6.4 Sampling Distributions and Estimators

Key Concept In this section we consider the concept of a *sampling distribution of a statistic*. Instead of focusing on the original population, we want to focus on the values of *statistics* (such as sample means or sample proportions) obtained from the population. (The population is like parents, and sample statistics are like children; we all know how parents behave, and now we want to study the behavior of their children.) For example, if pollsters each randomly selected 50 people from the population, obtained their incomes, then computed the mean of each sample of 50 values, what do we know about the sample means that are obtained? How are those sample means distributed? What is the mean of those sample means? Table 6-2 tells us the key points that we need to know, so try really, really hard to understand the story that Table 6-2 tells.

The Story of Table 6-2 To understand Table 6-2, let's start with the top section that describes means. Beginning at the left, imagine a population having a mean μ,

Table 6-2 General Behavior of Sampling Distributions