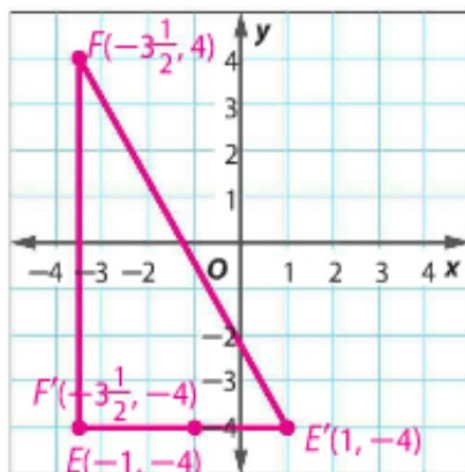



Guided Practice

1. Use a coordinate plane to represent Jasmine's stone garden. Graph points $E(-1, -4)$ and $F(-3\frac{1}{2}, 4)$. Then reflect point E across the y -axis and point F across the x -axis. What is the shape of her stone garden? (Examples 1–5)



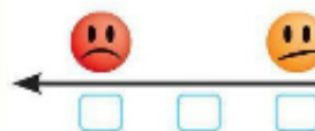
triangle

2.  **Building on the Essential Question** How can the coordinate plane be used to represent geometric figures?

Sample answer: You can graph and connect the points to represent geometric figures on the coordinate plane.

Rate Yourself

How confident are you about graphing on the coordinate plane? Check the box that applies.



For more help, go to [Help](#) or access a Personal Tutor.



Graph and label each point on the coordinate plane to the right.

(Examples 1 and 2)

1. $T(0, 0)$

2. $D(2, 1)$

3. $K(-3.25, 3)$

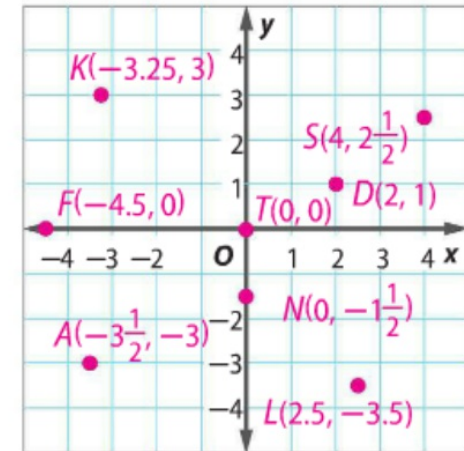
4. $N(0, -1\frac{1}{2})$

5. $F(-4.5, 0)$

6. $A(-3\frac{1}{2}, -3)$

7. $L(2.5, -3.5)$

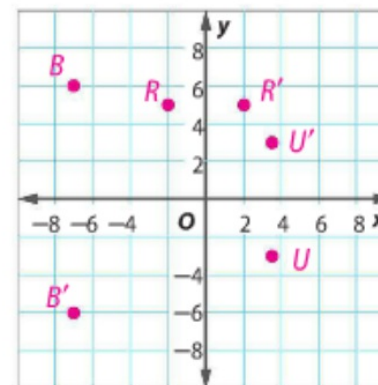
8. $S(4, 2\frac{1}{2})$



9 Graph $U(3.5, -3)$ on the coordinate plane to the right. Then graph its reflection across the x -axis. (Example 3)

10. Graph $B(-7, 6)$ on the coordinate plane on the right. Then graph its reflection across the x -axis. (Example 3)

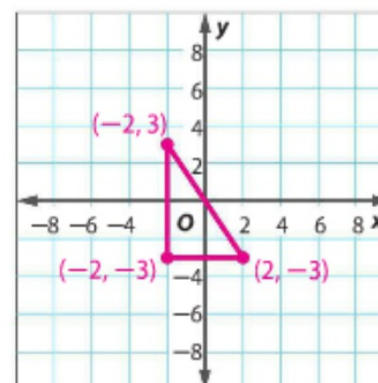
11. Graph $R(-2, 5)$ on the coordinate plane to the right. Then graph its reflection across the y -axis. (Example 4)



12. Amelia is drawing a map of the park. She graphs the entrance at $(2, -3)$. She reflects $(2, -3)$ across the y -axis. Then Amelia reflects the new point across the x -axis. What figure is graphed on the map?

(Example 5)

triangle



13. A point is reflected across the y -axis. The new point is located at $(-4.25, -1.75)$. Write the ordered pair that represents the original point. **$(4.25, -1.75)$**

14. **CCSS Model with Mathematics** A point is reflected across the x -axis. The new point is $(-7.5, 6)$. What is the distance between the two points?

12 units

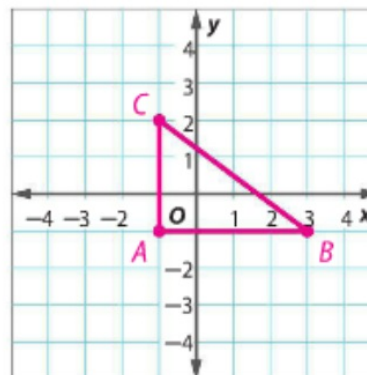


- 15** On a coordinate plane, draw triangle ABC with vertices $A(-1, -1)$, $B(3, -1)$, and $C(-1, 2)$. Find the area of the triangle in square units.

6 sq units

- 16.** The points $(4, 3)$ and $(-4, 0)$ are graphed on a coordinate plane. The point $(4, 3)$ is reflected across the x - and y -axes. If all four points are connected, what figure is graphed?

trapezoid



H.O.T. Problems Higher Order Thinking

- 17. CCSS Identify Structure** Three vertices of a quadrilateral are $(-1, -1)$, $(1, 2)$, and $(5, -1)$. What are the coordinates of two vertices that will form two different parallelograms? **Sample answer: $(7, 2)$, $(-5, 2)$**

CCSS Persevere with Problems Determine whether each statement is *sometimes*, *always*, or *never* true. Give an example or a counterexample.

- 18.** When a point is reflected across the y -axis, the new point has a negative x -coordinate. **sometimes; Sample answer: The x -coordinate of the new point will be negative if the x -coordinate of the original point is positive.**



18. When a point is reflected across the y -axis, the new point has a negative x -coordinate. sometimes; Sample answer: The x -coordinate of the new point will be negative if the x -coordinate of the original point is positive.

19. The point (x, y) is reflected across the x -axis. Then the new point is reflected across the y -axis. The location of the point after both reflections is $(-x, -y)$. always; The y -coordinate will be the opposite of the original following the reflection across the x -axis. The x -coordinate will be the opposite of the original following the reflection across the y -axis.

20. The x -coordinate of a point that lies on the x -axis is negative. sometimes; Sample answer: If the point is located to the left of the origin, the x -coordinate is negative $(-2, 0)$, if the point is located to the right of the origin, the x -coordinate is positive $(2, 0)$.

21. The x -coordinate of a point that lies on the y -axis is positive. never; The x -coordinate of any point on the y -axis is always zero.
