



Graphing Calculator Investigation

A Preview of Lesson 8-2

Sharp EL-9900

Function Tables

You can use a Sharp EL-9900 graphing calculator to create function tables. By entering a function and the domain values, you can find the corresponding range values.

Use a function table to find the range of $y = 3n + 1$ if the domain is $\{-5, -2, 0, 0.5, 4\}$.

Step 1 Enter the function.

- The graphing calculator uses X for the domain values and Y for the range values. So, $Y = 3X + 1$ represents $y = 3n + 1$.
- Enter $Y = 3X + 1$ in the $Y =$ list.

KEYSTROKES: $Y=$ 3 $X/\theta/\pi/n$ + 1 ENTER

Step 2 Format the table.

- Use **TBLSET** to select *User* for the independent variable and *Auto* for the dependent variable. Then you can enter any value for the domain.

KEYSTROKES: 2^{nd} F [TBLSET] \blacktriangleright ENTER

Step 3 Find the range by entering the domain values.

- Access the table.

KEYSTROKES: TABLE

- Enter the domain values.

KEYSTROKES: -5 ENTER -2 ENTER ... 4 ENTER

$$y = 3(-5) + 1 = -14$$

X	Y1
-5	-14
-2	-5
0	1
.5	2.5
4	13

The range is $\{-14, -5, 1, 2.5, 13\}$.

Exercises 1b. As X increases by 1 unit, Y decreases by 2 units.

Use the **TABLE** option on a graphing calculator to complete each exercise.

- Consider the function $f(x) = -2x + 4$ and the domain values $\{-2, -1, 0, 1, 2\}$.
 - Use a function table to find the range values. **$\{8, 6, 4, 2, 0\}$**
 - Describe the relationship between the X and Y values.
 - If X is less than -2 , would the value for Y be greater or less than 8? Explain. **See pp. 431A–431H.**
- Suppose you are using the formula $d = rt$ to find the distance d a car travels for the times t in hours given by $\{0, 1, 3.5, 10\}$.
 - If the rate is 60 miles per hour, what function should be entered in the $Y =$ list? **$Y = 60X$**
 - Make a function table for the given domain. **See pp. 431A–431H.**
 - Between which two times in the domain does the car travel 150 miles? **1 h and 3.5 h**
 - Describe how a function table can be used to better estimate the time it takes to drive 150 miles. **See pp. 431A–431H.**
- Serena is buying one packet of pencils for \$1.50 and a number of fancy folders x for \$0.40 each. The total cost y is given by $y = 1.50 + 0.40x$.
 - Use a function table to find the total cost if Serena buys 1, 2, 3, 4, and 12 folders. **$\$1.90, \$2.30, \$2.70, \$3.10, \$6.30$**
 - Suppose plain folders cost \$0.25 each. Enter $y = 1.50 + 0.25x$ in the $Y =$ list as $Y2$. How much does Serena save if she buys pencils and 12 plain folders rather than pencils and 12 fancy folders? **$\$1.80$**



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