Using Tables with an "AUTO" Independent Variable Classic View

Objectives:

- Identify the three steps for using a TABLE
- Step 1: Use the Y= menu to define a function between x and y
- Step 2: Use the TBLSET Menu to Set Up an Automatic Table
- Step 3: View and use the resulting table using TABLE

Identify the three steps in using a TABLE

IMPORTANT: There are two types of tables in the calculator, ASK and AUTO, according to the table setup.
In an ASK table, the calculator waits for the user to type the value(s) of x.
In an AUTO table, the calculator automatically calculates values of x using rules the user sets up in TBLSET.

Step 1: Input a function in the statplot f1 [y=] menu. The calculator needs a relationship between x and y.

Step 2: Configure the table (ASK or AUTO), using the TBLSET menu. [2nd] tblset f2 [window]

Step 3: View the resulting table, using TABLE. [2nd] table f5 [graph]

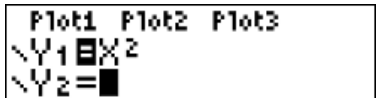
Step 1: Use the Y= menu to define a function between x and y

Example 1: Make an x-y table using integer values of x, $-5 \le x \le 5$ for the function $y = x^2$

Step 1: Input the function $y = x^2$.

Press these buttons statplot f1 [y=] link [X,T,θ,n] √ [x^2] I entry solve [enter]

See this screen:



CAUTION: The Y= menu allows more than one equation. If you have a calculator someone else used before you, there may be other functions. If so, clear them by pressing [▼] and [clear] repeatedly.

To exit, press [2nd] quit [mode]

IMPORTANT: Always use link [X,T,θ,n] when typing a variable into the Y= menu.
CAUTION: Exit the Y= menu before typing other calculations on top or beside your intended function!

Step 2: Use the TBLSET menu to set up an automatic table

Example 1, continued: Set up an automatic table.

To open the TBLSET menu, press these buttons: tblset f2 — 2nd window

In the TBLSET menu there are four settings:

- TblStart ("Table Start") is the first x-value in the table.
- △Tbl ("Delta Table") is the amount added to each x-value to get the next x-value.
- Indpt: ("Independent variable") refers to the x-values.
- Depend ("Dependent variable") refers to the y-values.

Vocabulary: When using a function y(x), each value of x is chosen independently, so **x** is the **independent** variable. But y comes from or depends on the value of x, so **y** is the **dependent** variable.

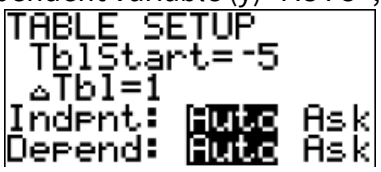
To input the first value of x in TblStart, press these buttons: ans ? L5 U entry solve — (–) 5 enter

To make a list of integers, add 1 each time, press L1 Y entry solve — 1 enter

To make the Independent Variable (x) "AUTO", press these buttons: entry solve — enter

To make the Dependent Variable (y) "AUTO", press: ▼ entry solve — enter

See this screen:



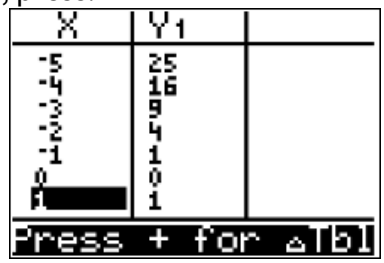
To quit the table setup, press these buttons: quit — 2nd mode.

Step 3: View and Use the Resulting Table using TABLE

Example 1, continued: .

To see the table, press: table f5 — 2nd graph

See this screen:

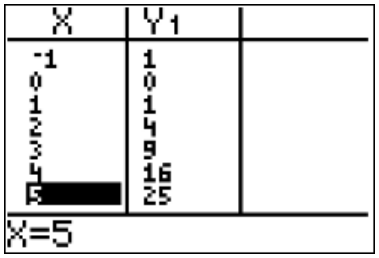


COOL TRICK: If you use ▼ and ▲ to scroll above or below the table, the table fills automatically!

Draw a table on your paper and write the values you can see before continuing.

Press  until you can see the values $2 \le x \le 5$ to complete the table.

See this screen:



Answer:

x	-5	-4	-3	-2	-1	0	1	2	3	4	5
y	25	16	9	4	1	0	1	4	9	16	25

Try It!

1) Complete the following table for $y = 2x - 5$

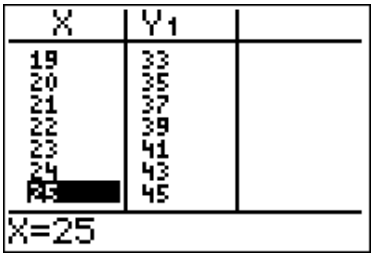
x	20	21	22	23	24
y					

2) Complete the following table for $y = \sqrt{100 - x^2}$. Round to the nearest hundredth if necessary.

x	0	2	4	6	8
y					

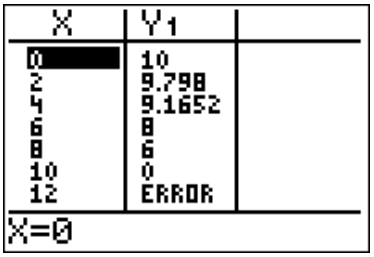
Solutions

1) In TBLSET, make TblStart = 20



x	20	21	22	23	24
y	35	37	39	41	43

2) In TBLSET, make △Tbl = 2



x	0	2	4	6	8
y	10	9.80	9.17	8	6