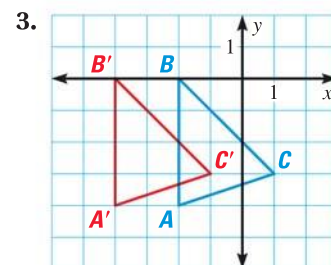
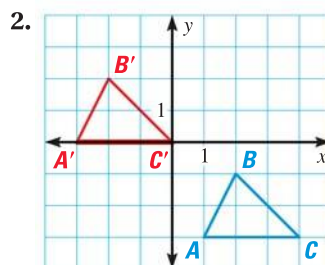
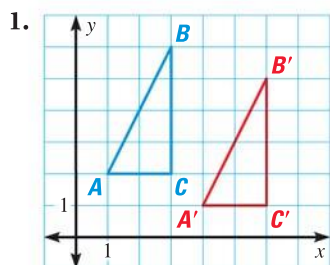


Write a rule for the translation of $\triangle ABC$ to $\triangle A'B'C'$. Then verify that the translation is an isometry.



Add, subtract, or multiply.

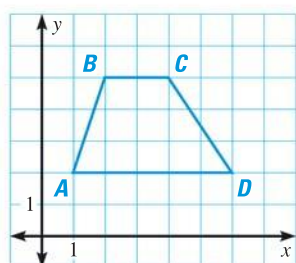
4. $\begin{bmatrix} 3 & -8 \\ 9 & 4.3 \end{bmatrix} + \begin{bmatrix} -10 & 2 \\ 5.1 & -5 \end{bmatrix}$

5. $\begin{bmatrix} -2 & 2.6 \\ 0.8 & 4 \end{bmatrix} - \begin{bmatrix} 6 & 9 \\ -1 & 3 \end{bmatrix}$

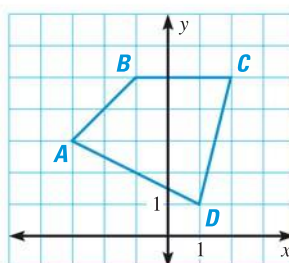
6. $\begin{bmatrix} 7 & -3 & 2 \\ 5 & 1 & -4 \end{bmatrix} \begin{bmatrix} 1 \\ 0 \\ 3 \end{bmatrix}$

Graph the image of the polygon after the reflection in the given line.

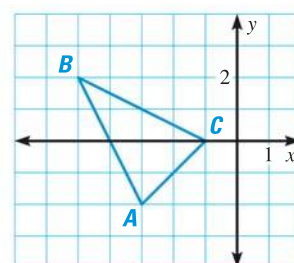
7. x -axis



8. $y = 3$



9. $y = -x$



Find the image matrix that represents the rotation of the polygon. Then graph the polygon and its image.

10. $\triangle ABC$: $\begin{bmatrix} 2 & 4 & 6 \\ 2 & 5 & 1 \end{bmatrix}$; 90° rotation

11. $KLMN$: $\begin{bmatrix} -5 & -2 & -3 & -5 \\ 0 & 3 & -1 & -3 \end{bmatrix}$; 180° rotation

The vertices of $\triangle PQR$ are $P(-5, 1)$, $Q(-4, 6)$, and $R(-2, 3)$. Graph $\triangle P''Q''R''$ after a composition of the transformations in the order they are listed.

12. Translation: $(x, y) \rightarrow (x - 8, y)$
Dilation: centered at the origin, $k = 2$

13. Reflection: in the y -axis
Rotation: 90° about the origin

Determine whether the flag has *line symmetry* and/or *rotational symmetry*. Identify all lines of symmetry and/or angles of rotation that map the figure onto itself.

