

# Independent Practice

## 11.4

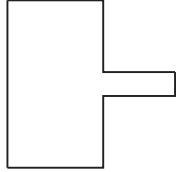
NAME \_\_\_\_\_

Module 11 Transformation of Shapes

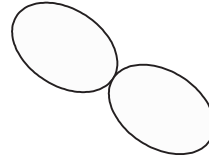
Lesson 4 Symmetry

Draw all the lines of symmetry.

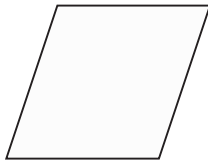
1.



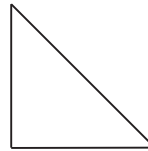
2.



3.

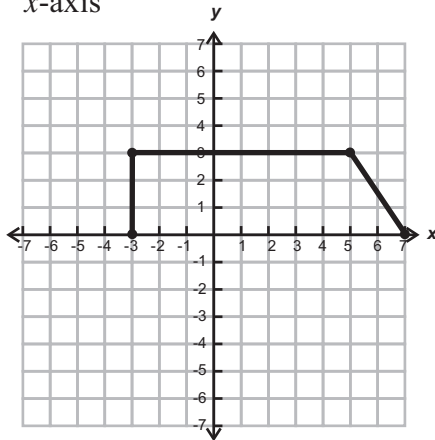


4.

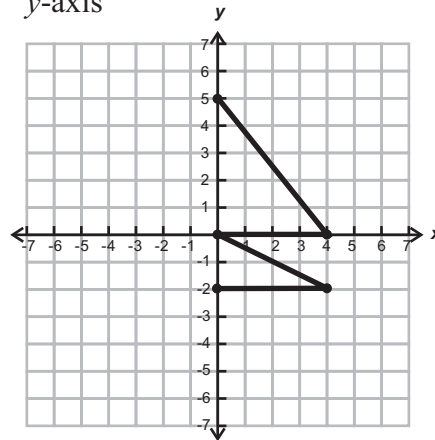


Complete the figure so it is symmetric about the given axis.

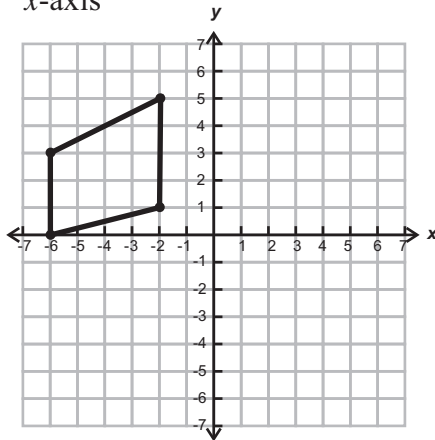
5.  $x$ -axis



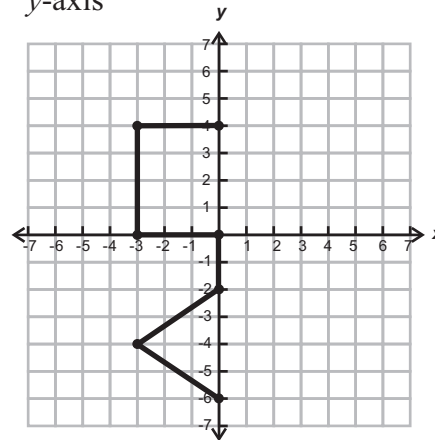
6.  $y$ -axis



7.  $x$ -axis

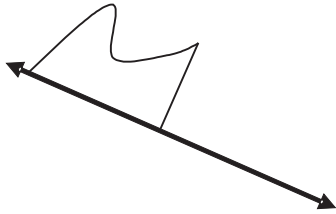


8.  $y$ -axis

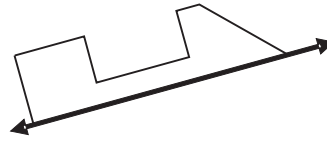


Complete the figure so it is symmetric about the given line.

9.

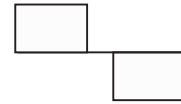
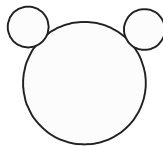


10.



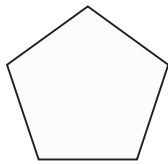
Circle the figures that have rotational symmetry.

11.

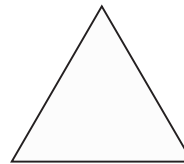


List all the angles of rotational symmetry. Then, name the order of the rotational symmetry. Last, tell if the figure has point symmetry.

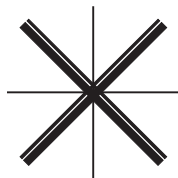
12.



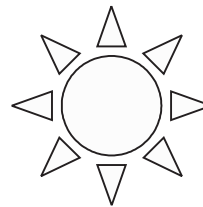
13.



14.



15.



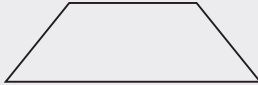
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**Module 11 Transformation of Shapes**

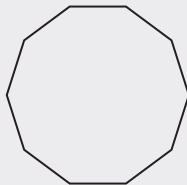
**Lesson 4 Symmetry**

**Journal**

1. Erin said the trapezoid has a horizontal line of symmetry. Brian said it has a vertical line of symmetry. Who is correct and why?



2. Explain how a regular decagon has both line symmetry and rotational symmetry. Then, tell how to determine the angles of rotation.



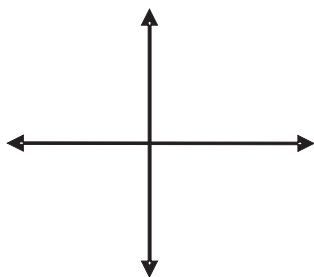
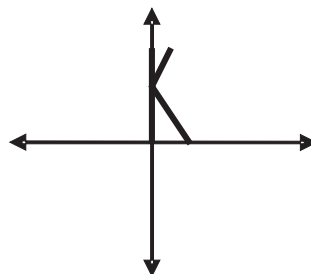
3. Explain what it means for a figure to have point symmetry. Draw two figures with rotational symmetry such that one has point symmetry and the other does not.

**Cumulative Review**

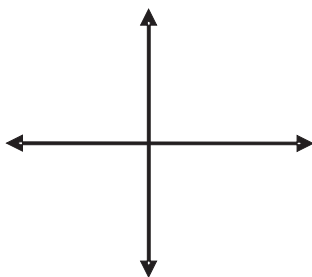
1. The point located at  $(3, 5)$  is translated four units left and seven units down. What are the coordinates of the translated point?
2. The point located at  $(-6, 1)$  is translated one unit up. What are the coordinates of the translated point?
3. The point located at  $(2, -3)$  is reflected over the  $x$ -axis. What are the coordinates of the reflected point?

4. The point located at  $(-1, -8)$  is rotated  $90^\circ$  counterclockwise about the origin. What are the coordinates of the rotated point?

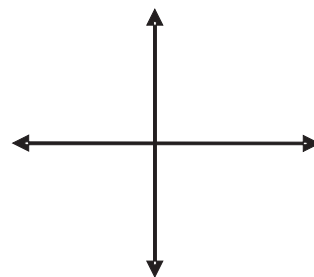
5. Rotate the figure  $90^\circ$ ,  $180^\circ$ , and  $270^\circ$  counterclockwise about the origin.



$90^\circ$



$180^\circ$



$270^\circ$

6. A line segment with endpoints at  $(-2, 4)$  and  $(5, -3)$  is dilated with a scale factor of 1.5. What are the coordinates of the endpoints of the dilated segment?

# Additional Work Area