

# 10.8 Perform Regressions



**QUESTION** How can you use a graphing calculator to find models for data?

On page 335, you used a graphing calculator to perform linear regression on data to find a linear model for the data. A graphing calculator can also be used to perform exponential regression and quadratic regression.

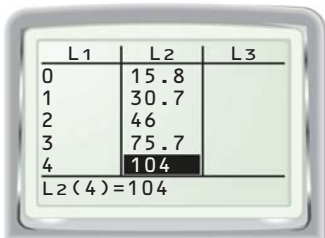
**EXAMPLE 1** Use exponential regression to find a model

The table shows the sales (in millions of dollars) of organic milk, organic half and half, and organic cream in the U.S. each year for the period 1996–2000. Find an exponential model for the data.

Year	1996	1997	1998	1999	2000
Sales (millions of dollars)	15.8	30.7	46	75.7	104

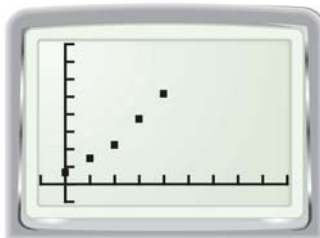
**STEP 1** Enter data

Enter the data into two lists. Let  $x = 0$  represent 1996.



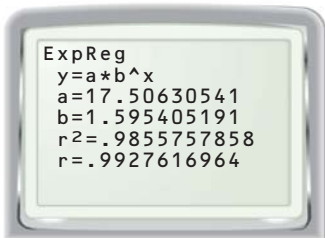
**STEP 2** Make scatter plot

Make a scatter plot of the data. Notice that the points show an exponential trend.



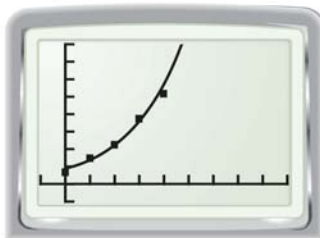
**STEP 3** Perform regression

Use the exponential regression feature to obtain the model  $y = 17.5(1.6)^x$ .



**STEP 4** Check model

Check how well the model fits the data by graphing the model and the data.



**PRACTICE**

- The table shows the value (in dollars) of a car over time. Find an exponential model for the data in the table.

Age of car (years)	0	1	2	3	4	5
Value (dollars)	15,600	13,510	11,700	10,132	8774	7598