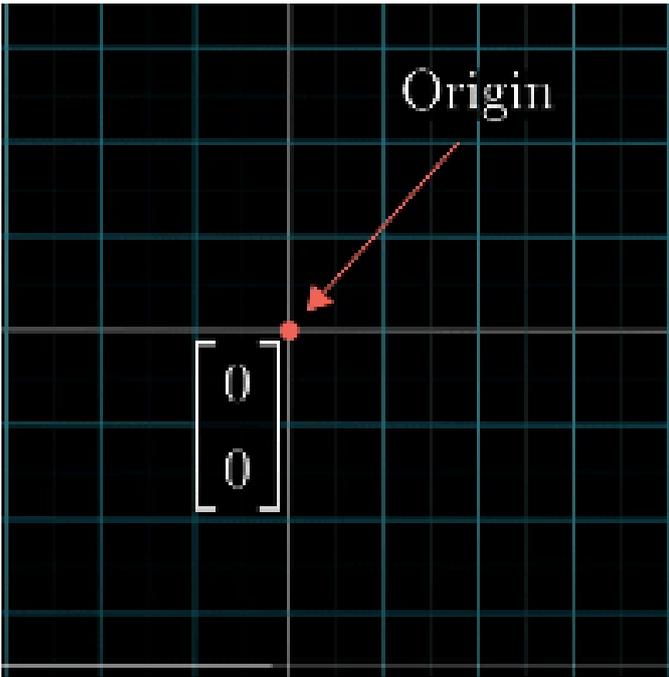


# Basis

basis vectors, linear transformations, matrix multiplications, inverse

When changing basis, Origin (0,0) will always remain the same on both spaces



$$A^{-1}MA$$

This is a standard 90 degree rotation matrix with  $\hat{i}$  and  $\hat{j}$  equal to 1

90° rotation

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



How to translate a matrix

Transformation matrix  
in her language

$$\begin{bmatrix} 2 & -1 \\ 1 & 1 \end{bmatrix}^{-1} \begin{bmatrix} 0 & -1 \\ 1 & 0 \end{bmatrix} \begin{bmatrix} 2 & -1 \\ 1 & 1 \end{bmatrix} \mathbf{v}_1$$

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