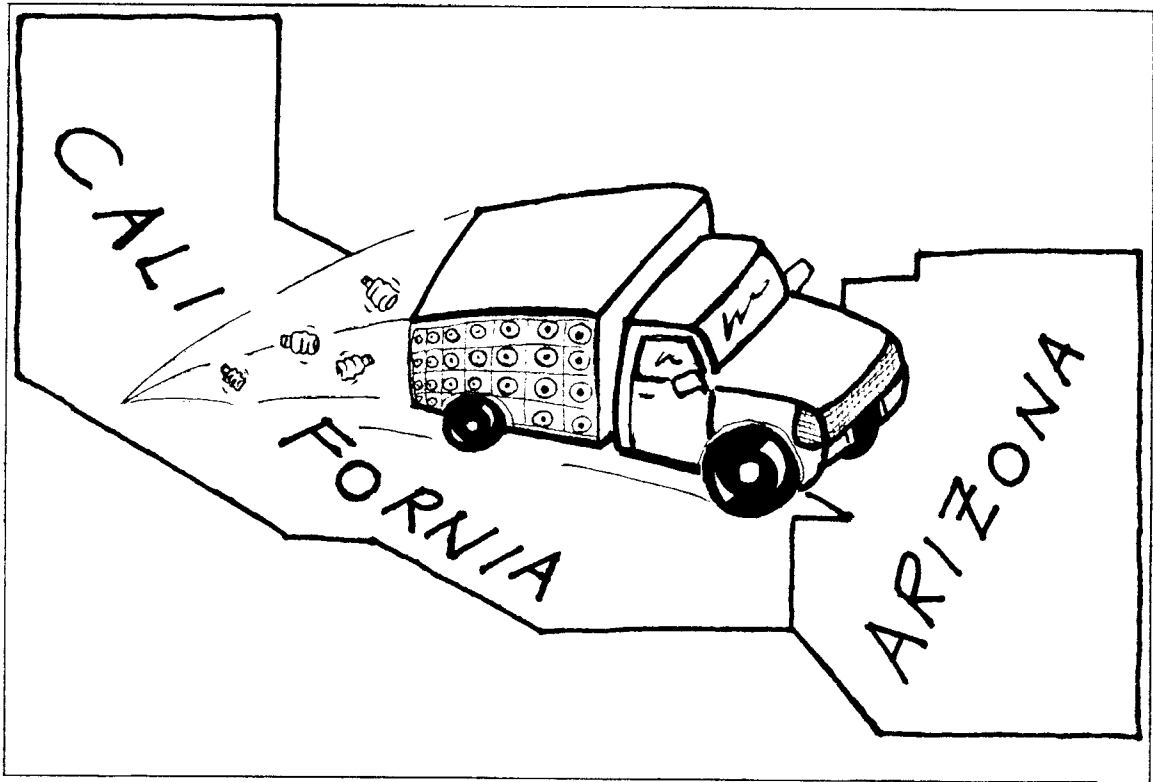


## Trick or Trap 4

### Who Wants Bottled Water?



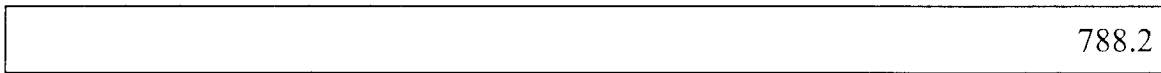
A major metropolitan newspaper ran an article with a bar graph labeled “Thirst for Bottled Water.” It showed California as tops with 788.2 million gallons of bottled water sold in a recent year. Eight other states were shown, but to keep our example straightforward, let’s consider only one other: Arizona, as shown in Figure 1.

Let’s suppose we want to open a bottled-water store to sell premium brands of bottled water as well as accoutrements such as designer bottled-water holders. In which state would we have a better chance of success? Well, at first glance, it might appear that California wins hands down until we consider that California has a population of about 30 million based on the latest census, and Arizona has a population of 3.7 million.

Dividing 788.2 (million gallons) by 30 (million people) for California, we obtain a rate of 26.3 gallons per person. For Arizona, the arithmetic yields 26.6 gallons per person. In other words, *per capita* (per person) consumption is about the same in the two states, as illustrated by Figure 2. So other things being equal (such as locating our store in an equally busy shopping mall in either state), we should expect the populations of the two states to be about equally receptive to the merchandise offered in our store.

What's the lesson here? When comparing two groups of unequal size, we should use a *rate* such as per capita consumption. Another popular rate is percentage, a statistic that we will consider in the next section of this book.

**California**



**Arizona**

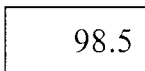
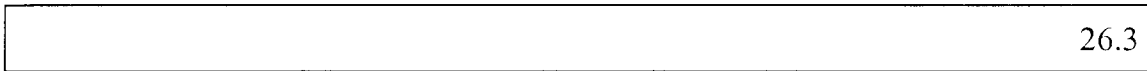


Figure 1 *Potentially misleading*  
Gallons of bottled water consumed (in millions)

**California**



**Arizona**

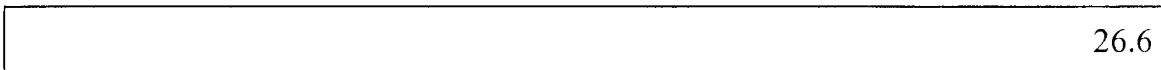


Figure 2 *Correct*  
Gallons of bottled water consumed *per capita* (per person)