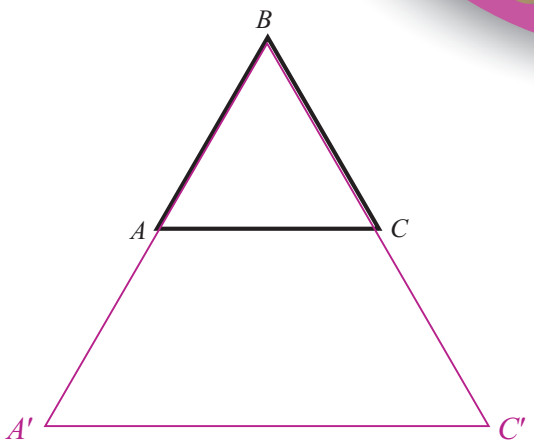
NAME_____

Module 11 **Transformations of Shapes**
Lesson 3 **Dilations**

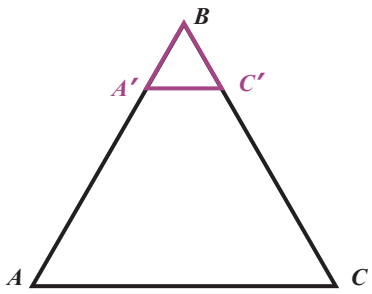
Independent Practice 11.3

Construct a dilation with the given center and scale factor.

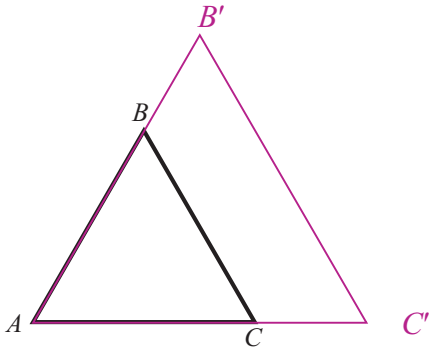
1. Center: *B*; scale factor: 2



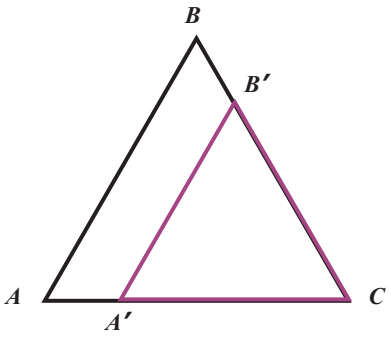
2. Center: *B*; scale factor: 0.25



3. Center: *A*; scale factor: 1.5



4. Center: *C*; scale factor: 0.75



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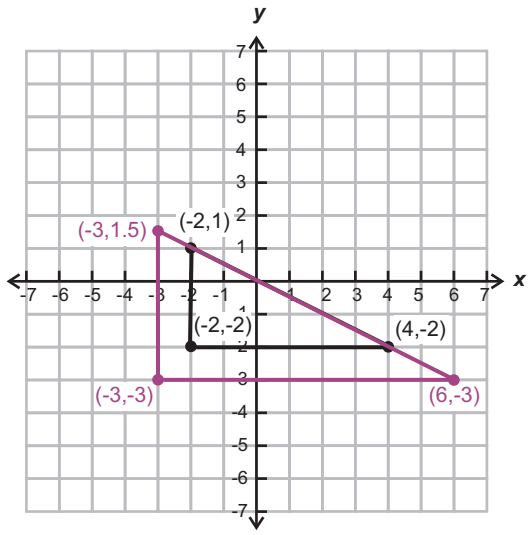
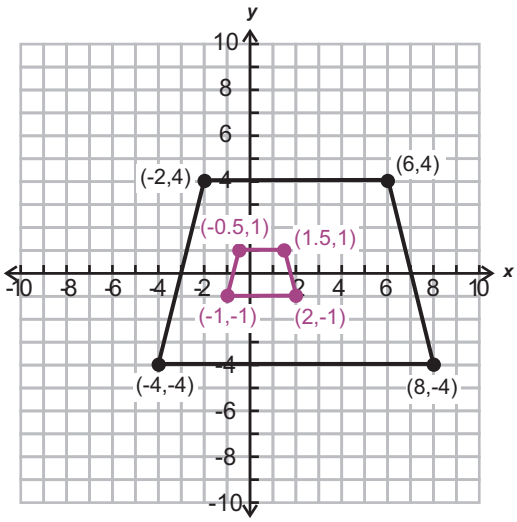
Draw the dilation with the given scale factor. The center of dilation is (0, 0).

5. Scale factor: 1.5

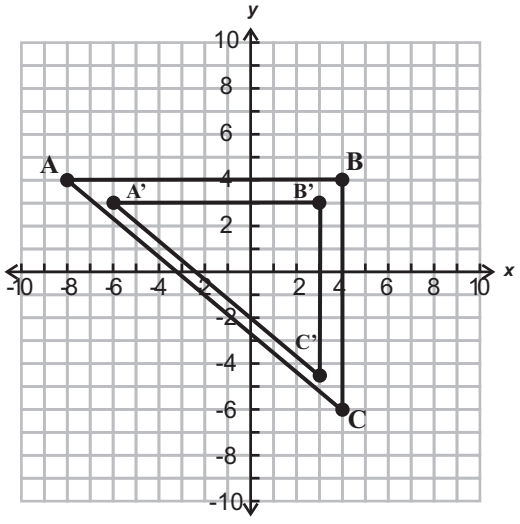


6. Scale factor: $\frac{1}{4}$



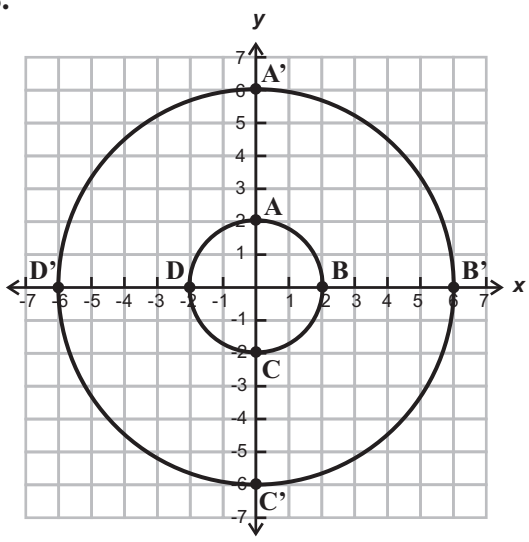
Find the scale factor used in the dilation.

7.



$\frac{3}{4}$

8.



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Module 11 **Transformations of Shapes**
Lesson 3 **Dilations**

Journal

1. How is a dilation like a translation? How is it different?

2. How can you determine if an image created by a dilation will be an enlargement or reduction by just looking at the scale factor?

3. What must be true about the scale factor of a dilation if the original figure and image figure are congruent? Explain.

Cumulative Review

Find the coordinates of the image of each ordered pair under a translation with a motion rule of $(x, y) \rightarrow (x + 8, y - 1)$.

1. (6, -4) **(14, -5)**

2. (-3, -3) **(5, -4)**

3. (-5, 9) **(3, 8)**

4. (0, -2) **(8, -3)**

Find the coordinates of the image of each ordered pair under a reflection across the *y*-axis.

5. (1, -3) **(-1, -3)**

6. (8, 7) **(-8, 7)**

7. (-5, 4) **(5, 4)**

8. (-8, -3) **(8, -3)**

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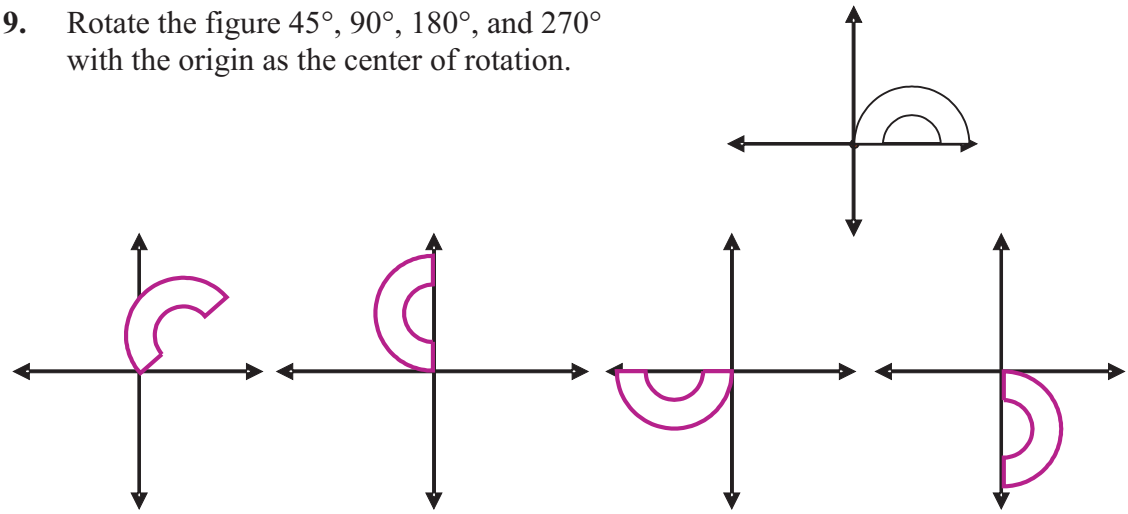
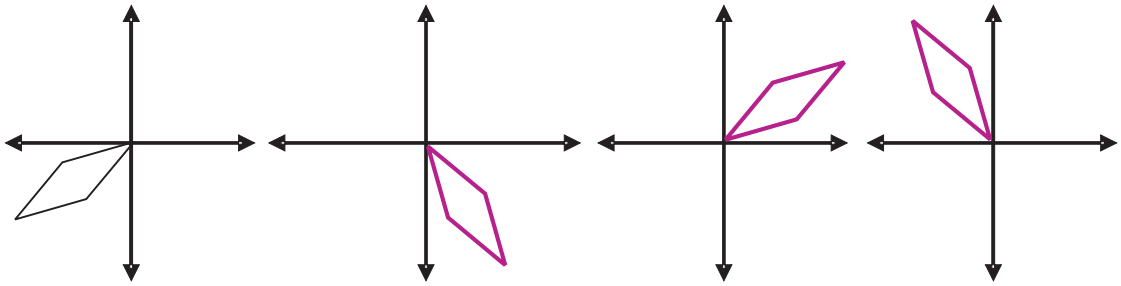
9. Rotate the figure 45°, 90°, 180°, and 270° with the origin as the center of rotation.



45° **90°** **180°** **270°**

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



90° **180°** **270°**

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Module 11 Transformations of Shapes
Lesson 3 Dilations

Possible Journal Answers

1. **A dilation and translation are the same in that they are both transformations. They both change figures. Neither changes the shape of the figure, but translations retain the size of the figure, while dilations do not. In both translations and dilations, the original and image figures are similar; in translations, they are congruent.**

2. **The dilation will be an enlargement if the scale factor is greater than one. The dilation will be reduction if the scale factor is between zero and one.**

3. **In a dilation, if the original and image figures are congruent, then the scale factor is one. This is because multiplying a distance by one results in the same distance. Every image point will be the same distance from the center of dilation as was the corresponding original point.**

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