

## Matrices for the TI-82 Calculator

The following instructions explain key-by-key keystrokes necessary to enter a linear system of equations and how to solve them. First, create the matrix of coefficients. Then, create the matrix of constants. The dimensions appropriate for solving  $n$  equations in  $n$  unknowns are:

**Matrix of coefficients [n x n]; and Matrix of constants [n x 1]**

### Creating the matrix of coefficients.

1. Press **Matrix**

You will see: NAMES MATRIX EDIT

2. Press the arrow key to select EDIT.

It is currently on [A]: Press **ENTER** to select [A]  
Use the down-arrow key to select [B] or [C], then press **ENTER**, when selecting those.

You will see: MATRIX [A] 1 x 1 (or whatever dimension was previously selected for A.)

3. (enter the number of rows by overtyping the first number. Press **ENTER** to move over to the 2<sup>nd</sup> number and overwrite it with the number of columns. Then press **ENTER**.)

4. On the screen you will see the matrix.

It is ready for you to enter element (1,1). Enter the value and press **ENTER**.

The cursor automatically moves to the next element (1,2) for you to enter a number.

(If you make a mistake move the cursor with the arrow keys and type in a new number.)  
Complete the matrix and then quit MATRIX entry mode.

5. To exit the MATRIX-EDIT (entry) mode, press 2<sup>nd</sup> **QUIT**.

### Creating the matrix of constants.

Repeat the 5-step procedure above to enter the matrix of constants. Use [B] to store these values.

### Solving for the unknowns.

At the home screen enter: [A]  $x^{-1}$  [B]

Here are the keystrokes required to enter this expression.

**MATRIX** (*under NAMES*)[A] **ENTER**  $x^{-1}$  **MATRIX** (*under NAMES*)[B] **ENTER**