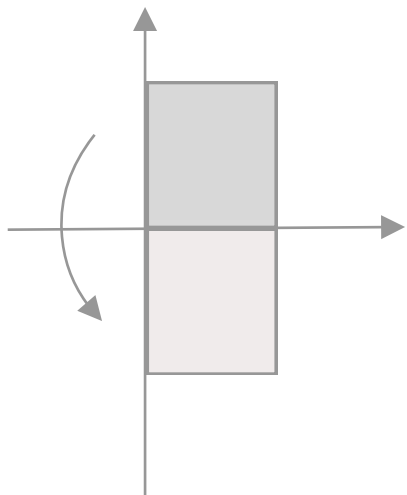## reflection over X

$$\begin{bmatrix} X \\ Y \\ 1 \end{bmatrix} \times \begin{bmatrix} 1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{bmatrix} = \begin{bmatrix} X' \\ Y' \\ 1 \end{bmatrix}$$

reflection over Y

$$\begin{bmatrix} X \\ Y \\ 1 \end{bmatrix} \times \begin{bmatrix} -1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix} = \begin{bmatrix} X' \\ Y' \\ 1 \end{bmatrix}$$