

**USING A CALCULATOR** You can use a graphing calculator to find the standard deviation of a data set.

### EXAMPLE 2 Find standard deviation

**HOUSEHOLDS** In 2000 the numbers (in thousands) of households in the 13 states with Atlantic Ocean coastline are given. Find the standard deviation of the data.

299 6338 3006 518 1981 2444 475 3065  
7057 3132 408 1534 2699

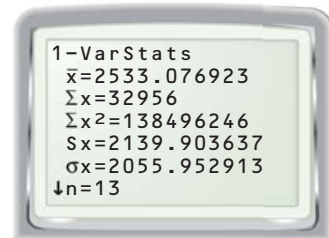
#### Solution

**STEP 1** Enter the data into a graphing calculator. Press **STAT** and select Edit. Enter the data into List 1 ( $L_1$ ).

**STEP 2** Calculate the standard deviation. Press **STAT**. From the CALC menu select 1-Var Stats.

On this screen,  $\sigma_x$  stands for standard deviation.

► The standard deviation of the data is about 2056.



## PRACTICE

### EXAMPLE 1

on p. 879  
for Exs. 1–3

Use the formulas for variance and standard deviation to find the variance and standard deviation of the data. Round to the nearest tenth, if necessary.

- 4, 5, 3, 2, 4, 7, 8, 9, 4, 6, 7, 8, 9, 1
- 14, 16, 19, 20, 28, 7, 24, 15, 16, 30, 33, 24
- 110, 205, 322, 608, 1100, 240, 185, 552, 418, 300

### EXAMPLE 2

on p. 880  
for Exs. 4–7

In Exercises 4–6, use a graphing calculator to find the standard deviation of the data. Round to the nearest tenth, if necessary.

- 3.5, 3.8, 4.1, 3.0, 3.8, 3.6, 3.3, 4.0, 3.8, 3.9, 3.2, 3.0, 3.3, 4.2, 3.0
- 66, 43, 9, 28, 7, 5, 90, 9, 78, 6, 69, 55, 28, 43, 10, 54, 13, 88, 21, 4
- 1002, 1540, 480, 290, 2663, 3800, 690, 1301, 1750, 2222, 4040, 800
- REASONING** The heights (in feet) of 9 pecan trees are 72, 84, 81, 78, 80, 86, 70, 80, and 88. For parts (a)–(c) below, round your answers to the nearest tenth.
  - Find the standard deviation of the data.
  - Suppose you include a pecan tree with a height of 136 feet. *Predict* the effect of the additional data on the standard deviation of the data set.
  - Find the standard deviation of the new data set in part (b). *Compare* the results to your prediction in part (b).