that the histogram in Figure 2-2 roughly satisfies those two conditions, so we say that the IQ scores are approximately normally distributed. (There are more advanced and less subjective methods for determining whether the distribution is a normal distribution; see Section 6-6.) Many statistical methods require that sample data come from a population having a distribution that is approximately a normal distribution, and we can often use a histogram to determine whether this requirement is satisfied.

Common Distribution Shapes

The histograms shown in Figure 2-5 depict four common distribution shapes. We have already discussed the characteristics of the normal distribution. With a **uniform distribution,** the different possible values occur with approximately the same frequency, so the heights of the bars in the histogram are approximately uniform, as in Figure 2-5(b). Figure 2-5(b) depicts outcomes of digits from state lotteries.

Skewness

A distribution of data is **skewed** if it is not symmetric and extends more to one side than to the other. Data **skewed to the right** (also called *positively skewed*) have a longer right tail, as in Figure 2-5(c), which depicts annual incomes (in thousands of dollars) of adult Americans. Data **skewed to the left** (also called *negatively skewed*) have a longer left tail, as in Figure 2-5(d). Distributions skewed to the right are more common than those skewed to the left because it's often easier to get exceptionally
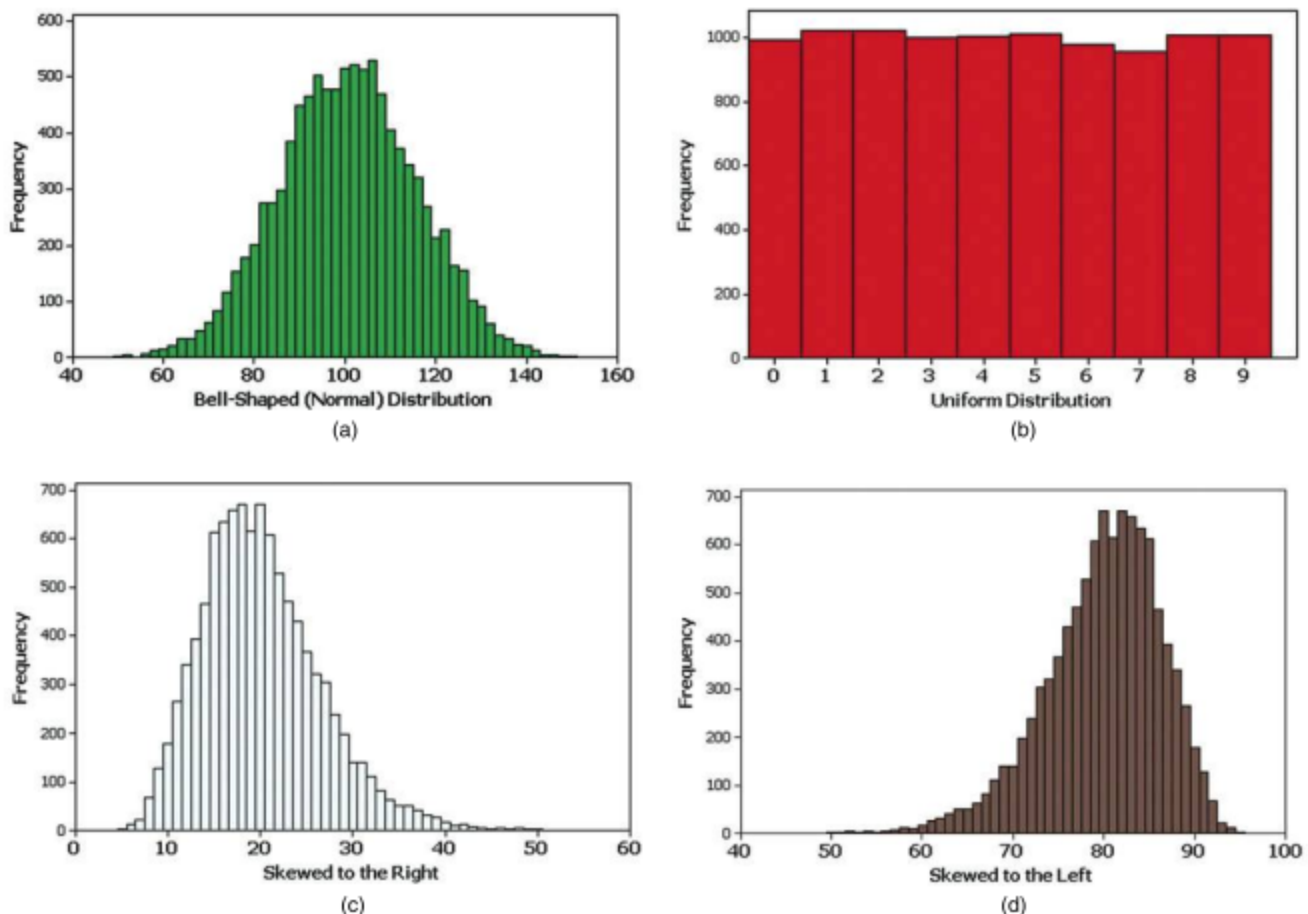

Figure 2-5   Common Distributions