Matrices for the TI-81 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: 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] 6 x 6 (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 2nd number and overtype it with the **number of columns**. Then press **ENTER**.)

4. On the screen you will see 1,1 =

   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 and ENTER 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 **2nd 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.

2nd [A] x^{-1} 2nd [B] ENTER