

Using function tables (Tutorial B2)

http://www.atomiclearning.com/k12/en/movie/85846/play_window?type=Tutorial&sid=2410

[00:00:00.00]

You can evaluate graphed functions in a table using the Function Table feature. First, let's graph a couple of

[00:00:07.00]

functions. I'll press the Home key, and choose New Document. If you have a document opened with unsaved changes, you'll

[00:00:16.00]

be prompted to save before you continue. Now, select Add Graphs. For my first function, in the entry line at the

[00:00:25.00]

bottom of the work area, I'll type "x" and then press Enter to graph the function "f1(x)=x." I'll press Tab to reveal

[00:00:36.00]

the Entry Line. Notice the entry line allows me to graph a second function, so I'll graph the expression "x^2+6,

[00:00:43.00]

by pressing "x," then the "x^ 2" key, and then "+6", and then I'll press Enter to plot the function. Now I'll create

[00:00:56.00]

a Function Table based on these functions by pressing the Menu key, and then choosing Table, followed by Split-screen

[00:01:04.00]

Table. This will bring up a split-screen view, with my original application on the left, and my Function Table

[00:01:11.00]

on the right. By default, the expressions are evaluated when x starts at 0, and moves in single integer steps up

[00:01:19.00]

and down. I can move up and down in the list by pressing the up and down arrows on the Touchpad. If I press the

[00:01:28.00]

right arrow key on the Touchpad once, I can see that each of my functions are in their respective columns, so the

[00:01:34.00]

first column shows me the values for the expression $f_1(x)=x$,” and the second column shows values for the expression

[00:01:40.00]

$f_2(x) x^2+6$.” I’ll move back to the Graphs application by pressing Ctrl and then Tab. I’ll use the Touchpad to

[00:01:52.00]

move my pointer to the line created by the first function. When the line is highlighted, I’ll grab it by pressing

[00:01:59.00]

and holding the Click key in the middle of the Touchpad, and then I’ll use the Touchpad to drag the line around

[00:02:06.00]

the graph. Notice that as the function changes, the values in the Function Table change as well. To release the line,

[00:02:14.00]

I’ll press the Click key again. I can also redefine the function in the table. I’ll press Ctrl and then Tab to

[00:02:24.00]

move back over to the Function Table, and then I’ll press Tab again to move from the x values to the header section,

[00:02:31.00]

and then I’ll press Enter to highlight $f_1(x)$. Now, I can use the arrow keys on the Touchpad to highlight the function

[00:02:39.00]

definition cell. If I want the second function to be x^2-6 instead of the existing function, I can just type the

[00:02:48.00]

new function here and then press Enter, and the graph and data change immediately. If I want to change the preferences

[00:02:57.00]

for the Function Table, I can press the Menu key, then choose Table, and then select Edit Table Settings. Here,

[00:03:07.00]

I can choose the starting value for the table as well as the steps between each number, so if I want the first value

[00:03:13.00]

to be 5, and then the steps to go up or down by 3, I can type “5” in the Table Start field, and then “3” in the

[00:03:21.00]

Table Step field. Then use the Tab key to highlight “OK” followed by Enter. Notice my first value is now 5, the

[00:03:33.00]

second is 8, and so on. I’ll open the preferences again by pressing Menu, then going to Table, Edit Table Settings

[00:03:42.00]

again, and this time I’m going to do something different. I want the table to wait for me to enter a value for the

[00:03:49.00]

independent variable “x” before evaluating it. To do this, I’ll just use the Tab key to move to the drop-down menu

[00:03:57.00]

for Independent. I’ll press the Click key, and use the arrows on the Touchpad to move down to the Ask option, and

[00:04:05.00]

then press Enter. Now, I’ll use the Tab key again to highlight “OK” and then press Enter. Now, I can type a value for x

[00:04:16.00]

and press Enter, and the Function table will evaluate it.

[00:04:22.00]