Honors Algebra 2 Notes

Name _____

3.6 Multiplying Matrices

- To <u>Multiply</u> 2 matrices the number of _____ of the 1st matrix must equal the number of _____ of the 2nd matrix
- To <u>Multiply</u> matrix A_{mxn} with matrix B_{nxp} the product matrix will have the dimensions _____
- **Process of Multiplying Matrices:** To find the individual elements of the product matrix, multiply the corresponding elements of **each row of A** by the corresponding elements of **each column of B** and **add the products.**

$$\begin{bmatrix} 2 & 3 \\ 4 & 5 \end{bmatrix} \times \begin{bmatrix} -2 & 1 \\ -6 & 8 \end{bmatrix} = \begin{bmatrix} (\ )(\ )+(\ )(\ ) & (\ )(\ )+(\ )(\ ) \\ (\ )(\ )+(\ )(\ ) & (\ )(\ )+(\ )(\ ) \end{bmatrix} = \begin{bmatrix} \_ & \_ \\ \_ & \_ \end{bmatrix}$$

Use the given matrices and perform the indicated operations, if possible:

$$A = \begin{bmatrix} 3 & 4 \\ 5 & 6 \end{bmatrix} \qquad B = \begin{bmatrix} -3 & -4 & -5 \\ -1 & -2 & -3 \end{bmatrix} \qquad C = \begin{bmatrix} 6 & 8 & 10 \\ 10 & 4 & 2 \\ -3 & 0 & -5 \end{bmatrix} \qquad D = \begin{bmatrix} 3 & 6 \\ 9 & 12 \end{bmatrix}$$

1. AB	2. DA	3. DB
* What is $AB_{2,3}$?	* What is $DA_{1,2}$?	* What is $DB_{1,3}$?
4. BD	5. $\frac{1}{3}DB - AB$	6. $DA + DB$