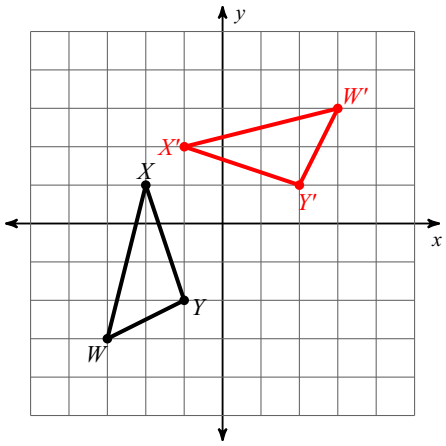
Accl Precalculus Name_____

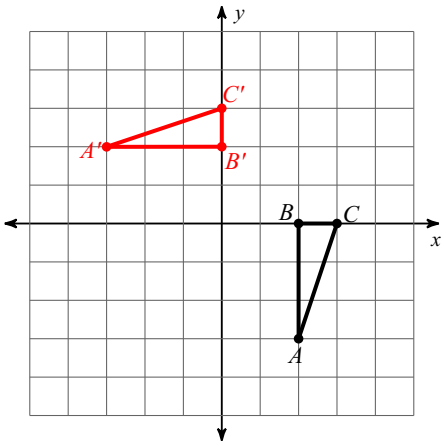
WS 1.9

Graph the image of the figure using the transformation given and determine the matrix that produces the transformation.

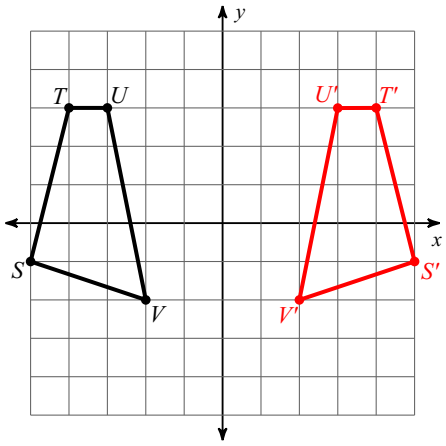
1) reflection across $y = -x$



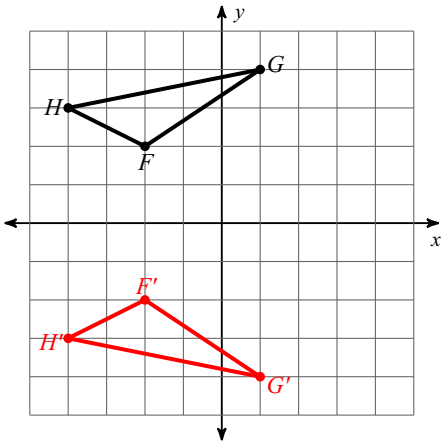
2) reflection across $y = x$



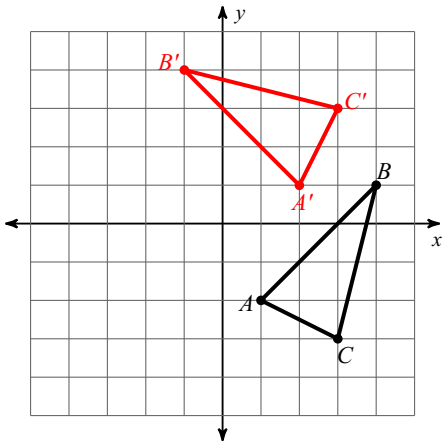
3) reflection across the y-axis



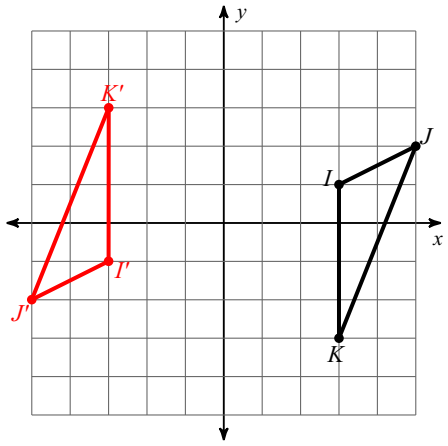
4) reflection across the x-axis



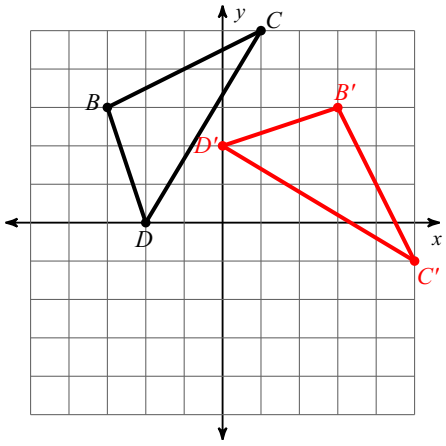
5) rotation 90° counterclockwise about the origin



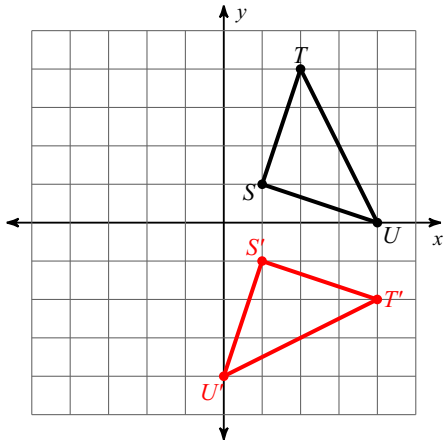
6) rotation 180° about the origin



7) rotation 270° counterclockwise about the origin



8) rotation 270° counterclockwise about the origin



Use matrices to find the coordinates of the vertices of each figure after the given transformation.

9) rotation 180° about the origin $\begin{bmatrix} -1 & -1 & 3 \\ -4 & 1 & -3 \end{bmatrix}$ $\begin{bmatrix} 1 & 1 & -3 \\ 4 & -1 & 3 \end{bmatrix}$

10) reflection across $y = x$ $\begin{bmatrix} -4 & -2 & -2 \\ -1 & 0 & -4 \end{bmatrix}$ $\begin{bmatrix} -1 & 0 & -4 \\ -4 & -2 & -2 \end{bmatrix}$

11) rotation 90° counterclockwise about the origin $\begin{bmatrix} -5 & -5 & -2 \\ 2 & 4 & 3 \end{bmatrix}$ $\begin{bmatrix} -2 & -4 & -3 \\ -5 & -5 & -2 \end{bmatrix}$

12) rotation 90° clockwise about the origin $\begin{bmatrix} -3 & 2 & 2 \\ -3 & -2 & -4 \end{bmatrix}$ $\begin{bmatrix} -3 & -2 & -4 \\ 3 & -2 & -2 \end{bmatrix}$

13) reflection across the x-axis $\begin{bmatrix} 1 & 1 & 4 \\ -3 & -2 & -2 \end{bmatrix}$ $\begin{bmatrix} 1 & 1 & 4 \\ 3 & 2 & 2 \end{bmatrix}$

14) reflection across $y = -x$ $\begin{bmatrix} 0 & 0 & 5 & 1 \\ 4 & 5 & 3 & 1 \end{bmatrix}$ $\begin{bmatrix} -4 & -5 & -3 & -1 \\ 0 & 0 & -5 & -1 \end{bmatrix}$