Matrices for the TI-86 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 **2nd Matrix**

You will see: F1=NAMES, F2=EDIT

2. Press **F2** to select EDIT. Select an existing matrix (F1 to F5) or type the name of a new one.
Type **A** to create a matrix named [A] (do not press ALPHA), then press **ENTER**.
(If you pick a name in use by a program, table or variable, you will get an error message.)

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 2nd number and overtype 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 and ENTER keys and type in a new number.) Complete the matrix and then quit MATRIX entry mode.

5. To exit the 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 MATRIX **F1**(=NAMES) **F1**(=A) **2nd** $\mathbf{x^{-1}}$ **F2**(=B) **ENTER**

Use the EXIT key to turn of matrix calculation mode.