

Graphing Calculator Lab

Functions and Tables

Main IDEA

Use technology to represent and compare functions.

You can use a TI-73 Explorer graphing calculator to represent functions.

ACTIVITY

- 1 GROCERIES** A grocery store has 12-ounce bottles of sports drink on sale for \$1.80 each, with no limit on how many you can buy. In addition, you can use a coupon for \$1 off one bottle. Make a table showing the cost for 3, 4, 5, 6, and 7 bottles of this drink.

STEP 1 Write an equation to show the relationship between the number of bottles purchased x and their cost y .

$$\underbrace{\text{Cost is } \$1.80 \text{ per bottle}}_{1.80x} \underbrace{\text{less } \$1.}_{-1}$$

$$y = 1.80x - 1$$

STEP 2

Press Y= on your calculator. Then enter the function into Y_1 by pressing 1.80 X -- 1 ENTER .



STEP 3

Next, set up a table of x - and y -values. Press 2nd [TBLSET] to display the table setup screen. Then press ↓ ↓ ⇨ ENTER to highlight Indpnt: Ask.



STEP 4

Access the table by pressing 2nd [TABLE]. Then key in each number of bottles, pressing ENTER after each entry.

X	Y1
3	4.4
4	6.2
5	8.0
6	9.8
7	11.6

ANALYZE THE RESULTS

- Analyze the table to determine how many bottles you can buy for \$10. Explain your reasoning.
- MAKE A CONJECTURE** Notice that you can purchase 5 bottles for the whole dollar amount of \$8. How many bottles will you be able to purchase the next whole dollar amount? Use the calculator to test your conjecture.

ACTIVITY

- 2** **CAMPING** Out-There Campground charges each group a camping fee of \$20 plus \$4.25 per person per night. Roughing-It Campground charges \$6.25 per person per night. Make a table showing the one-night fee for 2, 3, 4, 5, and 6 people to camp at each campground.

STEP 1 Write an equation to show the relationship between the number of people x and the one-night fee y for them to camp at each campground.

Out-There Campground

Fee is \$20 plus \$4.25 per person.

$$y = 20 + 4.25x$$

Roughing-It Campground

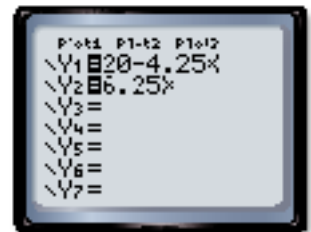
Fee is \$6.25 per person.

$$y = 6.25x$$

READING Math

The phrase \$4.25 per person means \$4.25 for each person.

STEP 2 Enter the function for the Out-There Campground into Y_1 and the function for the Roughing-It Campground into Y_2 .



STEP 3 Next, set up a table of x - and y -values as in Activity 1.

STEP 4 Then access the table and key in each number of people

X	Y ₁	Y ₂
2	28.5	12.5
3	32.75	18.75
4	37	25
5	41.25	31.25
6	45.5	37.5

ANALYZE THE RESULTS

- For 2, 3, 4, 5, and 6 people, which campground charges the greater total nightly cost to camp?
- MAKE A CONJECTURE** Will the nightly total cost to camp at each campground ever be the same? If so, for what number of people?
- Use the graphing calculator to test your conjecture from Exercise 4. Were you correct? If not, use the graphing calculator to guess and check until you find the correct number of people.
- If all other aspects of these two campgrounds are equal, write a recommendation as to which campground a group of n people should choose based on your cost analysis.