

Matrices on TI Calculators

On the TI-82 or TI-83

A. Entering a matrix:

1. On the home screen:
 - (a) Enter '[' to begin the matrix.
 - (b) Enter a second '[' to begin a row.
 - (c) Type in the numbers in the row separated by commas followed by a ']' to close the row.
 - (d) Continue entering rows as above. Then enter ']' to indicate the end of the matrix.
 - (e) Press the **STO** and **MATRIX** keys.
 - (f) Select a name for your matrix and press **ENTER**.
2. Using the Matrix Editor:
 - (a) Press **MATRIX**.
 - (b) Select *EDIT*.
 - (c) Then scroll down to select a name for the matrix.
 - (d) Enter the appropriate number of rows and columns; followed by the entries in each row.
 - (e) Use **2nd QUIT** to return to the homescreen.
3. To display a matrix previously entered:

Press **MATRIX**, select the name of the matrix, and press **ENTER** twice.

B. Performing Elementary Row Operations:

1. Press **MATRIX**, then select *MATH* and scroll down to select the operation name and press **ENTER**.
2. Press **MATRIX**, then scroll down to select a name for the matrix and press **ENTER**.
3. Complete the command line and press **ENTER**.

On the TI-85 or TI-86

A. Entering a matrix:

1. On the home screen:
 - (a) Enter '[' to begin the matrix.
 - (b) Enter a second '[' to begin a row.
 - (c) Type in the numbers in the row separated by commas followed by a ']' to close the row.
 - (d) Continue entering rows as above. Then enter ']' to indicate the end of the matrix.
 - (e) Press the **STO** key followed by a letter, e.g., *A*, to name the matrix.
2. Using the matrix editor:
 - (a) Press **MATRIX**.

- (b) Press **2nd Matrix** to enter the matrix menu.
- (c) Choose **Edit**
- (d) Type in a letter, e.g., A , to name the matrix, followed by **ENTER**
- (e) Change the row size and column size by entering the appropriate numbers, following each by **ENTER**
- (f) Then enter each of the matrix entries, pressing **ENTER** after each.
- (g) After you finish, press **EXIT**

B. Performing Elementary Row Operations:

1. Press **2nd Matrix** to enter the matrix menu.
2. Choose **OPS**
3. Choose from the following commands now available (you'll need to press **MORE** to see some of them) using the indicated syntax:
 - To interchange rows i and j in matrix A : **rSwap(A,i,j)**
 - To multiply row i by scalar s in matrix A : **multR(s,A,i)**
 - To replace row i by the sum of row i and $s \times (\text{row } j)$: **mRAdd(s,A,j,i)**
 - To obtain the row echelon form of A : **ref A**
 - To obtain the reduced row echelon form of A : **rref A**

On the TI-89, TI-92

A. Entering a matrix:

1. On the home screen:

Use the procedure described for the 85 & 86's.
2. Using the Matrix Editor:
 - (a) Press **APPS** and choose option 6, *Data/Matrix Editor*
 - (b) Select *New*
 - (c) For type, select matrix.
 - (d) Enter a letter to name the matrix; then key in the number of rows and columns.
 - (e) Press enter twice to obtain the matrix window.
 - (f) Then enter the matrix components.
 - (g) Press **Home** to exit the editor.

B. Performing Elementary Row Operations:

Press and **Catalog** and select the desired matrix operation, e.g., *ref*; *rref*, *rowAdd*, *rowSwap*, *mRow*. Then enter the matrix or matrix name, and other characters as prompted.

C. Performing Other Matrix Operations:

Press **2nd** and **Math** and select option 4 *Matrix* and select the desired matrix operation.