8/24/24 Prof not here so YT vid

Examples of Linear transformations

$A\vec{x} = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 0 \end{bmatrix} = \begin{bmatrix} x_1 \\ x_2 \\ 0 \end{bmatrix}$ projects points in $\mathbb{R}^3$ onto the x_1, x_2 plane

$T(\vec{x}) = r\vec{x}$ for $r \in \mathbb{R}$ is a dilation if $r > 1$ contraction

$A\vec{x} = \begin{bmatrix} \cdots & \cdots \\ \cdots & \cdots \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \\ x_3 \\ x_4 \\ x_5 \end{bmatrix}$

5 columns 2 rows

A is a 2x5 matrix