TAKING A TO BE DIFFERENT MATRICES YIELDS

$\begin{bmatrix} -1 & 0 \\ 0 & 1 \end{bmatrix}$ ABOUT Y-AXIS

$\begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix}$ ABOUT x-AXIS

$\begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$ ABOUT $Y = X$

$\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & -1 \end{bmatrix}$ ABOUT XY PLANE

$\begin{bmatrix} 1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$ ABOUT XZ PLANE

$\begin{bmatrix} -1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$ ABOUT YZ PLANE

} REFLECTIONS

$\begin{bmatrix} 1 & 0 \\ 0 & 0 \end{bmatrix}$ ONTO X-AXIS

$\begin{bmatrix} 0 & 0 \\ 0 & 1 \end{bmatrix}$ ONTO Y-AXIS

$\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 0 \end{bmatrix}$ ONTO XY PLANE

$\begin{bmatrix} 1 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 1 \end{bmatrix}$ ONTO XZ PLANE

$\begin{bmatrix} 0 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$ ONTO YZ PLANE

} ORTHOGONAL PROJECTIONS

$\begin{bmatrix} \cos\theta & -\sin\theta \\ \sin\theta & \cos\theta \end{bmatrix}$ ABOUT ORIGIN

$\begin{bmatrix} 1 & 0 & 0 \\ 0 & \cos\theta & -\sin\theta \\ 0 & \sin\theta & \cos\theta \end{bmatrix}$ ABOUT POSITIVE x-AXIS

$\begin{bmatrix} \cos\theta & 0 & \sin\theta \\ 0 & 1 & 0 \\ -\sin\theta & 0 & \cos\theta \end{bmatrix}$ ABOUT POSITIVE Y-AXIS

$\begin{bmatrix} \cos\theta & -\sin\theta & 0 \\ \sin\theta & \cos\theta & 0 \\ 0 & 0 & 1 \end{bmatrix}$ ABOUT POSITIVE z-AXIS

} COUNTER-CLOCKWISE ROTATIONS

$\begin{bmatrix} k & 0 \\ 0 & k \end{bmatrix}$ $\begin{bmatrix} k & 0 & 0 \\ 0 & k & 0 \\ 0 & 0 & k \end{bmatrix}$

} CONTRACTIONS WHEN $0 \leq k \leq 1$
DILATIONS WHEN $k \geq 1$

THE STANDARD MATRIX FOR $T_B \circ T_A(\vec{x})$ IS BA.

THE STANDARD MATRIX FOR $T_C \circ T_B \circ T_A(\vec{x})$ IS CBA.