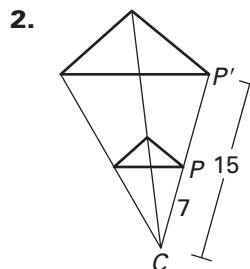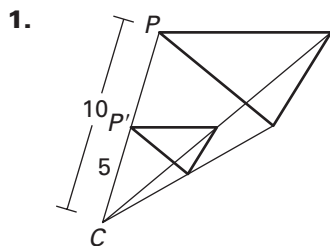**LESSON 9.7**  **Practice A**
*For use with pages 625–633*

If you turn this in on time: do the odds.
If you turn this in late or
you are doing it over:  do the evens.

Teacher
Score:
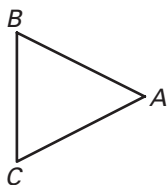
**Find the scale factor. Tell whether the dilation is a *reduction* or an *enlargement*.**

**1.**



**2.**



**3.** Copy $\triangle ABC$. Then construct a dilation of $\triangle ABC$ with point $A$ as the center of dilation and a scale factor of 2.



**Simplify the product.**

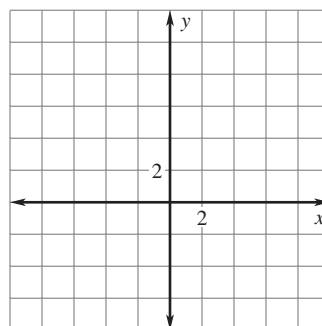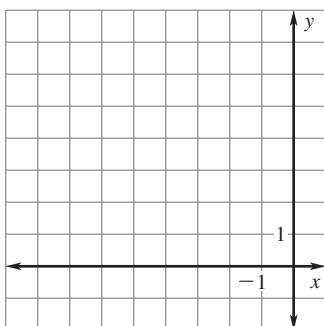**4.** $2\begin{bmatrix} -4 & 3 & -2 \\ 1 & 7 & 0 \end{bmatrix}$

**5.** $\dfrac{2}{3}\begin{bmatrix} 6 & -9 & 0 \\ 12 & 4.5 & -6 \end{bmatrix}$

**6.** $-3\begin{bmatrix} 0 & -11 & -2 \\ 1 & 8 & 7 \end{bmatrix}$

**Find the image matrix that represents a dilation of the polygon centered at the origin with the given scale factor. Then graph the polygon and its image.**

**7.** $\begin{array}{ccc} A & B & C \end{array}$
$\begin{bmatrix} -6 & -4 & -2 \\ 2 & 4 & 2 \end{bmatrix}; k = \dfrac{1}{2}$



**8.** $\begin{array}{cccc} A & B & C & D \end{array}$
$\begin{bmatrix} -3 & -2 & 0 & 3 \\ -2 & 1 & 3 & 4 \end{bmatrix}; k = 2$

Name _____  Date _____

**The vertices of △ABC are A(1, 2), B(5, 4), and C (7, 1). Graph the image of the triangle after a composition of the transformations in the order they are listed.**

**9.**  **Translation:** $(x, y) \rightarrow (x - 7, y)$
   **Dilation:** centered at the origin with a scale factor of 2
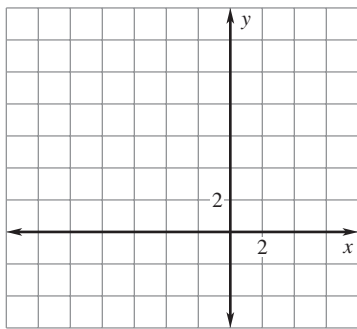


**10.**  **Dilation:** centered at the origin with a scale factor of $\frac{1}{2}$

   **Reflection:** in the *x*-axis
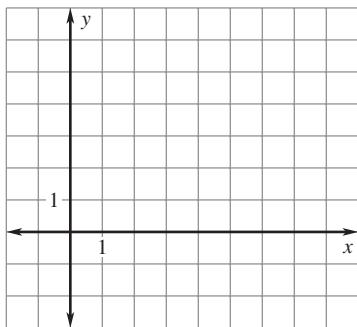


**In Exercises 11 and 12, use the following information.**

**Flashlight Image**  You are projecting images onto a wall with a flashlight. The lamp of the flashlight is 10 centimeters away from the wall. The preimage is imprinted onto a clear cap that fits over the end of the flashlight. The preimage has a height of 2 centimeters and the lamp of the flashlight is located 2.5 centimeters from the preimage.

**11.**  What is the scale factor of the dilation?

**12.**  Write and solve a proportion to find the height of the image projected onto the wall.