

# Graphing Calculator Lab

## Graphing Proportional Relationships

### Main IDEA

Graph proportional relationships.

You can use a TI-73 Explorer graphing calculator to graph an equation that represents a proportional relationship.

### ACTIVITY

**CORN DOGS** The corn dog was invented for the Texas State Fair in 1942. Suppose Booth A at a fair sells corn dogs for \$2 each while Booth B charges \$3 for each corn dog. Write and graph an equation representing the total cost  $y$  for selling  $x$  corn dogs.

**STEP 1** Write an equation to show the relationship between the number of corn dogs sold  $x$  and total cost  $y$  at each booth.

Booth A

Total cost is \$2 per corn dog.

$$y = 2x$$

Booth B

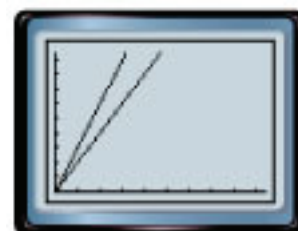
Total cost is \$3 per corn dog.

$$y = 3x$$

**STEP 2** Press  $\text{Y=}$  on your calculator and enter the expression  $2x$  into  $Y1$  and  $3x$  into  $Y2$ .

**STEP 3** Next, change the view of your graph by pressing  $\text{WINDOW}$  and entering the values shown below. It is also possible to show

**STEP 4** Finally, graph the equations by pressing  $\text{Graph}$



### ANALYZE THE RESULTS

- MAKE A CONJECTURE** Which equation is represented by the steeper line? Explain. To check your conjecture, press  $\text{Trace}$  and then use  $\uparrow$  and  $\downarrow$  keys to switch between the two lines.
- MAKE A CONJECTURE** Suppose Booth C sells corn dogs for \$2.50 each. How should the graph of this equation appear in relationship to the graphs of the other two equations? Explain. Check your answer by entering the appropriate equation into  $Y_3$ , pressing  $\text{Graph}$ , and switching between the equations.