Name _____ Date _____

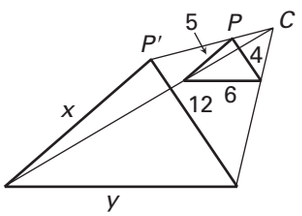
LESSON 9.7

Practice B

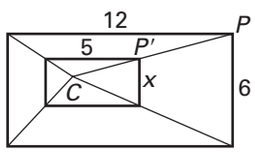
For use with pages 625–633

Find the scale factor. Tell whether the dilation is a *reduction* or an *enlargement*. Then find the values of the variables.

1.

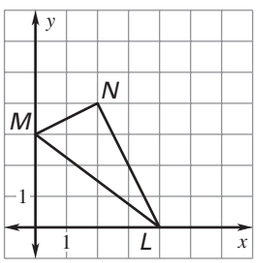


2.

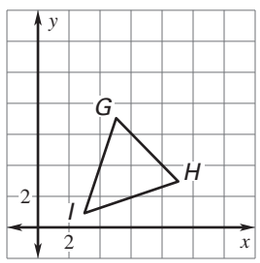


Use the origin as the center of the dilation and the given scale factor to find the coordinates of the vertices of the image of the polygon.

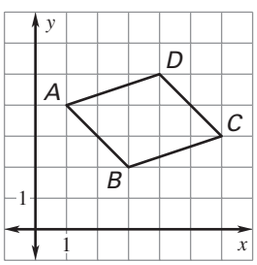
3. $k = 3$



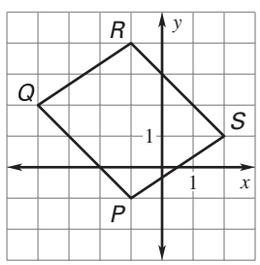
4. $k = \frac{1}{3}$



5. $k = 2$



6. $k = \frac{5}{2}$



A dilation maps *A* to *A′* and *B* to *B′*. Find the scale factor of the dilation. Find the center of the dilation.

7. $A(4, 2), A'(5, 1), B(10, 6), B'(8, 3)$

8. $A(1, 6), A'(3, 2), B(2, 12), B'(6, 20)$

9. $A(3, 6), A'(6, 3), B(11, 10), B'(8, 4)$

10. $A(-4, 1), A'(-5, 3), B(-1, 0), B'(1, 1)$

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LESSON 9.7

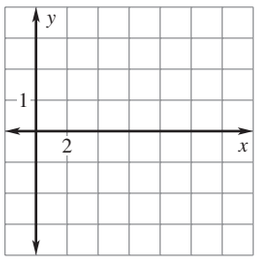
Practice B *continued*

For use with pages 625–633

The vertices of $\square ABCD$ are $A(1, 1)$, $B(3, 5)$, $C(11, 5)$, and $D(9, 1)$. Graph the image of the parallelogram after a composition of the transformations in the order they are listed.

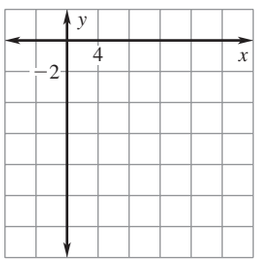
11. **Translation:** $(x, y) \rightarrow (x + 5, y - 2)$

Dilation: centered at the origin with a scale factor of $\frac{3}{5}$



12. **Dilation:** centered at the origin with a scale factor of 2

Reflection: in the x-axis



In Exercises 13–15, use the following information.

Flashlight Image You are projecting images onto a wall with a flashlight. The lamp of the flashlight is 8.3 centimeters away from the wall. The preimage is imprinted onto a clear cap that fits over the end of the flashlight. This cap has a diameter of 3 centimeters. The preimage has a height of 2 centimeters and the lamp of the flashlight is located 2.7 centimeters from the preimage.

13. Sketch a diagram of the dilation.

14. Find the diameter of the circle of light projected onto the wall from the flashlight.

15. Find the height of the image projected onto the wall.