NAME_____ DATE_____

Module Test B — Module 11

Fill in the blanks with one of the following words:

translation reflection rotation dilation tessellation enlargement reduction pentagon hexagon regular semi-regular

1. A _____ is a transformation that slides a figure.
(translation)

2. A transformation that turns a figure about a fixed point is a _____.
(rotation)

3. A dilation with a scale factor of 0.5 is a(n) _____.
(reduction)

4. A tessellation formed with only equilateral triangles is a _____ tessellation.
(regular)

5. A regular _____ is a polygon with rotational, but not point, symmetry.
(pentagon)

Circle the correct answer for each problem.

6. The point located at (7, -4) is translated two units left and five units up. What are the coordinates of the translated point?

a. (5, -9) b. (5, 1) c. (9, -9) d. (9, 1)

b. (5, 1)

7. Which figure has point symmetry?

a. b. c. d.

c.

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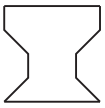
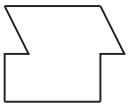
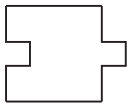
8. Which figure will *not* tessellate?

a. 

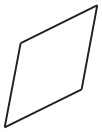
b. 

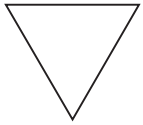
c. 

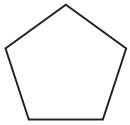
d.

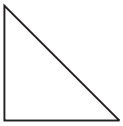
a.

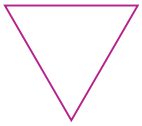
9. Which figure has *exactly* three lines of symmetry?

a. 

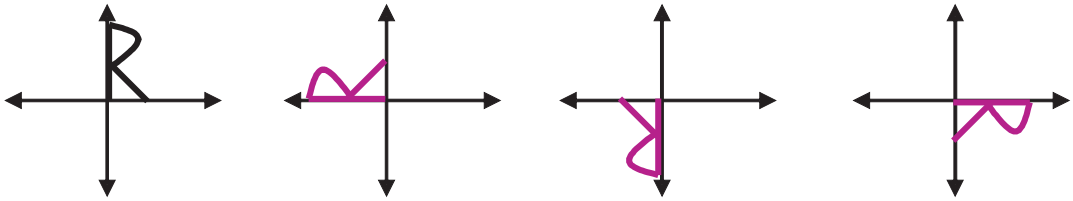
b. 

c. 

d. 

b. 

10. Rotate the figure 90°, 180°, and 270° with the origin as the center of rotation.



90° **180°** **270°**

11. A triangle whose vertices are at (-6, -2), (0, -8), and (4, -5) is reflected across the *x*-axis. What are the coordinates of the vertices of the reflected triangle?

(-6, 2), (0, 8), and (4, 5)

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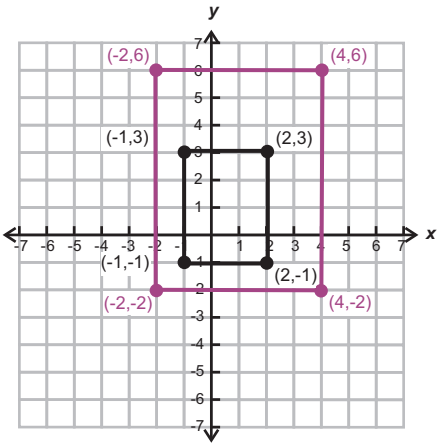
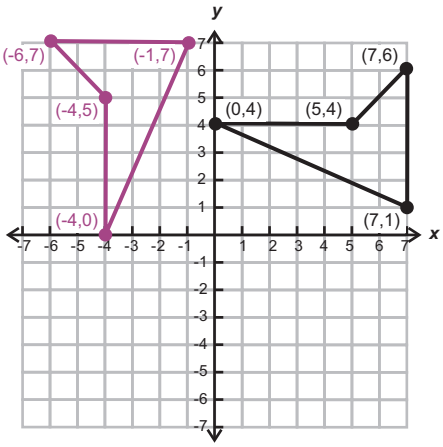
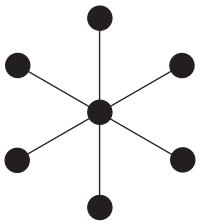
12. Graph the image under a dilation with a scale factor 2.



13. Rotate the figure 90° counterclockwise with the origin as the center of rotation.

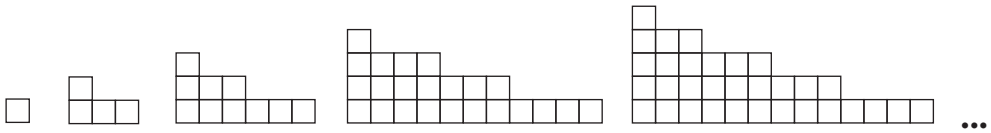


14. The figure at right has rotational symmetry. Find the order of rotation and the angles of rotation. Explain how you found your answers.



The order of rotation is how many times within one full turn that the figure rotates onto itself. This happens six times so the order of rotation is six. To find the angles of rotation, divide 360° by the order: 360° ÷ 6 = 60°. The figure rotates onto itself every 60°, so list the multiples of 60° up to, but excluding 360°: 60°, 120°, 180°, 240°, and 300°.

15. How many squares are in the ninth term of the sequence? Explain how you know.



There are 109 squares in the ninth term. I found a pattern. The second term has three more squares than the first, the third has six more than the second, the fourth has nine more than the third and so on. I continued the pattern of +3, +6, +9, +12... until I reached the ninth term which was 85 + 24.

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