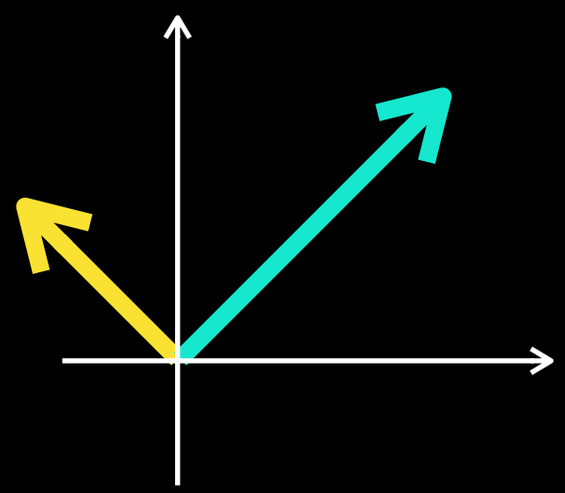
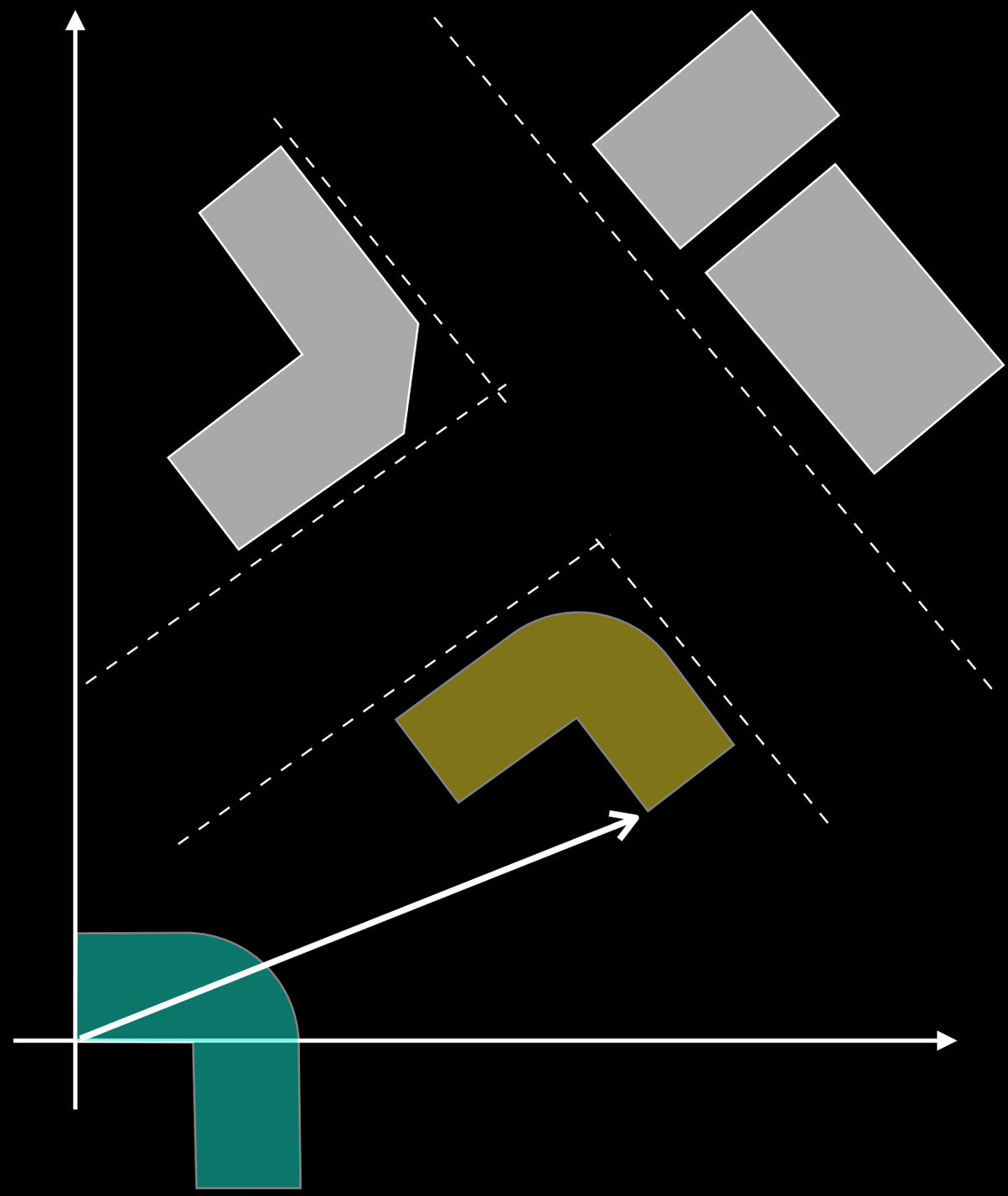
Example: Placing object on the map

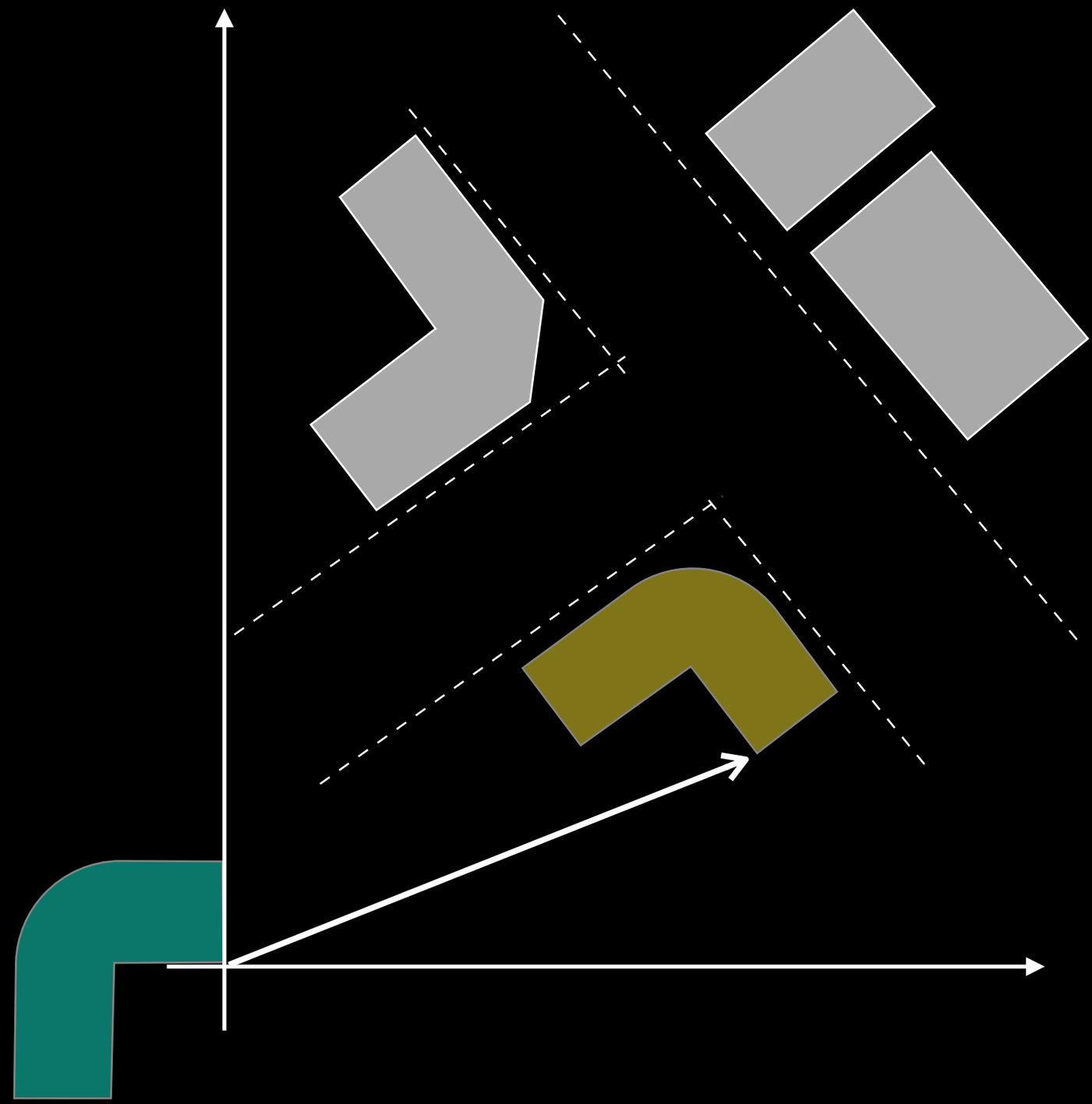
Linear Algebra Essentials



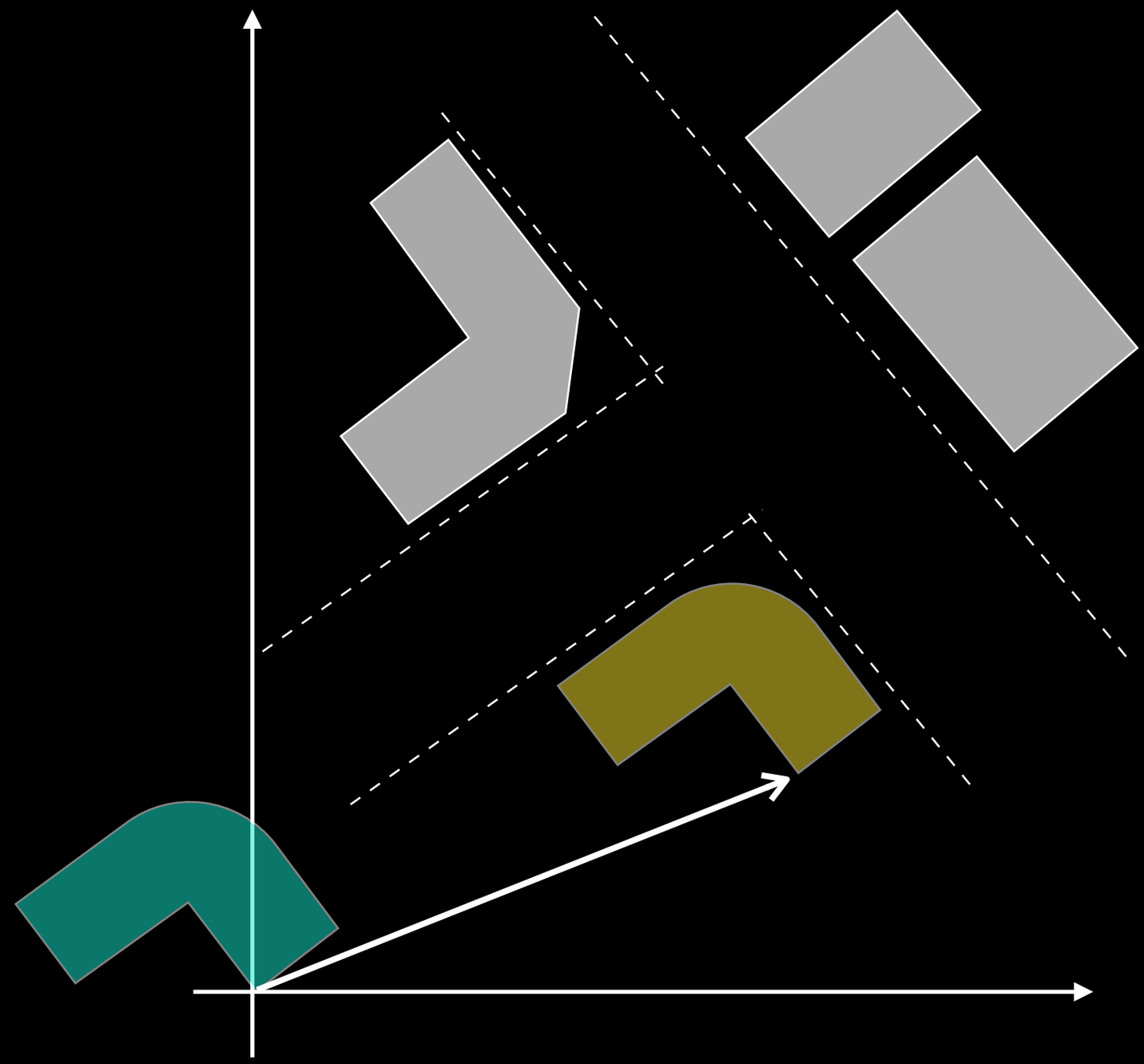
1. Reflect



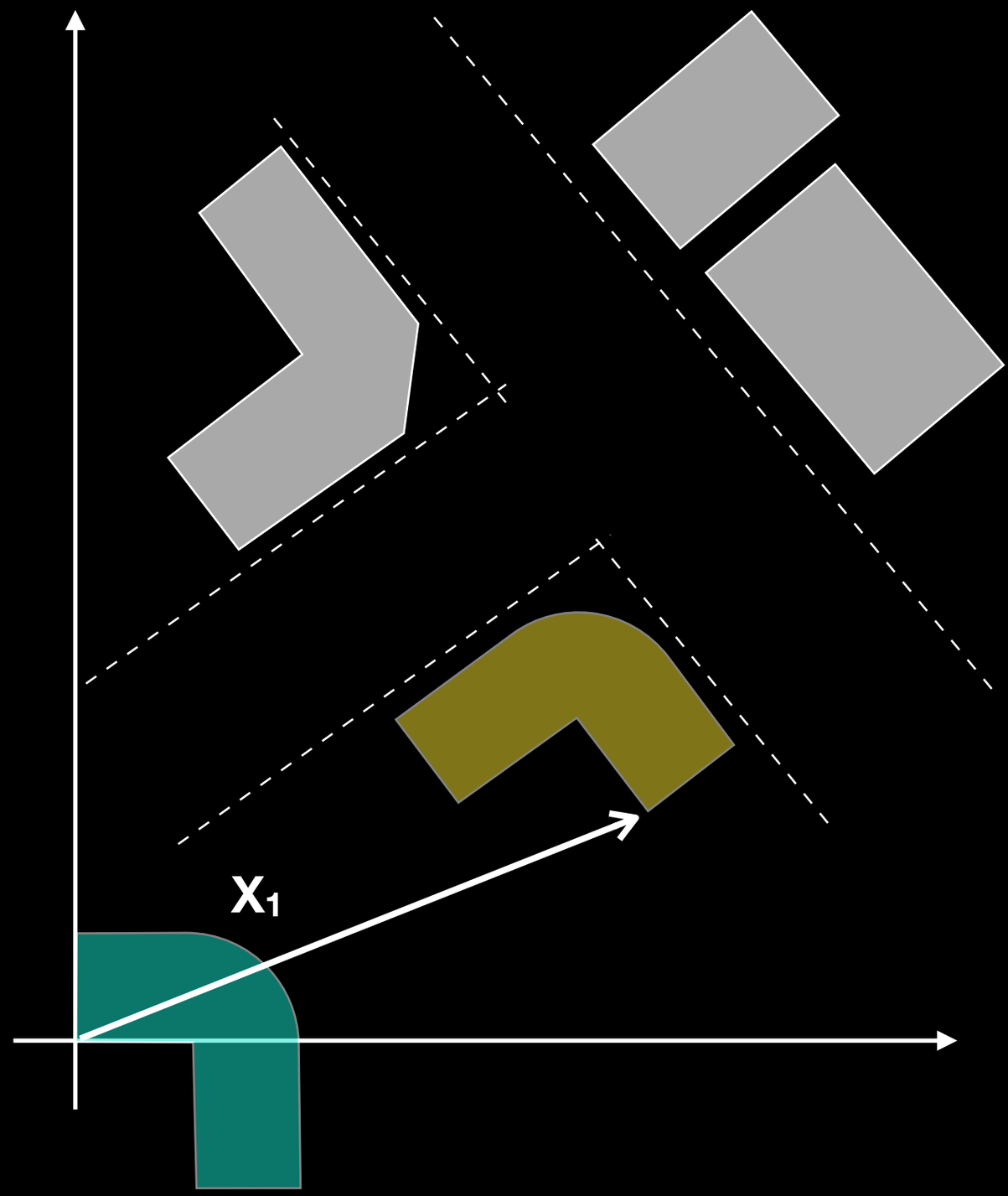
1. Reflect
2. Rotate



1. Reflect
2. Rotate
3. Translate



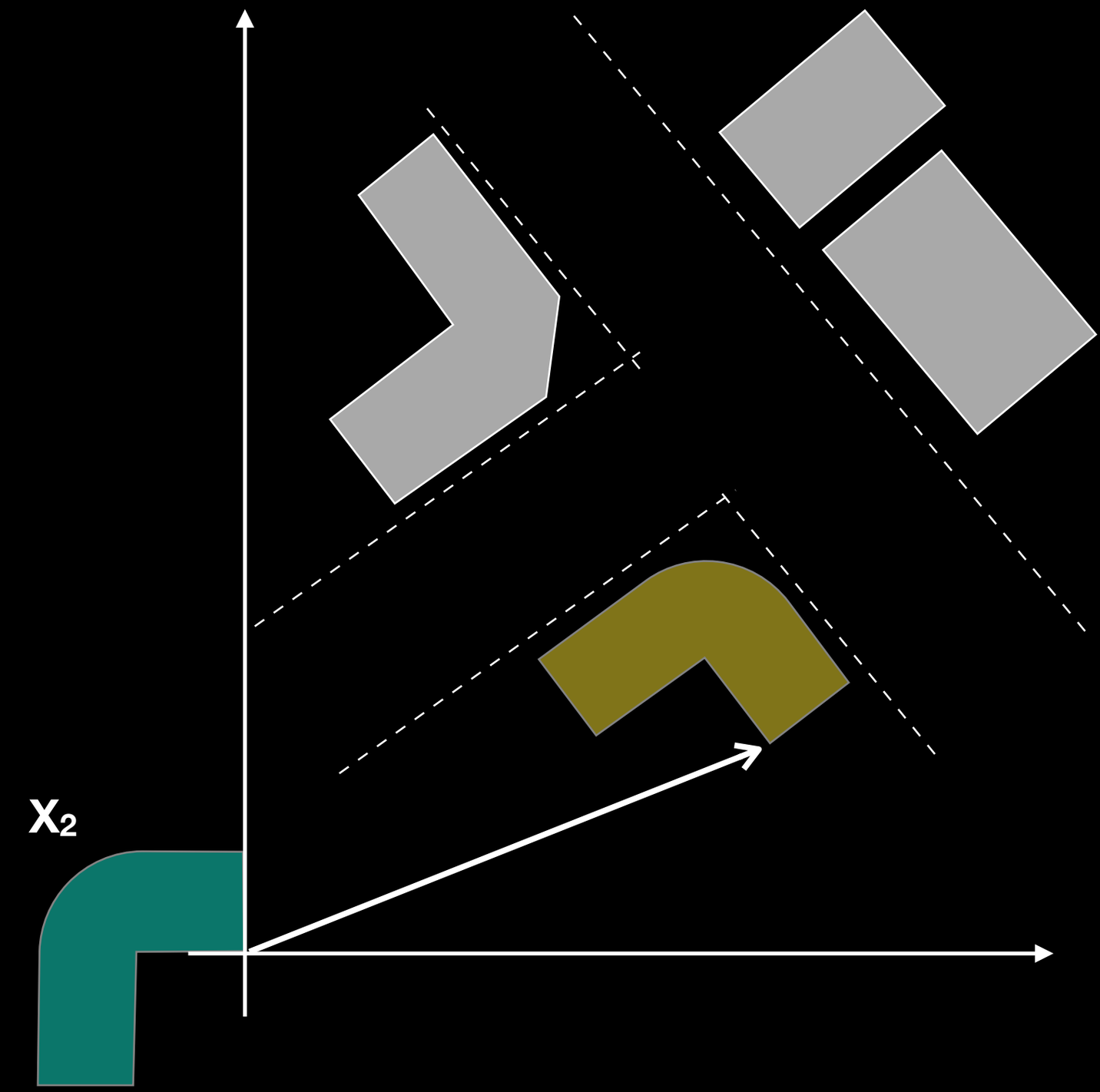
1. Reflect



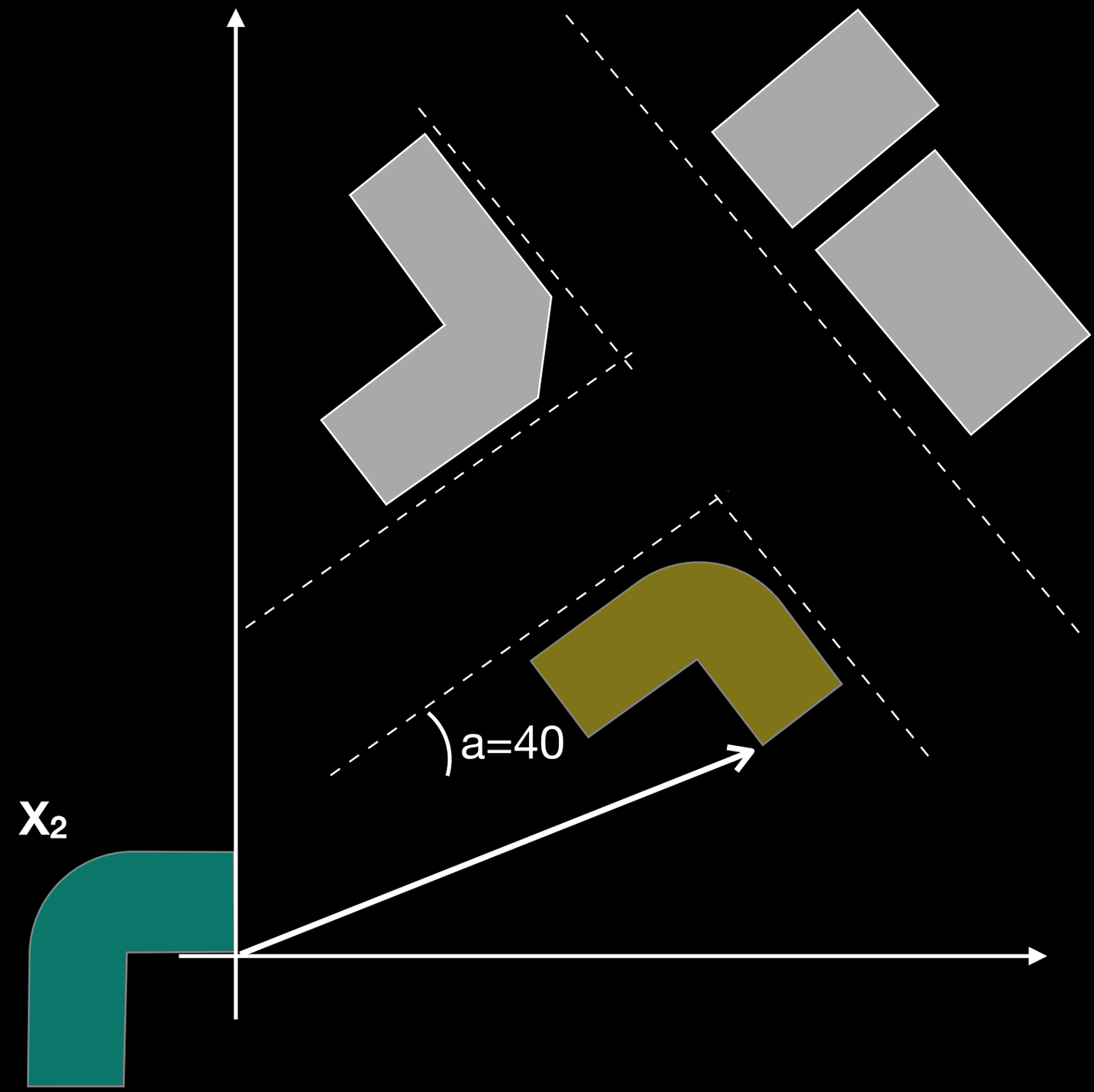
1. Reflect

$$X_2 = S_y \cdot X_1$$

$$X_2 = \begin{bmatrix} -1 & 0 \\ 0 & 1 \end{bmatrix} \cdot X_1$$



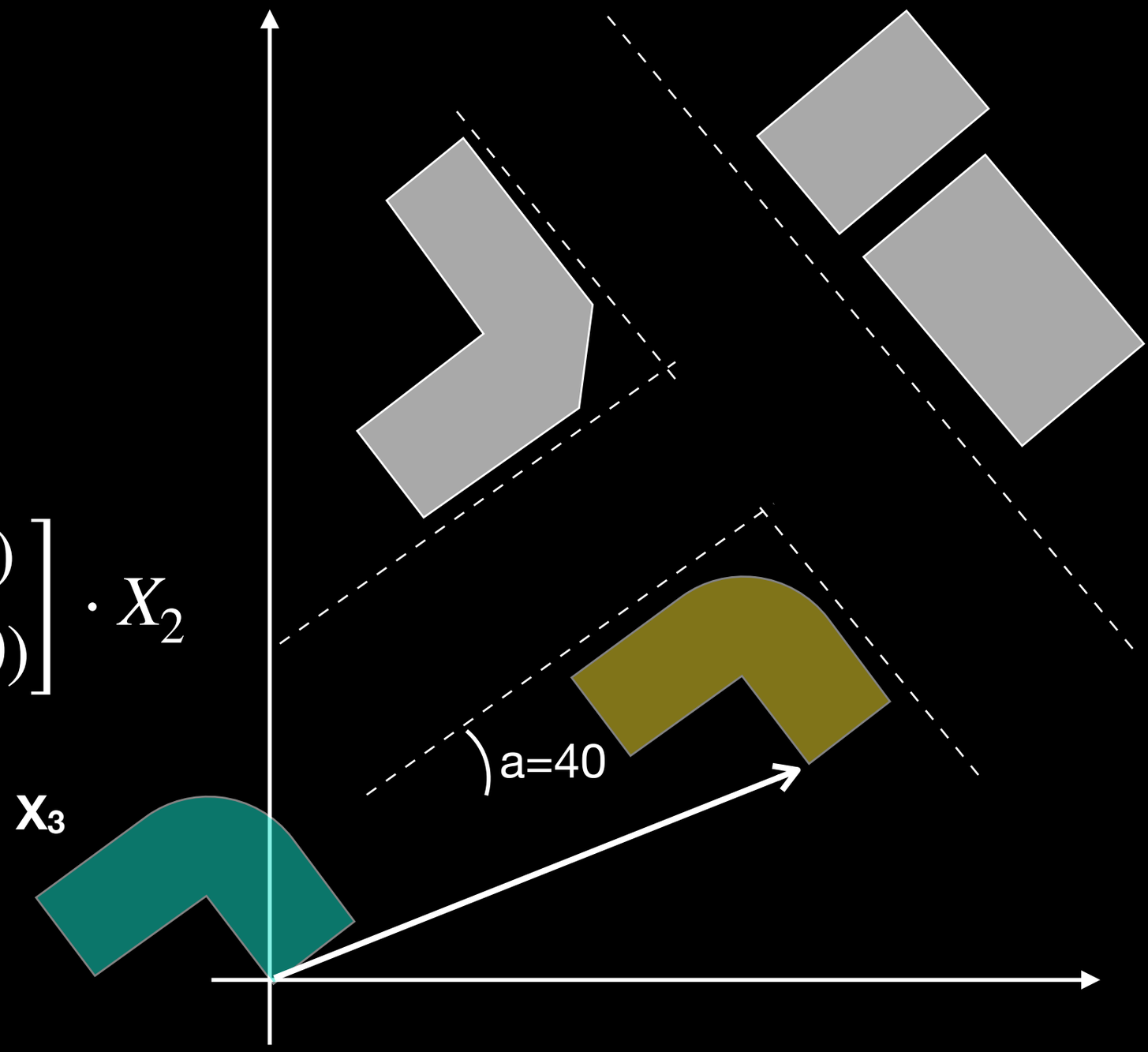
2. Rotate



2. Rotate

$$X_3 = R_{-50} \cdot X_2$$

$$X_3 = \begin{bmatrix} cos(50) & sin(50) \\ -sin(50) & cos(50) \end{bmatrix} \cdot X_2$$



2. Translate

$$X_4 = X_3 + T$$

$$X_4 = R_{-50} X_2 + T$$

$$X_4 = R_{-50} S_y X_1 + T$$