

TABLE
TI-83 QUICK REFERENCE

The TABLE feature on the TI-83 is used to display a table of function values. It simultaneously displays values of the independent variable, X , and the values of two dependent variables or functions, Y .

1. Enter the function(s) in the $Y=$ screen and ensure that they are selected.

2. Press $\boxed{2nd}$ $\overset{\text{TBLSET}}{\boxed{WINDOW}}$ and enter the desired table settings.
 - a. "TblStart" is the initial value for X , the independent variable.
 - b. "Tbl" is the increment used to calculate subsequent X -values.
 - c. "Indpnt" should be set to "Auto" if you wish for the calculator to automatically assign X -values. Set to "Ask" if you wish to manually enter X -values.
 - d. "Depend" should usually be set to "Auto." Set this to "Ask" only if you wish the calculator to not display some of the function values.

3. Press $\boxed{2nd}$ $\overset{\text{TABLE}}{\boxed{GRAPH}}$ to display the table.

Indpnt set to Auto

4. With the cursor in the X -column, press the up or down arrows to move the cursor and display additional values. If the cursor is on the value of TblStart and you press the up arrow, values of X less than TblStart will be displayed.
5. Press the right arrow if you have selected more than two functions and wish to see those not currently displayed.

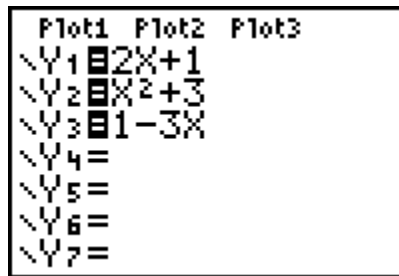
Indpnt set to Ask

4. Type a value for X and press \boxed{ENTER} . The function values are displayed.
5. Press the right arrow if you have selected more than two functions and wish to see those not currently displayed.

TUTORIAL TABLE - USING THE TI-83

You will be entering several functions and investigating the function values using the TABLE feature. You will be instructed step-by-step. **After** you execute a step, your screen should appear as indicated below the instruction.

Enter the functions $2X + 1$, $X^2 + 3$, and $1 - 3X$ in the Y= screen. Ensure that all are "selected." For our purposes, it is best that no other functions are selected.



Press 2nd TBLSET WINDOW .



Set TblStart to 1, Tbl to 2 and both Indpnt and Depend to Auto.



TABLE

To display the table, press 2nd GRAPH .

| X | Y ₁ | Y ₂ |
|-----|----------------|----------------|
| 1 | 3 | 4 |
| 3 | 7 | 12 |
| 5 | 11 | 28 |
| 7 | 15 | 52 |
| 9 | 19 | 84 |
| 11 | 23 | 124 |
| 13 | 27 | 172 |
| X=1 | | |

You see the value of X displayed with the corresponding values for the first two functions. When $X = 1$, then $Y_1 = 2X + 1 = 3$ and $Y_2 = X^2 + 3 = 4$, etc.

The first value in the X-column is 1, the value which you entered in TblStart. Notice that subsequent values of X are 3, 5, etc. You entered 2 as Tbl and the calculator is adding 2 to X to obtain these numbers.

Press the up arrow 3 times.

| X | Y ₁ | Y ₂ |
|------|----------------|----------------|
| -5 | -9 | 28 |
| -3 | -5 | 12 |
| -1 | -1 | 4 |
| 1 | 3 | 4 |
| 3 | 7 | 12 |
| 5 | 11 | 28 |
| 7 | 15 | 52 |
| X=-5 | | |

The three values, -5, -3 and -1, are obtained by successively subtracting Tbl from TblStart.

Press the right arrow 3 times.

| X | Y ₂ | Y ₃ |
|--------------------|----------------|----------------|
| -5 | 28 | 16 |
| -3 | 12 | 10 |
| -1 | 4 | 4 |
| 1 | 4 | -2 |
| 3 | 12 | -8 |
| 5 | 28 | -14 |
| 7 | 52 | -20 |
| Y ₃ =16 | | |

You now see values for the functions Y_2 and Y_3 . If you wish to see values for Y_1 again, you can move left with the left arrow.

With the cursor in the Y_3 column, use the up arrow to move the cursor over the " Y_3 ."

| X | Y_2 | Y_3 |
|----------------|-------|-------|
| -5 | 28 | 16 |
| -3 | 12 | 10 |
| -1 | 4 | 4 |
| 1 | 4 | -2 |
| 3 | 12 | -8 |
| 5 | 28 | -14 |
| 7 | 52 | -20 |
| $Y_3 = 1 - 3X$ | | |

You see the function definition, $Y_3 = 1 - 3X$ at the bottom of the screen. It is possible to edit the function definition here if you wish. See your manual for details.

Press 2nd WINDOW .

| | |
|----------------|----------|
| TABLE SETUP | |
| TblStart=-5 | |
| Δ Tbl=2 | |
| Indpnt: | Auto Ask |
| Depend: | Auto Ask |

Use the arrow keys to move the cursor over "Ask" in the "Indpnt" line and press ENTER .

| | |
|----------------|----------|
| TABLE SETUP | |
| TblStart=-5 | |
| Δ Tbl=2 | |
| Indpnt: | Auto Ask |
| Depend: | Auto Ask |

Now have the table displayed again by pressing 2nd GRAPH .

| X | Y_1 | Y_2 |
|-------|-------|-------|
| | | |
| | | |
| | | |
| $X =$ | | |

You notice that no values are displayed. The calculator is asking you for the X-values. With the cursor in the X-column, type 3 and press either ENTER or the down arrow.

| X | Y ₁ | Y ₂ |
|----|----------------|----------------|
| 3 | 7 | 12 |
| | | |
| | | |
| X= | | |

You see the values for Y_1 and Y_2 when $X = 3$. You may type any value you wish in the X-column and the values for the functions will be displayed.