

Find the inverse of matrix  $A = \begin{bmatrix} -2 & 1 & 2 \\ 1 & 0 & -1 \\ 4 & -2 & -3 \end{bmatrix}$  using your graphing calculator.

### Enter the Matrix

1. Press  $\boxed{2nd} \boxed{x^{-1}}$  to access the MATRIX menu.
2. Move the cursor to 1: [A] and press  $\boxed{ENTER}$ .
3. Enter the dimension of matrix A as 3 x 3. Enter the values into the matrix as shown. Note that the position is given at the bottom of the screen as 3, 3= -3 etc.
4. Press  $\boxed{2nd} \boxed{MODE}$  to QUIT and return to the Home screen.

### Find the Matrix Inverse on the Home Screen

5. Press  $\boxed{2nd} \boxed{x^{-1}}$  to enter the name of the matrix. Press 1 or  $\boxed{ENTER}$  to paste [A] to the home screen.
6. Press the  $\boxed{x^{-1}}$  key to find the inverse of matrix A.
7. Press  $\boxed{ENTER}$  to see  $A^{-1}$ .

### Show that $AA^{-1} = I$

8. On the home screen use  $\boxed{2nd} \boxed{ENTER}$  to paste the name of the matrix A.
9. On the same line, enter matrix A again, then press the  $\boxed{x^{-1}}$  key.
10. Press  $\boxed{ENTER}$  to see to see the product matrix, the identity matrix for a 3x3 matrix.