chapter problem

Poll: Do you know what Twitter is?

The Pew Research Center recently conducted a survey of 1007 U.S. adults and found that 85% of those surveyed know what Twitter is. Based on the results of that poll, media reports suggested that 85% of the adult population know what Twitter is. How do they know that? Did they somehow obtain survey results from the population of *all* adults in the U.S.? No. Those media reports are *estimates* based on the results from the poll.

Currently, there are 241,472,385 adults in the United States. Because the Twitter poll involved only 1007 respondents, we see that only 0.0004% of the population was polled. It is natural to question the accuracy of results based on a sample that is so small when compared to the ginormous size of the population. Statistics to the rescue! Using methods presented in this chapter, we can answer questions such as these:

- How do we actually use sample results to estimate values of population parameters? Specifically, if a sample of 1007 adults is polled and it is found that 85% of them know what Twitter is, what does that sample percentage tell us about the percentage for the whole population of adults?

- How accurate is the sample result of 85% likely to be?

- Given that only 1007 people were polled in the population of 241,472,385 adults, is the sample size too small to be meaningful?

- Does the *method* of selecting the sample units have much of an effect on the results?

We can answer the last question based on the sound sampling methods discussed in Chapter 1. The method of selecting the people or households to be surveyed most definitely has an effect on the results. The results are likely to be poor if a convenience sample or some other nonrandom sampling method is used. If the sample is a simple random sample, the results are likely to be good. Because the Pew Research Center uses sophisticated sampling methods that are very carefully planned, its results are generally quite good. The Pew Research Center is a reputable polling company that uses sound sampling methods, so it is reasonable to treat the sample of 1007 adults as a simple random sample.

Our ability to understand polls and surveys and to interpret the results is crucial for our role as citizens. As we consider the topics of this chapter, we will learn much about polls and surveys and how to correctly interpret and present results.