

Use your graphing calculator to compute BA and AB if  $A = \begin{bmatrix} 1 & 2 \\ 0 & -1 \\ 3 & -2 \end{bmatrix}$  and  $B = \begin{bmatrix} 2 & 4 & -1 \\ 3 & -2 & 1 \\ 2 & 0 & 2 \\ 1 & -3 & 0 \end{bmatrix}$ .

### Enter the matrices.

1. Press  $\boxed{2\text{nd}} \boxed{x^{-1}}$  to access the MATRIX menu.
2. Use the right arrow to go to EDIT.
3. Move the cursor to 1: [A] and press  $\boxed{\text{ENTER}}$ . Note that if you used this matrix name before, it will have a dimension next to it.
4. Enter the dimension of matrix A as 3 x 2. Enter the values into the matrix as shown. Note that the position is given at the bottom of the screen as 3, 3=-2 etc.
5. Repeat the process to enter matrix B, i.e. Press  $\boxed{2\text{nd}} \boxed{x^{-1}}$  to return to the MATRIX menu etc.
6. Press  $\boxed{2\text{nd}} \boxed{\text{MODE}}$  to QUIT and return to the Home screen.

MATRIX[A] 3 x2  
 $\begin{bmatrix} 1 & 2 \\ 0 & -1 \\ 3 & -2 \end{bmatrix}$   
 3, 2=-2

MATRIX[B] 4 x3  
 $\begin{bmatrix} 2 & 4 & -1 \\ 3 & -2 & 1 \\ 2 & 0 & 2 \\ 1 & -3 & 0 \end{bmatrix}$   
 4, 3=0

### Perform the matrix multiplication on the home screen .

7. Use  $\boxed{2\text{nd}} \boxed{x^{-1}}$  to access NAMES. Enter the names of the matrices. You may use the multiplication key to multiply the matrices as shown, but it not necessary.
8. Press  $\boxed{\text{ENTER}}$  to see the product matrix.

[B]\*[A]  
 $\begin{bmatrix} -1 & 2 \\ 6 & 6 \\ 8 & 0 \\ 1 & 5 \end{bmatrix}$

9. Note that you get a dimension error when you try to do  $[A][B]$ . This is because the number of columns in  $[A]$  does not match the number of rows in  $[B]$ .

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[A]*[B]
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ERR: DIM MISMATCH
1: Quit
2: Goto
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