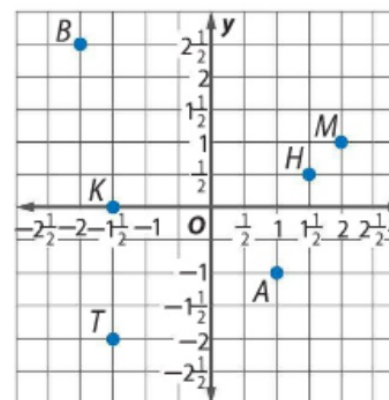Identify the ordered pair that names each point or the name of each point. Then identify the quadrant in which it is located. (Examples 1 and 2)

1. T
$\left(-1\frac{1}{2}, -2\right);$ **III**

2. $\left(-1\frac{1}{2}, 0\right)$
K; none

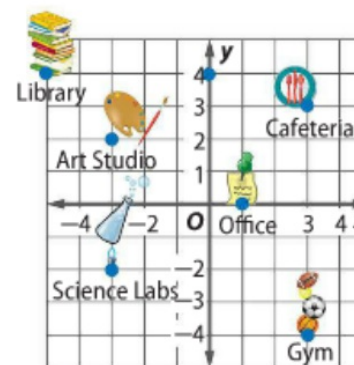**3.** $\left(-2, 2\frac{1}{2}\right)$
B; II

4. Refer to the diagram of a school. (Examples 3 and 4)

   a. What is located at the reflection of $(-3, -4)$ across the y-axis. What are the coordinates of this location?

   the gym; (3, −4)

   b. What is located at the reflection of the science labs across the x-axis? What are the coordinates of this location? **the art studio; (−3, 2)**

5. 🅴 **Building on the Essential Question** How are number lines and the coordinate plane related?

The coordinate plane is the intersection of a vertical and horizontal number line.

Identify the ordered pair that names each point. Then identify the quadrant in which it is located. (Example 1)

1. R

 (2, 2); I

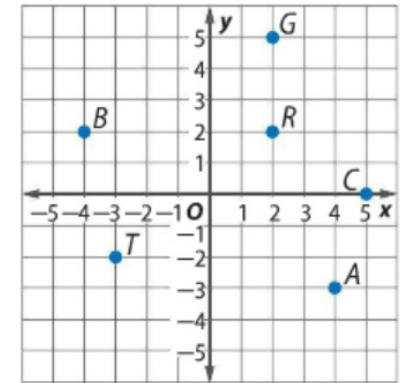2. G

 (2, 5); I

3. B

 (−4, 2); II

Show your work.

4. T

 (−3, −2); III

5 C

 (5, 0); none

6. A

 (4, −3); IV

Identify the name of each point. Then identify the quadrant in which it is located. (Example 2)

7 (−2.5, 1.5)

 Z; II

8. (1, 1.5)

 F; I
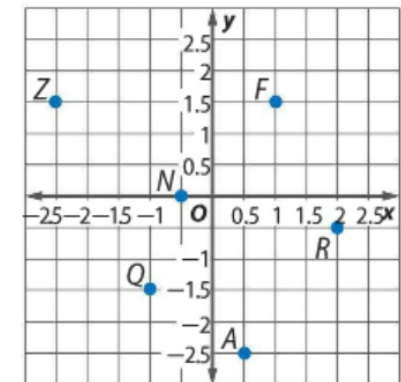
9. (0.5, −2.5)

 A; IV

10. (2, −0.5)

 R; IV

11. (−0.5, 0)

 N; none

12. (−1, −1.5)

 Q; III

13. **CCSS** **Use Math Tools** Refer to the map of Wonderland Park. (Examples 3 and 4)

a. What is located closest to the origin?

The Clock

b. Liza is standing at (2, 4). What is located at the reflection of (2, 4) across the *x*-axis? What are the coordinates of this location?
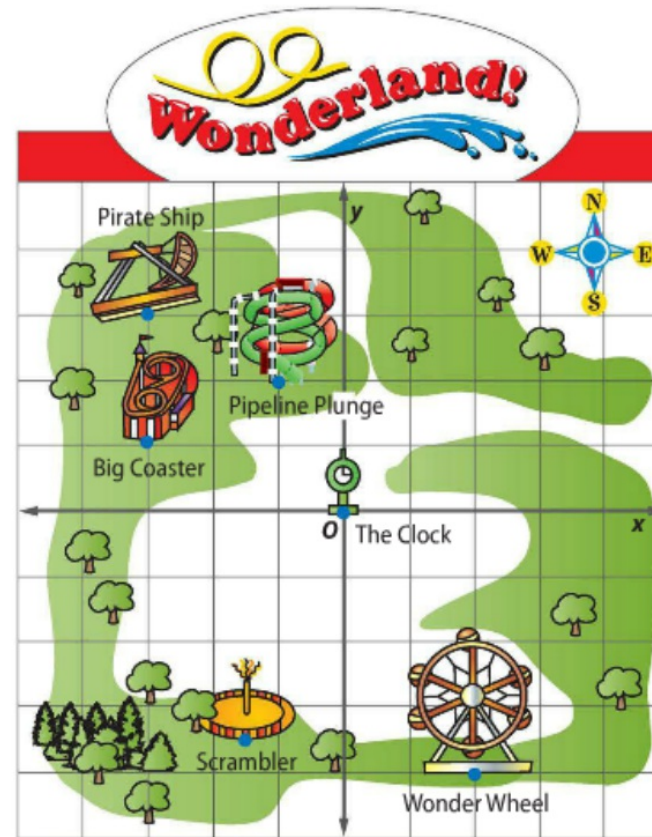
the Wonder Wheel; (2, −4)

c. What is located at the reflection of (3, 1) across the *y*-axis? What are the coordinates of this

location? **the Big Coaster; (−3, 1)**

d. The Pipeline Plunge is reflected across the *x*-axis. What are the coordinates of its new

location? **(−1, −2)**

Wonderland!

Pirate Ship

Pipeline Plunge

Big Coaster

N
W   E
S

The Clock

O

Scrambler

Wonder Wheel

14. **CCSS** **Identify Structure** Fill in the graphic organizer below. Consider the point (−3, 2).

Action	Result
opposite of −3	3
point (−3, 2) reflected across the y-axis	(3, 2)
point (−3, 2) reflected across the x-axis	(−3, −2)
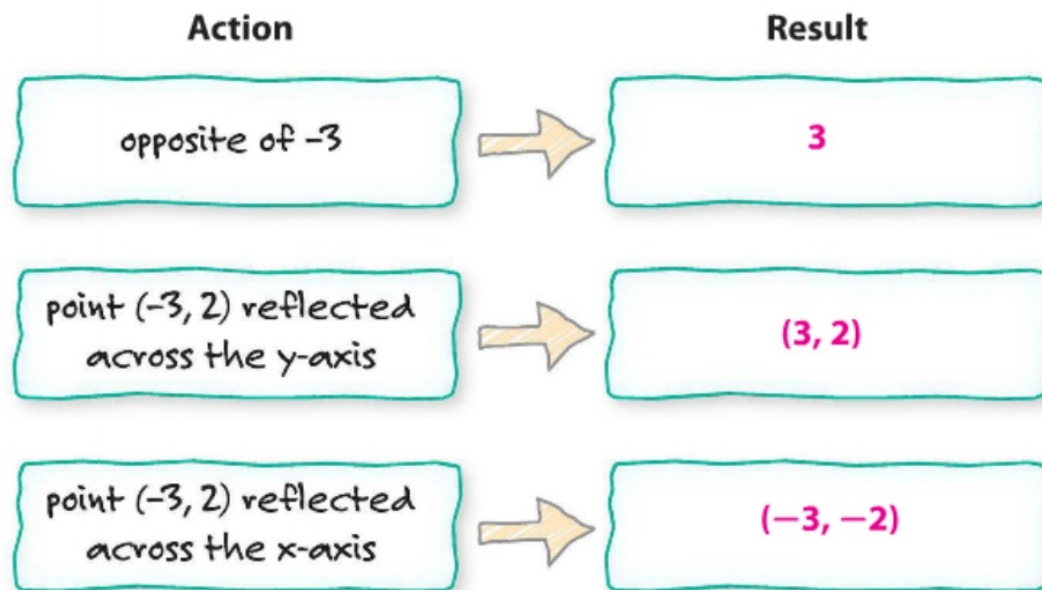
CCSS Persevere with Problems Without graphing, identify the quadrant(s) for which each of the following statements is true for any point (x, y). Justify your response.

15. The x- and y-coordinates have the same sign.

Quadrants I and III; Sample answer: In Quadrant I, both coordinates are positive and in Quadrant III, both coordinates are negative.

16. The x- and y-coordinates have opposite signs. Quadrants II and IV; Sample answer: In both Quadrants II and IV, the coordinates have different signs.

17. **CCSS Reason Inductively** Does the order of the numbers in an ordered pair matter when naming a point? Can that point be represented by more than one ordered pair? Sample answer: The first coordinate corresponds to a number on the x-axis. The second coordinate corresponds to a number on the y-axis. A point is defined by only one ordered pair.

18. **CCSS Model with Mathematics** A parallelogram is graphed on a coordinate plane so that two points are in the first quadrant and two points are in the third quadrant. What are possible coordinates of the vertices of the parallelogram?

Sample answer: $(2, 4)$, $(4, 4)$, $(-2, -6)$, $(-4, -6)$