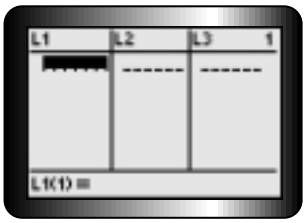
Appendix C: How to Use a TI-83 Plus Calculator

C.1 How to Enter Data in a List

Statistical functions can only be run on data that are entered in a list.

Clear Lists
Before you begin, make sure all the lists are empty by pressing [2nd] [+] [4] [ENTER] to execute the **ClrAllLists** command. Now you are ready to enter new data.



Edit Lists
Press [STAT] [1] to edit a list. The screen should look like this.

Enter Data
Use the arrow keys to select the list you would like to edit ($\mathbf{L_1}$ – $\mathbf{L_6}$). Data can be input using the number keys followed by the [ENTER] key. The data will be stored in memory until they are cleared.

Correcting Errors
Using the arrow keys, place the cursor on top of an incorrect number and enter it correctly. All other entries will stay in their original place. The [DEL] key can also be used to eliminate an entry and to move all following entries back to fill in the gap. To add an entry and move the existing entries down, press [2nd] [DEL] and key in the new number.

Example 1

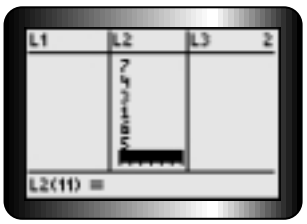
Clear all lists and enter the following data into $\mathbf{L_2}$: 1, 2, 5, 3, 7, 4, 3, 1, 6, 5.

Solution

[2nd] [+] [4] [ENTER]	*Clear all lists*
[STAT] [1] [▶]	*Edit* $\mathbf{L_2}$
[1] [ENTER] [2] [ENTER] [5] [ENTER]	*Enter data*
[3] [ENTER] [7] [ENTER] [4] [ENTER]	
[3] [ENTER] [1] [ENTER] [6] [ENTER]	
[5] [ENTER]	

Example 2

Change the first number in $\mathbf{L_2}$ to a 7.



Solution

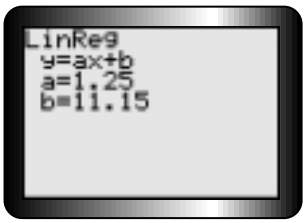
[▲] [▲] … [▲] ten times	*Select entry*
[7] [ENTER]	*Replace entry*

C.2 How to Perform a Linear Regression

LinReg is a statistical function that takes two lists of variables and relates them to a linear equation $y = ax + b$, with slope a and y-intercept b. The calculator, by default, makes $\mathbf{L_1}$ the X-variable and $\mathbf{L_2}$ the Y-variable; however, you can refer to the manual for more advanced ways to compare two lists.

Enter Data

Following the methods in Appendix C.1, enter two lists of data to be analyzed: one in $\mathbf{L_1}$ and the other in $\mathbf{L_2}$.



Select Command

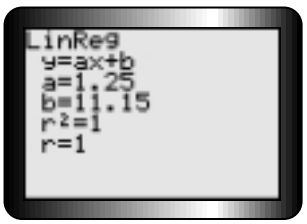
Press [STAT] and [▶] to select the **CALC** menu.
Then press [4] to select the **4:LinReg (ax + b)** command. Finally, press [ENTER].
The screen display should look something like this.

Correlation Coefficient

Your calculator can be set to find the correlation coefficient when performing a linear regression. Press [2nd] [0] to look at the **CATALOG** menu. Scroll down until you see the **DiagnosticOn** command selected with an arrow; press [ENTER]. The **DiagnosticOn** command will appear on the screen; press [ENTER] to execute it. The calculator will return the message **Done**.

Perform Regression

Now when you perform a linear regression, the calculator will also report the correlation coefficient r, as well as the coefficient of determination r^2 (which is the percent of the data that is accurately described by the regression equation).



Example

Clear all lists, enter the following information, and perform a linear regression. (Make sure diagnostics are turned on.)

$\mathbf{L_1}$ 1, 3, 5, 7, 9 $\mathbf{L_2}$ 12, 15, 18, 20, 22

Solution

[2nd] [+] [4] [ENTER]	*Clear all lists*
[STAT] [1] [1] [ENTER] [3] [ENTER]	*Edit* $\mathbf{L_1}$
[5] [ENTER] [7] [ENTER] [9] [ENTER] [▶]	
[1] [2] [ENTER] [1] [5] [ENTER] [1] [8] [ENTER]	*Edit* $\mathbf{L_2}$
[2] [0] [ENTER] [2] [2] [ENTER] [2nd] [MODE]	
[STAT] [▶] [4] [ENTER]	*Perform linear regression*

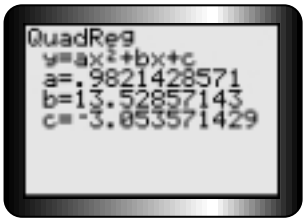
See display screen above for the correct results.

C.3 How to Perform a Quadratic Regression

QuadReg is a statistical function that takes two lists of variables and relates them to the standard quadratic equation $y = ax^2 + bx + c$. As with linear regressions, the calculator makes $\mathbf{L_1}$ the X-variable and $\mathbf{L_2}$ the Y-variable; however, you can refer to the manual for more advanced ways to use QuadReg.

Enter Data

Following the methods in Appendix C.1, enter two lists of data to be analyzed: one in $\mathbf{L_1}$ and the other in $\mathbf{L_2}$.



Select Command

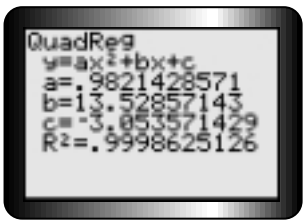
Press [STAT] and [▶] to select the **CALC** menu. Then press [5] to select the **QuadReg** command. Finally, press [ENTER]. The screen display, depending on the data being analyzed, should look like this.

Determination Coefficient

Your calculator can be set to find the coefficient of determination when performing a quadratic regression. Press [2nd] [0] to look at the CATALOG menu. Scroll down until you see the **DiagnosticOn** command selected with an arrow; press [ENTER]. The DiagnosticOn command will appear on the screen; press [ENTER] to execute it. The calculator will return the message **Done**.

Perform Regression

Now when you perform a linear regression, the calculator will also report the coefficient of determination r^2 (which is the percent of the data that is accurately described by the regression equation).



Example

Clear all lists, enter the following information, and perform a quadratic regression. (Make sure diagnostics are turned on.)

$\mathbf{L_1}$ 1, 3, 5, 7, 9 $\mathbf{L_2}$ 12, 45, 90, 140, 198

Solution

[2nd] [+] [4] [ENTER]	*Clear all lists*
[STAT] [1] [1] [ENTER] [3] [ENTER]	*Edit* $\mathbf{L_1}$
[5] [ENTER] [7] [ENTER] [9] [ENTER] [▶]	
[1] [2] [ENTER] [4] [5] [ENTER] [9] [0]	*Edit* $\mathbf{L_2}$
[ENTER] [1] [4] [0] [ENTER] [1] [9] [8]	
[ENTER]	
[2nd] [MODE]	
[STAT] [▶] [5] [ENTER]	*Perform quadratic regression*

See display screen above for the correct results.

C.4 How to Construct Scatter Plots

The TI-83 Plus calculator has six different graphing formats for statistical data entered in lists, and a scatter plot is one of them. Up to three stat plots can be displayed at once.

Enter Data
Following the methods in Appendix C.1, enter two lists of data to be analyzed: one in $\mathbf{L_1}$ and the other in $\mathbf{L_2}$.

Define Plot
Press 2nd Y= to access the **STAT PLOT** menu. Press 1 to edit the options for **Plot 1**. Using the arrow keys, move the cursor over the word **On** and press ENTER to turn on **Plot 1**. Again, using the arrow keys, move the cursor over the scatter-plot icon and press ENTER to select scatter plot.

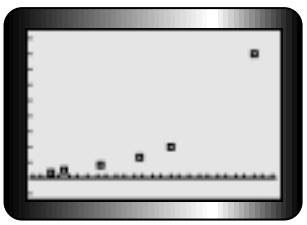
Set Display Options
Press ZOOM 9 to automatically adjust the display settings to suit your data set. The calculator will then automatically graph the data set you selected in the **STAT PLOT** menu.

Example
Clear all lists, enter the following information, and create a scatter plot.

$\mathbf{L_1}$ 25.1, 16, 3, 12.7, 8.5, 4.4 $\mathbf{L_2}$ 8, 2, 0.3, 1.4, 0.9, 0.45

Solution

2nd + 4 ENTER	*Clear all lists*
STAT 1 2 5 . 1 ENTER 1 6	*Edit* $\mathbf{L_1}$
ENTER 3 ENTER 1 2 . 7 ENTER	
8 . 5 ENTER 4 . 4 ENTER ▶	
8 ENTER 2 ENTER . 3 ENTER 1	*Edit* $\mathbf{L_2}$
. 4 ENTER . 9 ENTER . 4 5	
ZOOM 9 ENTER	*Set display options*



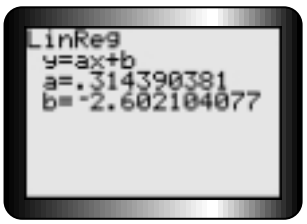
C.5 How to Plot a Line of Best Fit

Once data have been entered into two lists ($\mathbf{L_1}$ and $\mathbf{L_2}$) and you have enabled one of the stat plots, the line of best fit can be displayed on the screen with a scatter plot by storing the linear regression data in one of the Y-variables.

Perform Regression
Press STAT ▶ 4 to select **4:LinReg(ax+b)** from the **CALC** menu.

Identify Lists

Press 2nd 1 , 2nd 2 , VARS ▶ 1 1 ENTER to identify the lists on which to perform the regression, and the place in which to store the equation. The calculator will then display the results of your linear regression.



Press ZOOM 9 to set up the screen dimensions and graph both the scatter plot and the line of best fit.

C.6 How to Create a Histogram

Once data have been entered into one of the lists ($\mathbf{L_1}$), a histogram can be displayed using the STAT PLOT command.

Select Plot1

Press 2nd Y= to access the **STAT PLOTS** menu. Select the first plot by pressing 1 or by using the arrow keys and pressing ENTER.

Enable Plot1

Select **On** using the cursor and press ENTER. Using the arrow keys, select the histogram icon and press ENTER. Make sure the **Xlist** is $\mathbf{L_1}$.

Display Graph

Adjust the display settings by pressing ZOOM and set the display to **9: ZoomStat** by pressing 9. The graph will automatically appear on the screen with the optimal display settings.

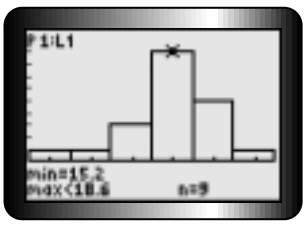
Example

Enter the following data into $\mathbf{L_1}$ and display a histogram of the data. Find the number of data in the tallest bar by using the **TRACE** function.

5, 10, 13, 14, 15, 16, 16, 16, 17, 17, 17, 18, 18, 18, 19, 19, 20, 21, 21, 22

Solution

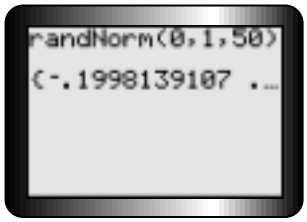
STAT 1 5 ENTER 1 0 ENTER 1 3	*Enter data*
ENTER 1 4 ENTER 1 5 ENTER 1 6	
ENTER 1 6 ENTER 1 6 ENTER 1 7	
ENTER 1 7 ENTER 1 7 ENTER 1 8	
ENTER 1 8 ENTER 1 8 ENTER 1 9	
ENTER 1 9 ENTER 2 0 ENTER 2 1	
ENTER 2 1 ENTER 2 2 ENTER	
2nd Y= 1	*Select Plot1*
ENTER ▼ ▶ ▶ ENTER	*Enable Plot1*
ZOOM 9	*Display graph*
TRACE ▶ ▶ ▶	*Explore graph*



C.7 How to Use the randNorm Command

This command can be used to create a series of random numbers normally distributed about a given mean generated with a given standard deviation. You must supply three arguments: the mean and the standard deviation for the data sample, and the number of pieces of data.

For example, randNorm(0,1,50) will create a list of 50 randomly selected numbers normally distributed about a mean of 0 with a standard deviation of 1.



Select Command
Press [MATH] [▶] [▶] [▶] [6] to select the **6:randNorm(** command.

Enter Arguments
Key in the mean, the standard deviation, and the number of pieces of data, in that order. Press [0] [,] [1] [,] [5] [0] [)] [ENTER] to create the data set mentioned in the example.

Store Results
For you to be able to do any analysis on these results, they must be stored in a list. Press [STO▶] [2nd] [1] to store the results in $\mathbf{L_1}$.

Example

Create a list of 35 random numbers that are normally distributed about the mean 71.1 with a standard deviation of 13.6. (Do not press [ENTER] after the arguments; instead, store directly into $\mathbf{L_1}$.)

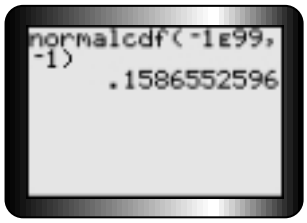
Solution

[MATH] [▶] [▶] [▶] [6]	*Select command*
[7] [1] [.] [1] [,] [1] [3] [.] [6] [,] [3] [5] [)]	*Enter arguments*
[STO▶] [2nd] [1] [ENTER]	*Store results*

C.8 How to Use the normalcdf Command

This command will return the proportion of data that lies on a normal distribution between the two z-scores given.

For example, to find the probability of a randomly selected piece of data being one standard deviation or more below the mean, you would evaluate normalcdf(–1E99, –1), using –1E99 as the lower bound and –1 as the upper bound. The probability is approximately 15.9%.



Select Command
Press [2nd] [VARS] [2] to select **2:normalcdf(** from the **DISTR** menu.

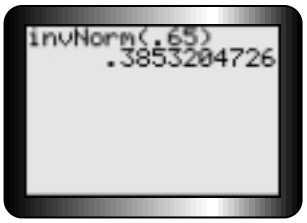
Enter Argument
[(-)] [1] [2nd] [,] [9] [9] [,] [(-)] [1] [)] [ENTER]

C.9 How to Use the invnormal Command

This command returns the z-score of the normally distributed piece of data that has the given percent of data less than or equal to itself.

For example, to find the z-score that corresponds to a piece of data that has 65% of the data less than or equal to itself, you would evaluate invnormal(0.65). ($z \doteq 0.385$)

Select Command
Press [2nd] [VARS] [3] to select **3:invnormal(** from the **DISTR** menu.



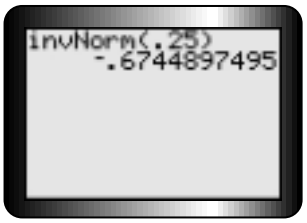
Enter Argument
[0] [.] [6] [5] [)] [ENTER]

Example

What z-score divides a normal distribution into 25% below and 75% above?

Solution

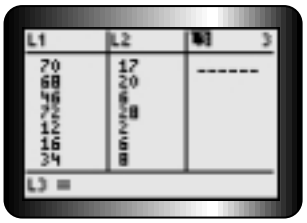
[2nd] [VARS] [3] — *Select command*
[.] [2] [5] [)] [ENTER] — *Enter arguments*



C.10 How to Plot Residuals Using RESID

The distance from a point on a scatter plot to the line of best fit is known as the residual value. Refer to Appendices C.1: How to Enter Data in a List, C.4: How to Construct Scatter Plots, and C.5: How to Plot a Line of Best Fit. Once you have done all this, you can calculate each point's distance from the line of best fit and store those values in $\mathbf{L_3}$.

Select L_3
Press [STAT] [1] to edit the lists, and then move the cursor using the arrow keys to the column heading $\mathbf{L_3}$.



RESID
Press [2nd] [STAT] [7] to select **RESID**, the variable in which residual values are stored, and press [ENTER].

Set Up Plot2
Press [2nd] [Y=] to set up Plot 2. Use the arrow keys to move the cursor over the display **ON** and press [ENTER]. Select the scatter-plot icon and change the **Ylist** to $\mathbf{L_3}$.

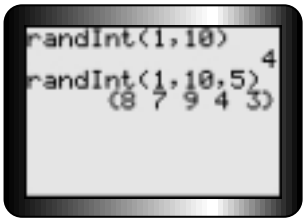
Plot Residuals
Press [ZOOM] [9] to set up the display and show the graph with residuals.

C.11 How to Create and Display Random Numbers

randInt is a command that produces a random number within a specified range and can be repeated a specified number of times. Two arguments must be provided: lower bound and upper bound. If no number of trials is specified, the calculator assumes that only one is required.

For example, to find a random integer between 1 and 10, you would execute the command randInt(1,10). To find five random integers between 1 and 10, you would execute the command randInt(1,10, 5).

Select Command
Press [MATH] [▶] [▶] [▶] to use the **PRB** menu and select **5:randInt(** by pressing [5].



Enter Argument
Enter the lower and upper bounds by keying [1] [,] [1] [0]. If you would like to repeat this command five times, for example, you would also key [,] [5] before entering the closing bracket [)].

C.12 How to Write Programs

The instruction manual for the TI-83 Plus calculator has a number of resources in Chapter 16 and in Appendices A and B that explain in great detail how to program your calculator.

Create Program
Press [PRGM] [▶] [▶] [ENTER] to begin creating a new program. You will be asked to enter the name of your new program. Using the green letter keys on your calculator, enter a name up to eight characters in length and press [ENTER].

Edit Program
Once a program name has been entered, you are automatically sent to the program editor. Commands can be accessed from any of the Advanced Function Keys ([MATH], [APPS], [PRGM], [VARS]). Consult your manual for more on using commands in programs. To return to a program that has already been named, press [PRGM] [▶] to access the **EDIT** menu, pick the program from the list using the arrow keys, and then select it using the [ENTER] key. To exit the program editor, press [2nd] [MODE].

Delete Program
Once a program is no longer needed, you can delete it by pressing [2nd] [+] [2] [7]. Each of the programs currently loaded on your calculator will be listed. Select the program you wish to delete and press the [DEL] key.

Check the textbook CD for sample programs like the one that follows. These can be loaded into your calculator to make calculations and perform simulations.

Example

Create a program that will take a hockey player's face-off winning percent, number of attempts, and number of successes, and will perform a given number of trials to calculate an experimental probability. Make the program compare this experimental value with the theoretical probability of the same event.

```
:Disp "ENTER WINNING"
:Input "PERCENTAGE", P
:Disp "ENTER NUMBER"
:Input "OF ATTEMPTS", A
:Disp "ENTER NUMBER OF"
:Input "SUCCESSES", S
:Disp "ENTER NUMBER OF"
:Input "TRIALS", T
:T=>X
:0 => B
:Lbl 99
:0 => C
:For (Y, 1, A, 1)
:randInt (0, 99) > W
:If P>W
:C+1=>C
: End
:Disp "WIN", C
:If C=S
:B+1=>B
:If T<1
:Goto 98
:T-1=>T
Goto 99
:Lbl 98
:Disp "EXPERIMENTAL", (B/X)
:Disp "THEORETICAL"
:Disp (A nCr
S)*((P/100)^S)* (((100-
P)/100)^(A-S))
```

C.13 Using the Prob Sim Application

Probability Simulation (Prob Sim) is a FLASH application for the TI-83 Plus calculator. It can be accessed by pressing the APPS button and selecting it from the list of installed software. If it is not installed on your calculator, you will need to install it from the textbook CD using a TI Graph Link cable and Graph Link software available at the TI Web site: **www.ti.com/calc/graphlink**.

Execute Program

Press APPS and use the arrow keys to select **Prob Sim** from the list of applications. Finally, press ENTER, and then press a key to see the simulation menu.

Select Simulation

Prob Sim can perform six different simulations. Either press the number beside a simulation or select it using the arrow keys.

1. **Toss Coins** will simulate two-sided probability of up to three coin tosses at a time for multiple trials. The number of heads can be displayed as a bar graph or in table format, and data can be exported to your Mac or PC using TI Graph Link.
2. **Roll Dice** will simulate up to three dice being tossed for multiple trials. A variety of dice are available (6-, 8-, 10-, 12-, and 20-sided dice). The total of the three rolls is displayed in either a bar graph or in table format, and data can be exported to your Mac or PC using TI Graph Link.

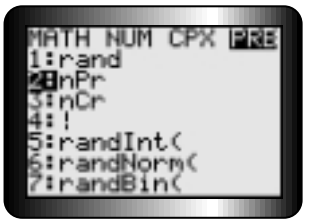
3. **Pick Marbles** is a simulation of up to five types of marbles being randomly selected, with the number of each type or experimental probability of each type being graphed or displayed in a table. The results can also be exported to a Mac or PC.
4. **Spin Spinner** is a simulation of a spinner with up to eight different outcomes. Both frequency and experimental probability can be displayed in a bar graph or table, and the results can be exported to a Mac or PC.
5. **Draw Cards** uses 52- and 32-card deck options to demonstrate a random selection of cards from up to three decks both with and without replacement. All results are recorded in a table, and can be exported to a Mac or PC.
6. **Random Numbers** is a simulator that randomly selects up to six integers at a time and displays the results in a table. The results can also be exported to a Mac or PC.

With each of the simulators, the values for each bar can be displayed by pressing the left or right arrow keys.

C.14 How to Calculate ${}_nP_r$ and ${}_nC_r$

Permutations and combinations can be calculated using commands from the PRB menu available with [MATH].

Enter Argument
Both ${}_nP_r$ and ${}_nC_r$ require the first argument (the n-value) to be keyed first.



Select Command
Press [MATH] [▶] [▶] [▶] to access the **PRB** menu. ${}_nP_r$ can be used by pressing [2] and ${}_nC_r$ can be accessed by pressing [3].

Enter Arguments
The r-value must now be entered. The expression can then be evaluated by pressing [ENTER].

Example

Evaluate the following expressions.

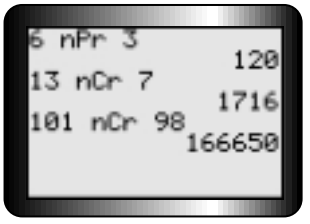
(a) ${}_6P_3$ **(b)** ${}_{13}C_7$ **(c)** ${}_{101}C_{98}$

Solution

(a) [6] *Enter argument*
[MATH] [▶] [▶] [▶] [2] *Select command*
[3] [ENTER] *Enter argument*

(b) [1] [3] *Enter argument*
[MATH] [▶] [▶] [▶] [3] *Select command*
[7] [ENTER] *Enter argument*

(c) [1] [0] [1] *Enter argument*
[MATH] [▶] [▶] [▶] [2] *Select command*
[9] [8] [ENTER] *Enter argument*



C.15 How to Enter Matrices

The TI-83 Plus calculator can use up to 10 different matrices at a time. Before a matrix can be used, it must be defined and each individual entry must be keyed in.

Select Matrix
Press [2nd] [x^{-1}] to select the Matrix editor. Use the arrow keys [▲] and [▼] to select the name of the matrix you would like to edit.

Enter Dimension
Press [▶][▶] [ENTER] to select the **EDIT** menu. You can now define the number of rows and columns by entering the number of each, separated by the [ENTER] key.

Enter Numbers
You can now enter the numbers into the matrix by keying them in and pressing [ENTER]. You can also use the arrow keys to navigate the screen and correct errors, if necessary.

Using Matrices
A matrix can now be called by pressing [2nd] [x^{-1}] and pressing [ENTER]. The name of the matrix will then appear on the home screen.

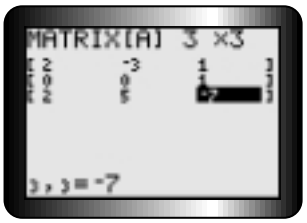
Example

Enter the following matrices into a TI-83 Plus calculator.

(a) $[A] = \begin{bmatrix} 2 & -3 & 1 \\ 0 & 0 & 1 \\ 2 & 5 & -7 \end{bmatrix}$ **(b)** $[B] = \begin{bmatrix} 9 & 3 \\ 1 & 0 \\ -1 & 2 \end{bmatrix}$

Solution

(a) [2nd] [x^{-1}] *Select matrix*
[▶] [▶] [ENTER] [3] [ENTER] [3] [ENTER] *Enter dimension*
[2] [ENTER] [-] [3] [ENTER] [1] [ENTER]
[▶][▶][1] [ENTER] [2] [ENTER] [5] [ENTER] *Enter numbers*
[−] [7] [ENTER]



(b) [2nd] [x^{-1}] *Select matrix*
[▶] [▶] [▼] [ENTER] [3] [ENTER] [2] [ENTER] *Enter dimension*
[9] [ENTER] [3] [ENTER] [1] [▼]
[−] [1] [ENTER] [2] [ENTER] *Enter numbers*

C.16 How to Add, Subtract, or Multiply Matrices

Matrices must have compatible dimensions before you can add, subtract, or multiply them using a TI-83 Plus calculator. The names of the matrices are selected from the Matrix editor and displayed on the home screen. If defined, you can find the sum, difference, or product of any two matrices.

Select Matrix Name
Press [2nd] [x^{-1}] to access the Matrix editor. Use the [▲] [▼] arrow keys to select the matrix you want and press [ENTER].

Select Operation
Back on the home screen, you can key whatever operation you wish.

Select Matrix Name
Press [2nd] [x^{-1}] and select the matrix you want using the arrow keys.

Example

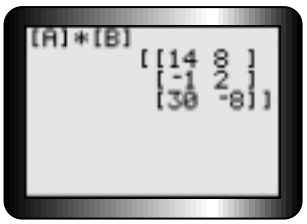
Find the following results for the matrices $[A] = \begin{bmatrix} 2 & -3 & 1 \\ 0 & 0 & 1 \\ 2 & 5 & -7 \end{bmatrix}$, $[B] = \begin{bmatrix} 9 & 3 \\ 1 & 0 \\ -1 & 2 \end{bmatrix}$, and $[C] = \begin{bmatrix} 5 & -2 \\ 0 & -3 \\ 4 & -8 \end{bmatrix}$.

(a) [A] * [B] **(b)** [C] + [B]

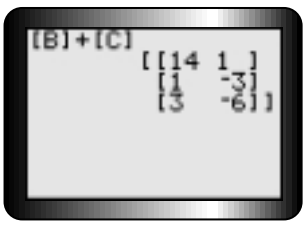
See Appendix C.15 for how to enter matrices.

Solution

(a) [2nd] [x^{-1}] [ENTER] *Select matrix name*
[*] *Select operation*
[2nd] [x^{-1}] [▼] [ENTER] *Select matrix name*



(b) [2nd] [x^{-1}] [▼] [ENTER] *Select matrix name*
[+] *Select operation*
[2nd] [x^{-1}] [▼] [▼] [ENTER] *Select matrix name*



C.17 How to Multiply Matrices by a Scalar

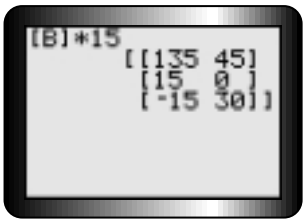
Once a matrix has been entered into memory, it can be recalled from the MATRX menu.

Select Matrix
Press [2nd] [x^{-1}] and select the matrix you need using the arrow keys [▲] [▼]. Then press [ENTER].

Perform Operation
Finally, perform the desired operation and press [ENTER] to discover the result.

Example

Find the result of 15*[B] if [B] = $\begin{bmatrix} 9 & 3 \\ 1 & 0 \\ -1 & 2 \end{bmatrix}$.



Solution

[2nd] [x^{-1}] [▼] [ENTER] *Select matrix*
[*] [1] [5] *Perform operation*

C.18 How to Export Matrices into Lists

A matrix can have one or more of its columns transferred to a list using the **8:Matr>list(** command.

Select Operation
Press [2nd] [x^{-1}] [▶] to select the **MATH** menu and select the **8:Matr>list(** command by pressing [8].

Enter Arguments
Identify the matrix you would like to transfer by pressing [2nd] [x^{-1}], and selecting it with the [▲] and [▼] arrow keys followed by [ENTER] and [,]. Next, enter one list for each column in the matrix, separated by a comma. When you have entered enough lists, press [)] [ENTER].

Example

Take the matrix [A] = $\begin{bmatrix} 2 & -3 & 1 \\ 0 & 0 & 1 \\ 2 & 5 & -7 \end{bmatrix}$ and export it into lists L_3, L_4, and L_5.

Solution

[2nd] [x^{-1}] [▶] [8] *Select operation*
[2nd] [x^{-1}] [ENTER] [,] [2nd] [3] [,] [2nd] [4] [,] *Enter arguments*
[2nd] [5] [,] [)] [ENTER]

C.19 How to Import Lists into a Matrix

A series of lists can be imported into a matrix; this is true even for a matrix that has not yet been defined. The destination matrix will be given enough rows and columns to accommodate what is being sent to it. If the lists are not the same length, zeros will be added to the short lists until they are all the same length.

Enter Numbers
Press [STAT] [1] and use the arrow keys to enter numbers in the lists.

Select Operation
Press [2nd] [x^{-1}] [▶] [9] to select the **9:List>matr(** command from the **MATH** menu.

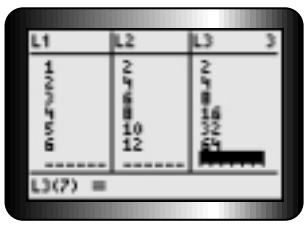
Enter Arguments
Enter the list names using [2nd] [1] – [6], separated by commas, and then finally enter a matrix name by pressing [2nd] [x^{-1}] and choosing one from the list.

Example

Enter the following data into lists and then import into a matrix:
L1: 1, 2, 3, 4, 5, 6
L2: 2, 4, 6, 8, 10, 12
L3: 2, 4, 8, 16, 32, 64

Solution

[2nd] [+] [4] [ENTER]	*Clear all lists*
[STAT] [1] [1] [ENTER] [2] [ENTER] [3] [ENTER] [4]	*Enter numbers*
[ENTER] [5] [ENTER] [6] [ENTER] [▶] [2] [ENTER] [4]	
[ENTER] [6] [ENTER] [8] [ENTER] [1] [0] [ENTER] [1] [2]	
[ENTER] [▶] [2] [ENTER] [▶] [4] [ENTER] [▶] [8] [ENTER] [1] [6]	
[ENTER] [3] [2] [ENTER] [6] [4] [ENTER]	



[2nd] [MODE]	*Return to home screen*
[2nd] [x^{-1}] [▶] [9]	*Select operation*
[2nd] [1] [,] [2nd] [2] [,] [2nd] [3] [,] [2nd] [x^{-1}] [1]	*Enter arguments*

Note: A matrix can be viewed by pressing [2nd] [x^{-1}] [▶] [▶] and selecting it from the list.