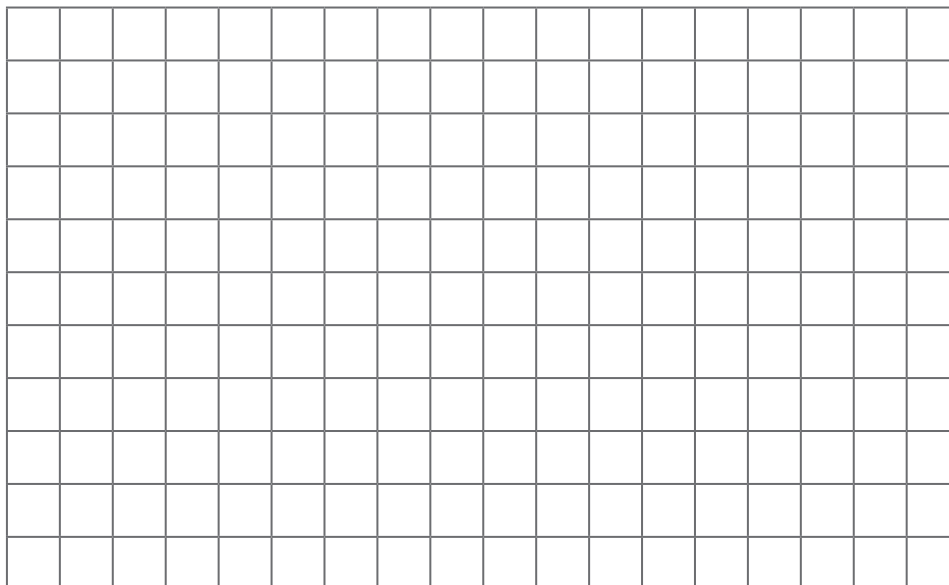
- a) $(4, 2)$ $(4, -2)$ b) $(5, -3)$ $(5, 3)$ c) $(-6, 1)$ $(-6, -1)$ d) $(-1, -3)$ $(-1, 3)$



Points P and Q are an equal distance away from the x -axis. They are reflections of each other about the x -axis.

Points M and N are reflections of each other about the x -axis. Give the coordinates of point N if the coordinates of point M are the following:

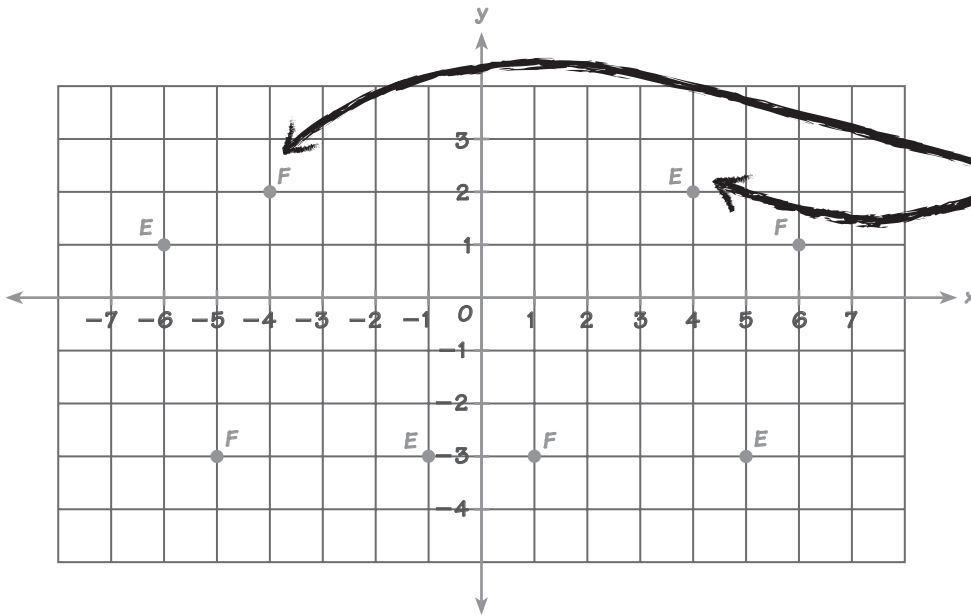
7. $(8, 1)$ 8. $(6, -4)$ 9. $(-3, 3)$ 10. $(-6, -2)$



Points *E* and *F* are reflections of each other about the *y*-axis. Give the coordinates of point *F* if the coordinates of point *E* are the following:

Example

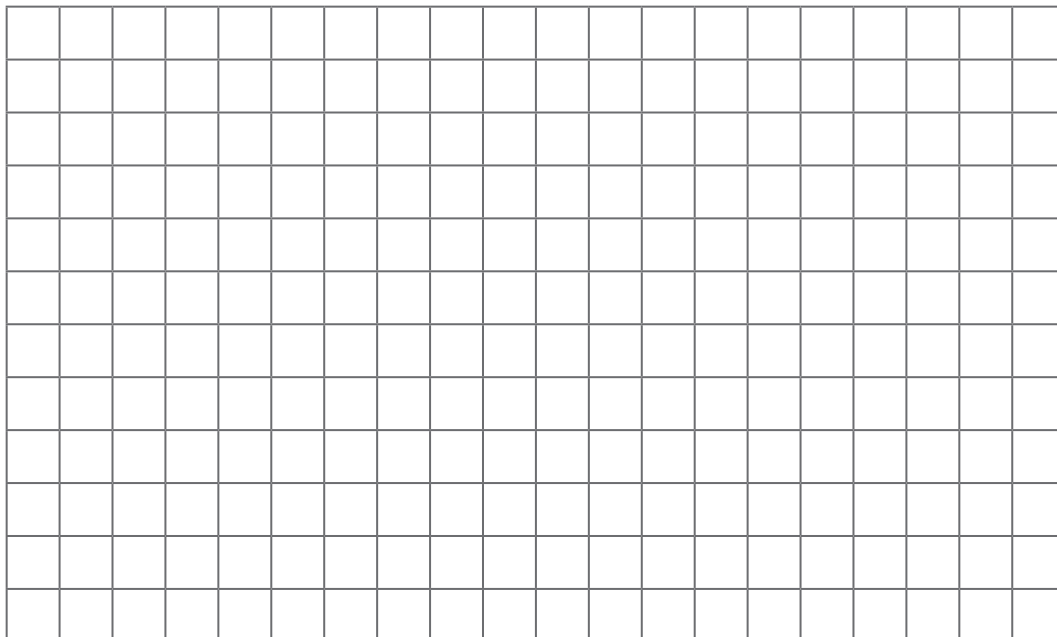
- a) $(4, 2)$ $(-4, 2)$ b) $(5, -3)$ $(-5, -3)$ c) $(-6, 1)$ $(6, 1)$ d) $(-1, -3)$ $(1, -3)$



Points *E* and *F* are an equal distance away from the *y*-axis. They are reflections of each other about the *y*-axis.

Points *J* and *K* are reflections of each other about the *y*-axis. Give the coordinates of point *K* if the coordinates of point *J* are the following:

11. $(8, 1)$ 12. $(6, -4)$ 13. $(-3, 3)$ 14. $(-6, -2)$

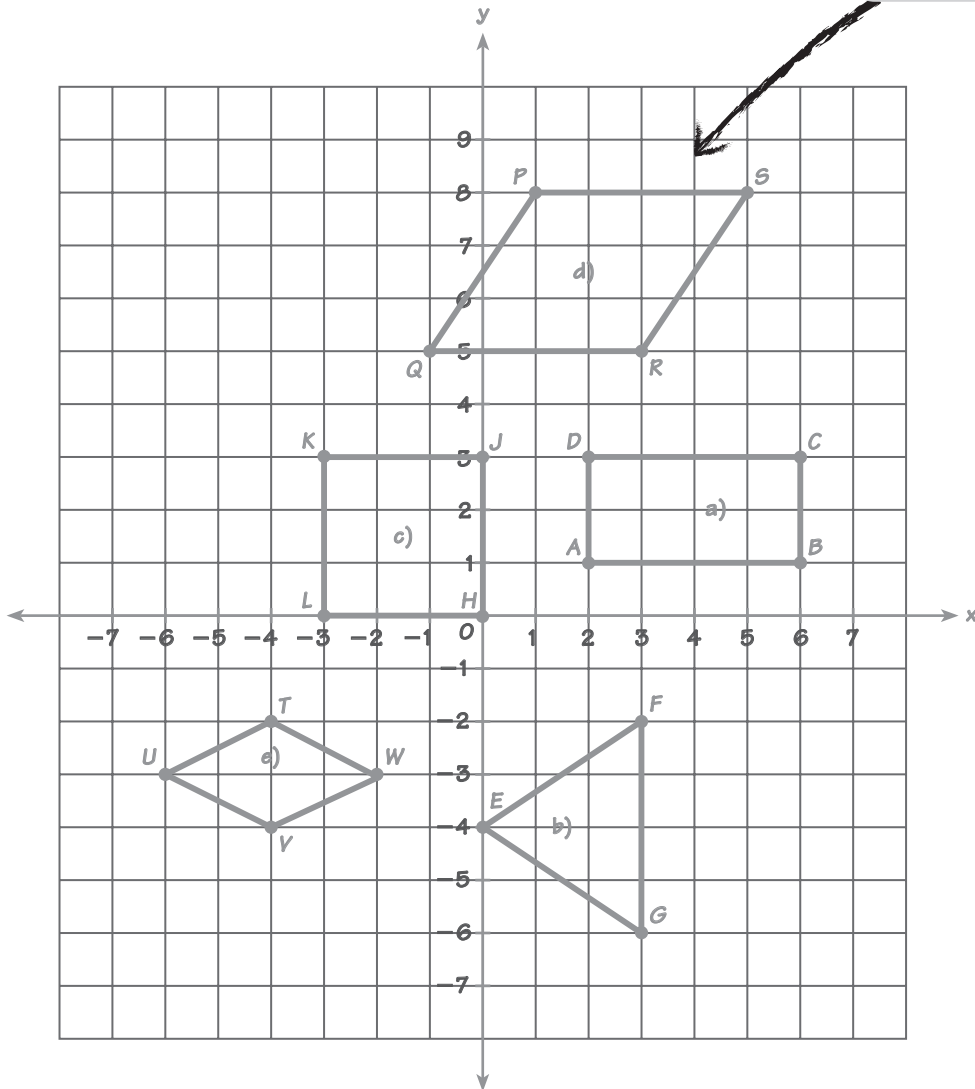


For each exercise, plot the given points on a coordinate plane. Then join the points in order with line segments to form a closed figure. Name each figure formed.

Example

- a) $A(2, 1), B(6, 1), C(6, 3), \text{ and } D(2, 3)$ *rectangle*
- b) $E(0, -4), F(3, -2), \text{ and } G(3, -6)$ *triangle*
- c) $H(0, 0), J(0, 3), K(-3, 3), \text{ and } L(-3, 0)$ *square*
- d) $P(1, 8), Q(-1, 5), R(3, 5), \text{ and } S(5, 8)$ *parallelogram*
- e) $T(-4, -2), U(-6, -3), V(-4, -4), \text{ and } W(-2, -3)$ *rhombus*

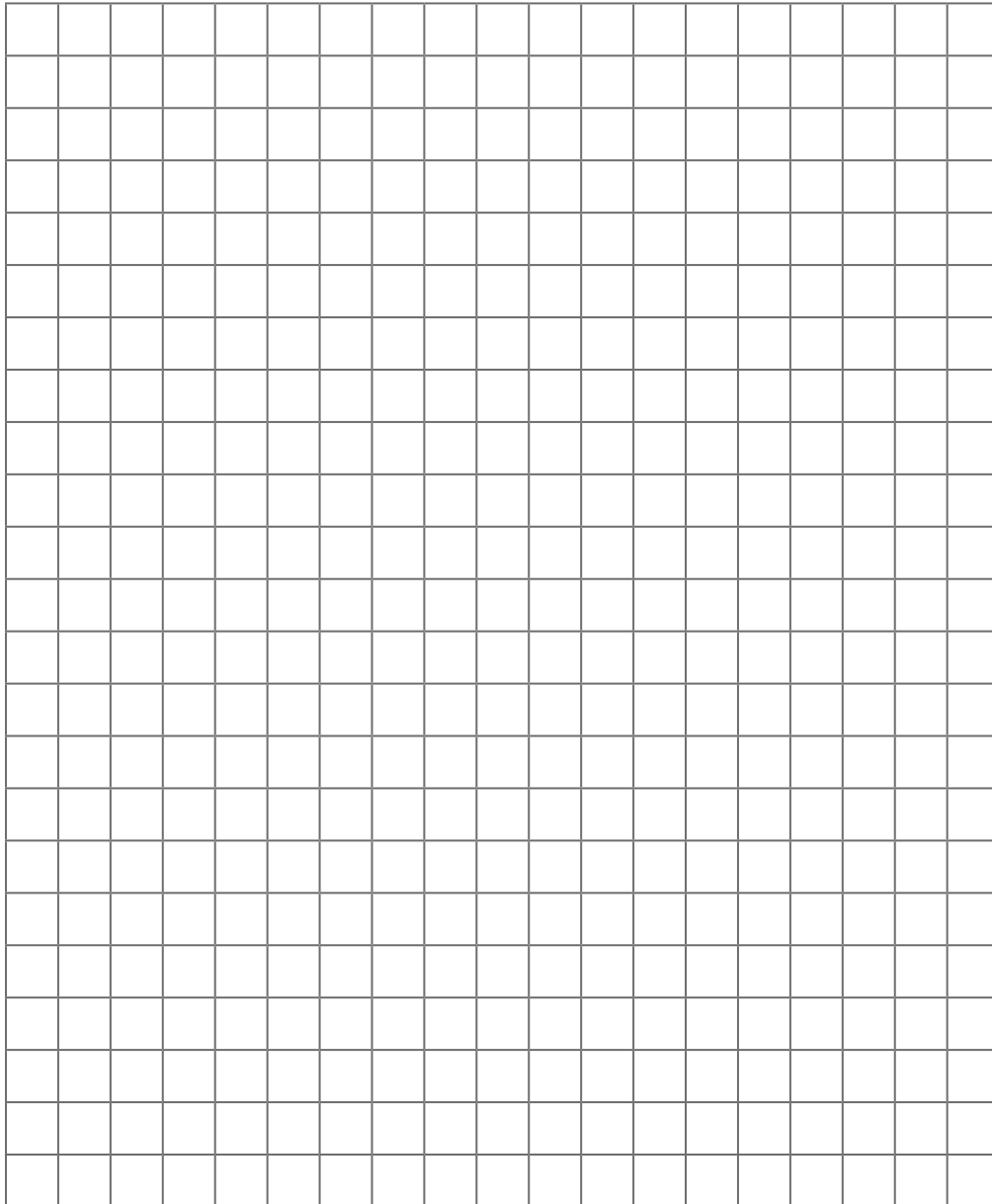
Figure PQRS is a parallelogram. It has 2 pairs of parallel lines, \overline{PS} and \overline{QR} , and \overline{PQ} and \overline{SR} .



Name: _____

Date: _____

- 15. $A(4, 3)$, $B(6, 1)$, and $C(7, 5)$
- 16. $D(1, -1)$, $E(2, -4)$, $F(4, 0)$, and $G(3, 3)$
- 17. $H(-2, -3)$, $J(1, -3)$, $K(1, -6)$, and $L(-2, -6)$
- 18. $M(-1, -2)$, $N(-5, -2)$, $P(-5, 1)$, and $Q(-2, 1)$
- 19. $S(-6, 2)$, $T(-2, 2)$, $U(-2, 5)$, and $V(-6, 5)$



Name: _____

Date: _____

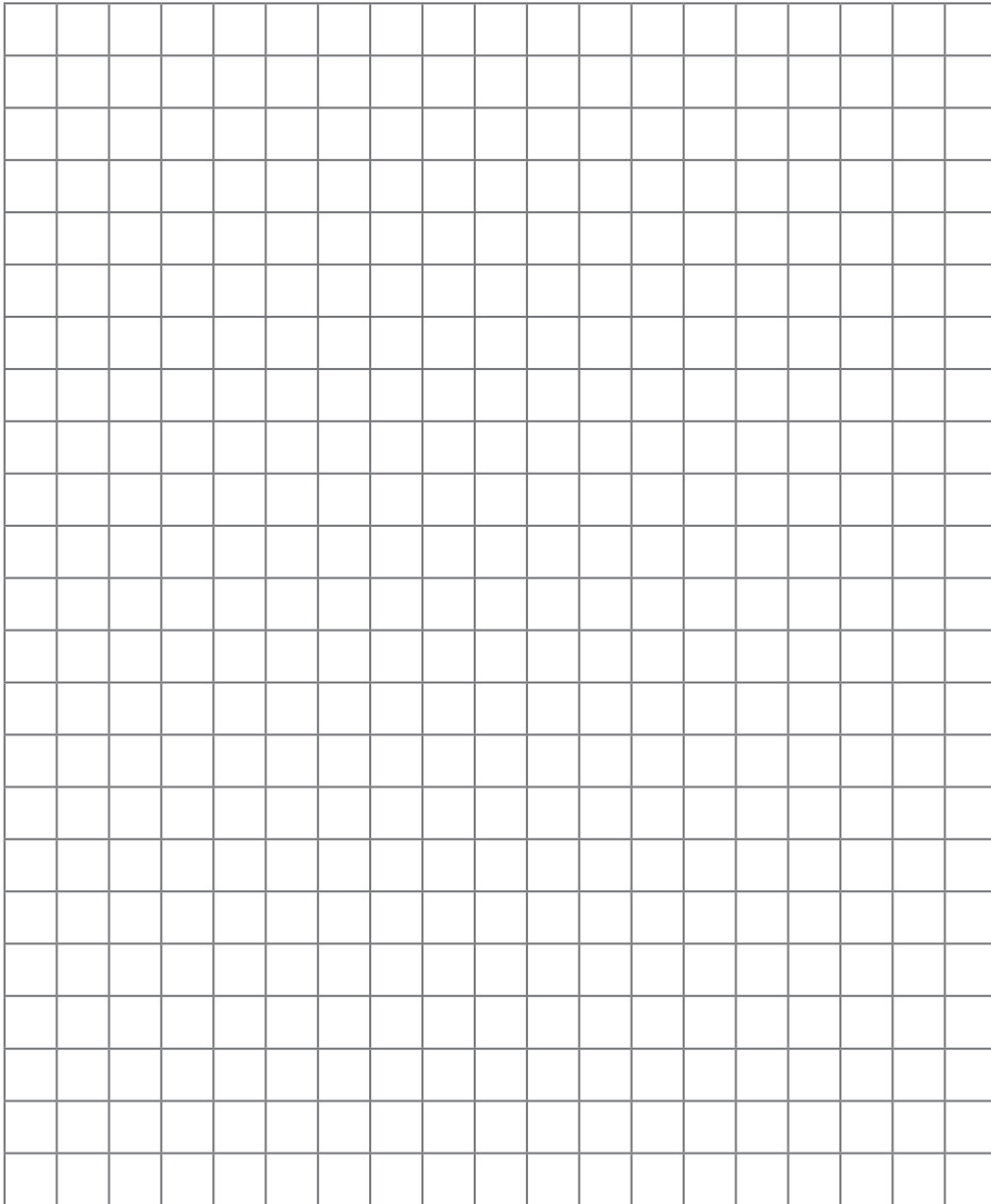
20. $R(-6, 4)$, $S(-6, -3)$, $T(-4, -3)$, and $U(-4, 4)$

21. $M(1, 1)$, $N(4, -2)$, $P(8, -2)$, and $Q(5, 1)$

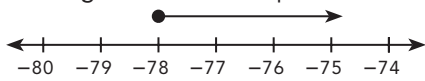
22. $H(3, 5)$, $J(4, 2)$, $K(5, 5)$, and $L(4, 8)$

23. $D(-2, 5)$, $E(-3, 3)$, $F(2, 3)$, and $G(1, 5)$

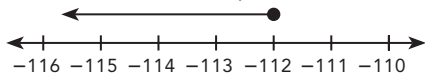
24. $A(-3, -4)$, $B(-1, -5)$, and $C(0, 0)$



21. Answers vary. Possible values of p are $-78, -77, -10,$ and 5 .
The inequality $p \geq -78$ is true for any value of p that is greater than or equal to -78 .



22. Answers vary. Possible values of y are $-112, -113, -120,$ and -200 .
The inequality $y \leq -112$ is true for any value of y that is less than or equal to -112 .



Lesson 8.4

1. $y \oplus 9 = 32$
 $y \oplus 9 \ominus 9 = 32 \ominus 9$
 $y = 23$
Jeremy collected \$23 at first.

2. $b \ominus 12 = 53$
 $b \ominus 12 \oplus 12 = 53 \oplus 12$
 $b = 65$
Wayne had 65 comic books at first.

3. $g - 72 = 36$; 108 muffins

4. $k + 24 = 92$; 68 pages

5. $5w = 60$
 $5w \div 5 = 60 \div 5$
 $w = 12$
Dawn sold 12 sandwiches.

6. $3n = 72$; 24 dimes

7. $\frac{w}{8} = 6$
 $\frac{w}{8} \odot 8 = 6 \odot 8$
 $w = 48$
Lester had 48 marbles at first.

8. $\frac{m}{6} = 4$; 24 tiles

9. a) $w \geq 15$

- b) 15

10. a) $s < 500$

- b) 499 words

11. a) $m > 15$

- b) 16 members

12. a) $a \leq 19$

- b) 19 grammar books

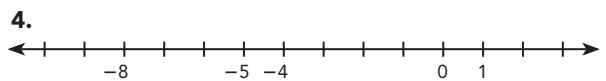
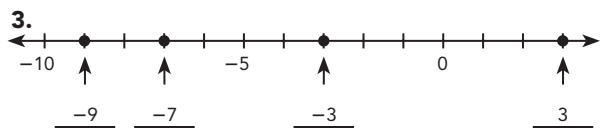
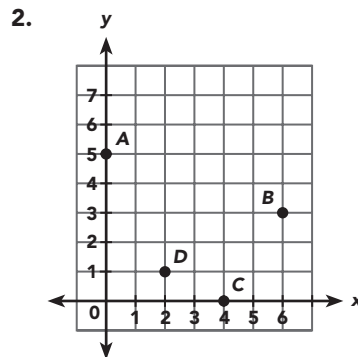
13. a) $v \leq 7,500$

- b) 7,500 people

Chapter 9

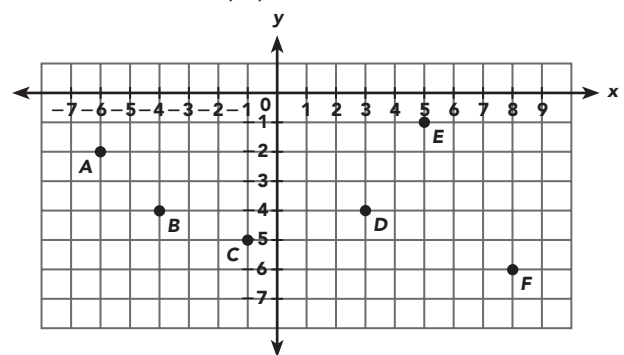
Lesson 9.1

1. $P(2, 5), Q(5, 4), R(1, 3), S(4, 2)$



5. $M(0, -4), N(7, -5), P(8, 8), Q(0, 8),$
 $R(-5, 6), S(0, 3), T(-2, 0), U(-6, -3),$
 $V(-2, -6), W(2, -6)$

6. Quadrant III: $A, B, C,$
Quadrant IV: D, E, F

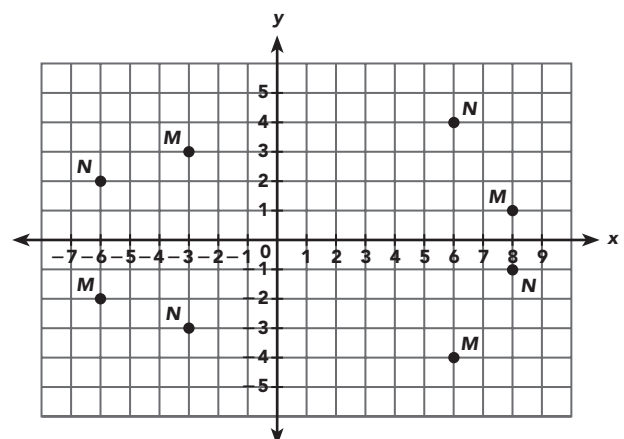


7. $(8, -1)$

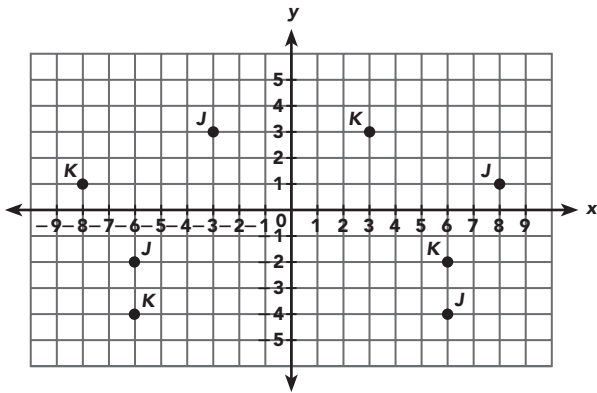
8. $(6, 4)$

9. $(-3, -3)$

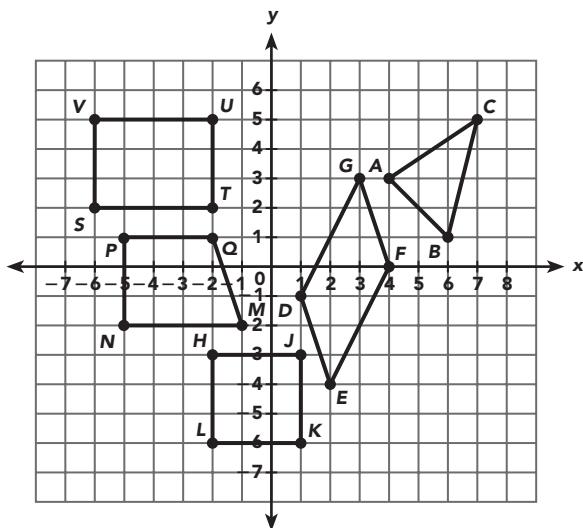
10. $(-6, 2)$



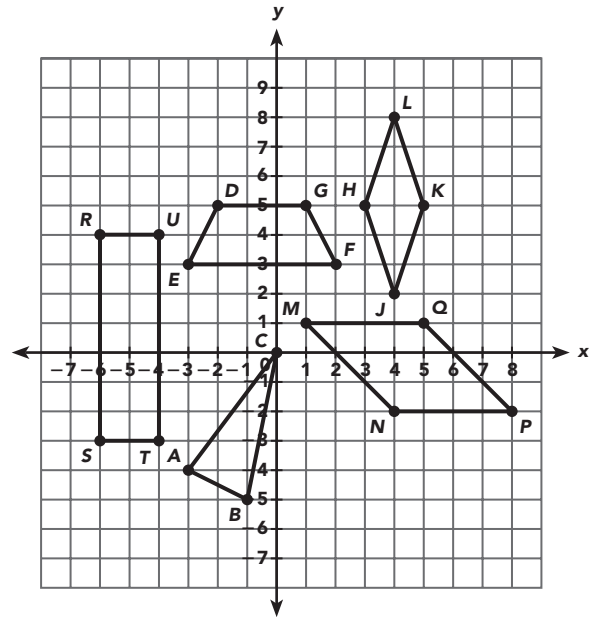
11. $(-8, 1)$
12. $(-6, -4)$
13. $(3, 3)$
14. $(6, -2)$



15. triangle
16. parallelogram
17. square
18. trapezoid
19. rectangle



20. rectangle
21. parallelogram
22. rhombus or parallelogram
23. trapezoid
24. triangle



Lesson 9.2

1. $|7| = 7$
2. $|-5| = 5$
3. $|-18| = 18$
4. $|101| = 101$
5. Perimeter
 $= \underline{7} + \underline{12} + \underline{6} + \underline{8}$
 $= \underline{33}$ cm
6. Perimeter
 $= \underline{13} + \underline{9} + \underline{13} + \underline{9}$
 $= \underline{44}$ cm
7. Perimeter
 $= \underline{7} + \underline{7} + \underline{7} + \underline{7}$
 $= \underline{28}$ in.
8. 3

9. 5

