

3.1  
1/2

# Intro to Matrices

$$A = \begin{bmatrix} 1 & 0 & 4 \\ 5 & 1 & 0 \end{bmatrix}$$

$$B = \begin{bmatrix} 1 & 1 & 3 & 0 \\ 4 & 2 & 1 & 1 \\ 3 & 2 & 0 & 1 \end{bmatrix}$$

$$C = \begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix}$$

$$D = \begin{bmatrix} 5 & 3 \\ 1 & 2 \end{bmatrix}$$

$$E = \begin{bmatrix} 1 & 0 & 2 \\ 3 & 2 & 1 \\ 4 & 0 & 3 \end{bmatrix}$$

$$F = \begin{bmatrix} 1 & 2 & 3 \\ -1 & 0 & 1 \\ 2 & -3 & -4 \end{bmatrix}$$

Ex1: How many columns does A have.

Ex2: What is the order (size or dim) of A.

Ex3: Write the neg. of A.

Ex4: Write a zero matrix w/ the same order as D.

Ex5: Which matrices are square

Ex6: Are ~~any~~ <sup>any</sup> matrices equal?

Ex7: Which have the same order

Ex8: Write  $b_{23}$  &  $f_{31}$

Ex9: Write  $A^T$  &  $D^T$

$$A = \begin{bmatrix} 3 & -1 & 0 \\ -1 & 2 & 7 \\ 1 & 1 & 4 \end{bmatrix}$$

$$B = \begin{bmatrix} 1 & -1 & 2 & 3 \\ -5 & 8 & 0 & -1 \\ 2 & 6 & -2 & 4 \end{bmatrix}$$

$$C = \begin{bmatrix} -2 & 4 \\ 3 & -1 \end{bmatrix}$$

$$D = \begin{bmatrix} 11 & -7 \\ -3 & -5 \end{bmatrix}$$

$$E = \begin{bmatrix} -4 & 3 & 2 \\ 2 & 7 & -5 \\ 1 & -3 & -2 \end{bmatrix}$$

$$F = \begin{bmatrix} 2 & -3 & -4 \\ -1 & 0 & 1 \\ 3 & 1 & 4 \end{bmatrix}$$

$$Z = \begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix}$$

Ex 10:  $C + D$

Ex 11:  $A + F$

Ex 12:  $A - F$

Ex 13:  $2C - 3D$

Ex 14:  $A + A^T$

Ex 15:  $D + C^T$

Ex 16:  $Z - B$

Ex 17:  $E - 2F$

Ex 18: Solve  $\begin{bmatrix} 0 & x & 1 \\ 3 & y & y \\ z & 0 & 2 \end{bmatrix} = \begin{bmatrix} 0 & y & 1 \\ 3 & 1 & y \\ 1 & 0 & z \end{bmatrix}$

Ex 19: Solve  $\begin{bmatrix} x & 3 & (2x-1) \\ y & 4 & 4y \end{bmatrix} = \begin{bmatrix} (2x-4) & z & 7 \\ 1 & (z+1) & (3y+1) \end{bmatrix}$