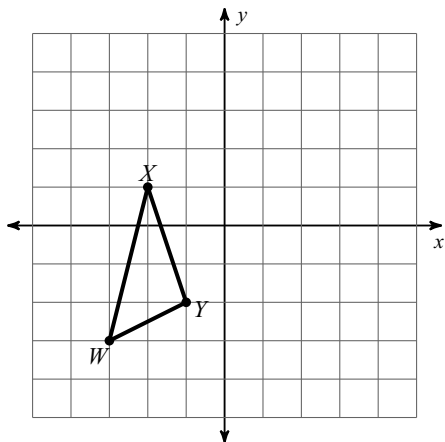


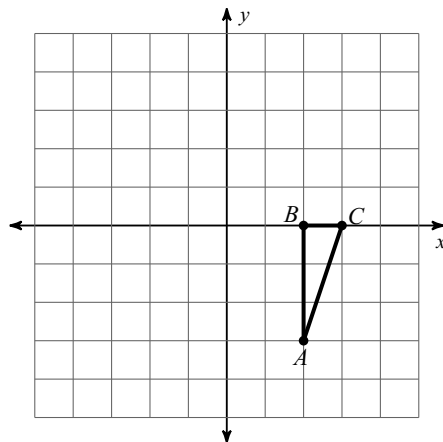
WS 1.9

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

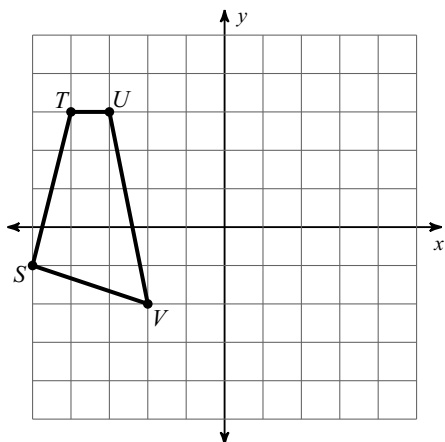
1) reflection across  $y = -x$



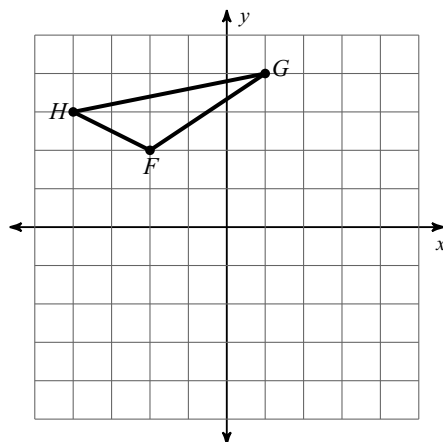
2) reflection across  $y = x$



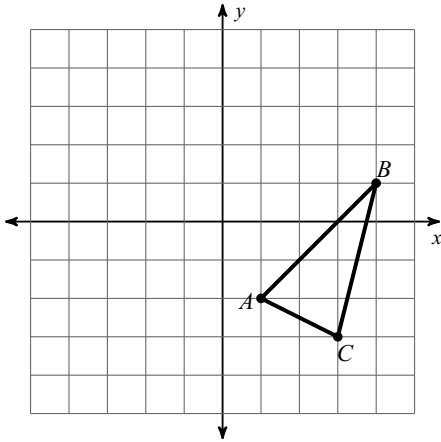
3) reflection across the y-axis



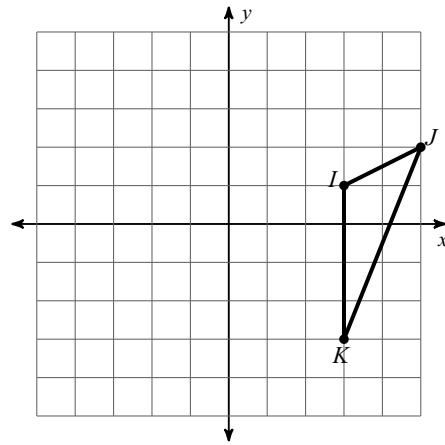
4) reflection across the x-axis



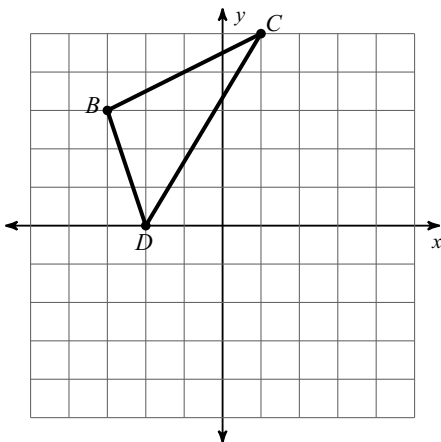
5) rotation  $90^\circ$  counterclockwise about the origin



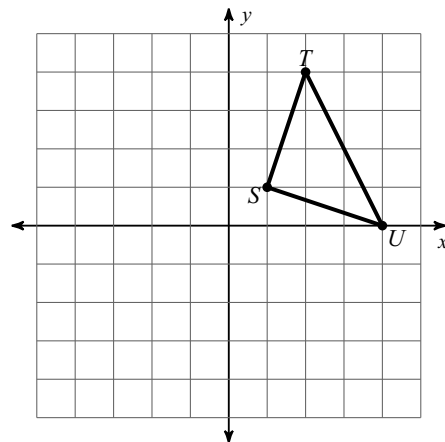
6) rotation  $180^\circ$  about the origin



7) rotation  $270^\circ$  counterclockwise about the origin



8) rotation  $270^\circ$  counterclockwise about the origin



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

9) rotation  $180^\circ$  about the origin

$$\begin{bmatrix} -1 & -1 & 3 \\ -4 & 1 & -3 \end{bmatrix}$$

10) reflection across  $y = x$

$$\begin{bmatrix} -4 & -2 & -2 \\ -1 & 0 & -4 \end{bmatrix}$$

11) rotation  $90^\circ$  counterclockwise about the origin

$$\begin{bmatrix} -5 & -5 & -2 \\ 2 & 4 & 3 \end{bmatrix}$$

12) rotation  $90^\circ$  clockwise about the origin

$$\begin{bmatrix} -3 & 2 & 2 \\ -3 & -2 & -4 \end{bmatrix}$$

13) reflection across the x-axis

$$\begin{bmatrix} 1 & 1 & 4 \\ -3 & -2 & -2 \end{bmatrix}$$

14) reflection across  $y = -x$

$$\begin{bmatrix} 0 & 0 & 5 & 1 \\ 4 & 5 & 3 & 1 \end{bmatrix}$$