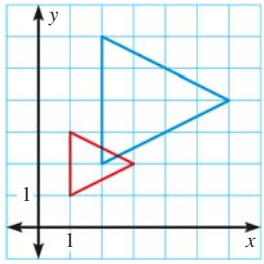
EXAMPLE **Dilate the triangle using a scale factor of $\frac{1}{2}$.**

Multiply each coordinate of each vertex by $\frac{1}{2}$ to find the coordinates of the image. Plot the image of each vertex. Connect the image points to form a triangle.

$(2, 6) \rightarrow (1, 3)$

$(2, 2) \rightarrow (1, 1)$

$(6, 4) \rightarrow (3, 2)$



PRACTICE

The coordinates of the vertices of a polygon are given. Draw the polygon. Then find the coordinates of the vertices of the image after the specified translation, and draw the image.

1. (1, 5), (3, 4), (3, 1); translate 3 units to the right and 2 units up

2. (5, 0), (7, 0), (7, 2), (5, 2); translate 4 units to the left and 5 units up

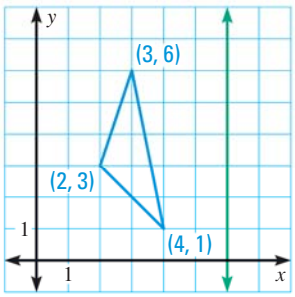
3. (4, 4), (6, 4), (6, 7); translate 3 units to the left and 3 units down

4. (2, 1), (4, 1), (4, 6), (2, 6); translate 5 units to the right

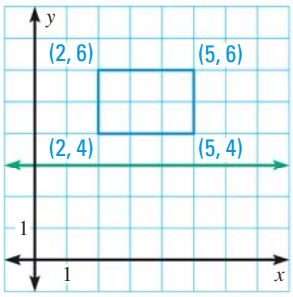
5. (4, 5), (7, 2), (3, 3); translate 1 unit down

For the figure shown, find the coordinates of the vertices of the image after a reflection in the given line. Then draw the image.

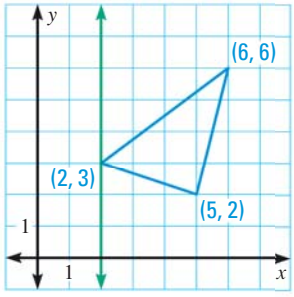
6.



7.



8.



The coordinates of the vertices of a polygon are given. Draw the polygon. Then find the coordinates of the vertices of the image after the specified dilation, and draw the image.

9. (1, 2), (2, 4), (5, 3); dilate using a scale factor of 2

10. (2, 6), (6, 6), (6, 2), (2, 2); dilate using a scale factor of $\frac{1}{2}$

11. (1, 3), (3, 3), (3, 1), (1, 1); dilate using a scale factor of 4

12. (3, 9), (6, 9), (6, 3); dilate using a scale factor of $\frac{1}{3}$

13. (0, 2), (4, 4), (6, 0); dilate using a scale factor of $1\frac{1}{2}$