

You can use a Sharp EL-9900C graphing calculator to create function tables. If you enter a function and the domain values, the calculator will give you the corresponding range values.

ACTIVITY

Packages of batteries cost \$4 each at a store. Bridgett has a coupon for \$2 off her total purchase. Find the total cost y of buying x packages of batteries. Use a function table to find the range of $y = 4x - 2$ if the domain is $\{2, 5, 6, 8, 10\}$.

Clear the calculator memory and set a standard viewing window.

KEYSTROKES: $\boxed{2\text{ndF}}$ $\boxed{[\text{OPTION}]}$ $\boxed{[\text{ALPHA}]}$ $\boxed{[E]}$ $\boxed{2}$ $\boxed{[\text{CL}]}$ $\boxed{[\text{ENTER}]}$ $\boxed{[\text{ZOOM}]}$ $\boxed{5}$

Step 1 Enter the function.

- The graphing calculator uses x for the domain values and $\boxed{Y=}$ for the range values. So, $\boxed{Y=} = 4x - 2$ represents $y = 4x - 2$.
- Enter $\boxed{Y=} = 4x - 2$.

KEYSTROKES: $\boxed{Y=}$ $\boxed{4}$ $\boxed{X/\theta/T/n}$ $\boxed{-}$ $\boxed{2}$ $\boxed{[\text{ENTER}]}$ $\boxed{[\text{GRAPH}]}$

Step 2 Format the table.

- Add function table.
- KEYSTROKES: $\boxed{2\text{ndF}}$ $\boxed{[\text{TBLSET}]}$
- Edit the Table Settings so you can specify the domain values.
- KEYSTROKES: $\boxed{[\blacktriangleright]}$ $\boxed{[\text{ENTER}]}$
- You can use $\boxed{[\text{GRAPH}]}$ and $\boxed{[\text{TABLE}]}$ to switch between the graph and the table.

Step 3 Find the range by entering the domain values.

- Enter the domain values given above under list 1.

KEYSTROKES: $\boxed{[\text{TABLE}]}$ $\boxed{2}$ $\boxed{[\text{ENTER}]}$ $\boxed{5}$ $\boxed{[\text{ENTER}]}$ $\boxed{6}$ $\boxed{[\text{ENTER}]}$ $\boxed{8}$ $\boxed{[\text{ENTER}]}$ $\boxed{10}$ $\boxed{[\text{ENTER}]}$

X	Y1
2	6
5	18
6	22
8	30
10	38
X=	

- Note the graph is a different representation of the same data.
- The TRACE function could be used to find domain and range values that were not requested.

KEYSTROKES: $\boxed{[\text{TRACE}]}$ and $\boxed{[\blacktriangleleft]}$ or $\boxed{[\blacktriangleright]}$

Analyze the Results

Use the Table option on a Sharp EL-9900C to complete each exercise.

- MULTIPLE REPRESENTATIONS** Suppose you are using the formula $d = rt$ to find the distance d a car travels for the times t in hours given by $\{0, 1, 3.5, 10\}$.

 - ALGEBRAIC** If the rate is 60 miles per hour, what function should be entered in the $\boxed{Y=}$?
 - GRAPHICAL** Make a graph and function table for the given domain. Make sure to use an appropriate window.
 - NUMERICAL** Between which two times in the domain does the car travel 150 miles?
 - NUMERICAL** How many miles will the car have traveled after 12 hours?
 - VERBAL** Describe how a function table and graph can be used to estimate the time it takes to drive 150 miles.