Unit 3: Matrices

Lesson 2

EQ:

Since each matrix represents an ______ of data, rules for multiplying them together depends on the ______.

Condition Necessary to Multiply Two Matrices:

$$A \qquad x \qquad B = AB$$

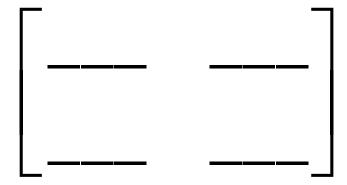
Ex. 1 Matrix D is a ____ by ____. Matrix A is a ____ by ____.
$$D = \begin{bmatrix} 2 & 1 & 3 \\ -2 & 2 & 1 \end{bmatrix}$$
 $A = \begin{bmatrix} 2 & 1 \\ 3 & 2 \\ -2 & 2 \end{bmatrix}$

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

Therefore the product WILL exist. It will be a _____ by ____ matrix.

Process to Multiply Matrices:

Given
$$A = \begin{bmatrix} 1 & 0 \\ -3 & 2 \end{bmatrix}$$
 $B = \begin{bmatrix} -1 & 4 \\ 3 & 5 \end{bmatrix}$, $AB = \begin{bmatrix} -1 & 4 \\ 3 & 5 \end{bmatrix}$



Ex. 2 Find the product given
$$J = \begin{bmatrix} 8 & -2 & 1 \\ 3 & 0 & -5 \end{bmatrix}$$
 $K = \begin{bmatrix} 1 & 4 \\ 6 & -2 \\ 0 & 3 \end{bmatrix}$

a) JK

b) KJ

Ex. 3 Find the product given
$$R = \begin{bmatrix} 2 & -3 \\ 0 & 5 \\ -2 & 0 \end{bmatrix}$$
 $W = \begin{bmatrix} 5 & 0 \\ 4 & 7 \end{bmatrix}$

a) RW

b) WR

Ex. 4 Find each product given
$$A = \begin{bmatrix} 1 & 5 \\ -3 & 0 \end{bmatrix}$$
, $B = \begin{bmatrix} 8 & 1 \\ 0 & 4 \\ 2 & 5 \end{bmatrix}$, $C = \begin{bmatrix} 1 & -3 & 4 \end{bmatrix}$.

a) BA

b) (CB)A