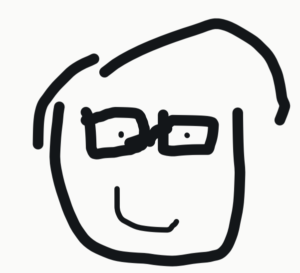
$$\begin{pmatrix} 2 & 3 & 4 \\ 1 & -1 & 2 \end{pmatrix}_{2\times 3} \begin{pmatrix} 1 & 2 \\ 1 & 0 \\ -1 & 1 \end{pmatrix}_{3\times 2} = \begin{pmatrix} 1 & 8 \\ -2 & 4 \end{pmatrix}_{2\times 2}$$

$$\left(A_{m\times n} \cdot B_{n\times p} \longrightarrow m \times p \right.$$

Span$\{v_1, \dots, v_m\}$ is always a subspace

10b) $A = XDX^{-1}$ $\quad \boxed{D = \begin{pmatrix} \lambda_1 & & 0 \\ & \ddots & \\ 0 & & \lambda_n \end{pmatrix}}$



A is nonsingular, $\lambda_1, \dots \lambda_n \neq 0$

$A^{-1} = X D^{-1} X^{-1}$, $\quad D^{-1} = \begin{pmatrix} \frac{1}{\lambda_1} & & 0 \\ & \ddots & \\ 0 & & \frac{1}{\lambda_n} \end{pmatrix}$

eigenvalues of A^{-1}: $\frac{1}{\lambda_1}, \frac{1}{\lambda_2}, \dots, \frac{1}{\lambda_n}$.

$\sum \text{Nullity}(A - \lambda_i I) = n$