TI Tips

Calculating the statistics

```
EDIT CALC TESTS
1:1-Var Stats
2:2-Var Stats
3:Med-Med
4:LinReg(ax+b)
5:QuadReg
6:CubicReg
7↓QuartReg
```

```
1-Var Stats L1■
```

```
1-Var Stats
x̄=22
Σx=550
Σx²=12480
Sx=3.979112129
σx=3.898717738
↓n=25
■
```

```
1-Var Stats
↑n=25
minX=12
Q1=19.5
Med=22
Q3=25
maxX=29
```

Your calculator can easily find all the numerical summaries of data. To try it out, you simply need a set of values in one of your datalists. We'll illustrate using the boys' agility test results from this chapter's earlier TI Tips (still in L1), but you can use any data currently stored in your calculator.

• Under the STAT CALC menu, select 1-Var Stats and hit ENTER.
• Specify the location of your data, creating a command like 1-Var Stats L1.
• Hit ENTER again.

Voilà! Everything you wanted to know, and more. Among all of the information shown, you are primarily interested in these statistics: x̄ (the mean), Sx (the standard deviation), n (the count), and—scrolling down—minX (the smallest datum), Q_1 (the first quartile), Med (the median), Q_3 (the third quartile), and maxX (the largest datum).

Sorry, but the TI doesn't explicitly tell you the range or the IQR. Just subtract: IQR = Q_3 − Q_1 = 25 − 19.5 = 5.5. What's the range?

By the way, if the data come as a frequency table with the values stored in, say, L4 and the corresponding frequencies in L5, all you have to do is ask for 1-Var Stats L4,L5.

WHAT CAN GO WRONG?

A data display should tell a story about the data. To do that, it must speak in a clear language, making plain what variable is displayed, what any axis shows, and what the values of the data are. And it must be consistent in those decisions.

A display of quantitative data can go wrong in many ways. The most common failures arise from only a few basic errors:
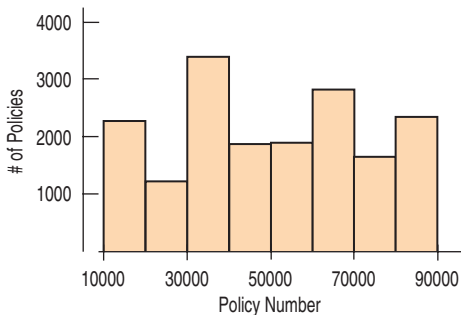
▶ **Don't make a histogram of a categorical variable.** Just because the variable contains numbers doesn't mean that it's quantitative. Here's a histogram of the insurance policy numbers of some workers. It's not very informative because the policy numbers are just labels. A histogram or stem-and-leaf display of a categorical variable makes no sense. A bar chart or pie chart would be more appropriate.

▶ **Don't look for shape, center, and spread of a bar chart.** A bar chart showing the sizes of the piles displays the distribution of a categorical variable, but the bars could be arranged in any order left to right. Concepts like symmetry, center, and spread make sense only for quantitative variables.

FIGURE 4.14

It's not appropriate to display these data with a histogram.