



Figure 6-17 Sitting Heights

In Example 2, we were concerned with the *mean* weight of elevator passengers, but in Example 3, the most relevant consideration involves the distribution of *individual* sitting heights. It is important to use sound *critical thinking* in determining what is most relevant.

Introduction to Hypothesis Testing

Carefully examine the conclusions that are reached in the next example illustrating the type of thinking that is the basis for the important procedure of hypothesis testing (discussed in Chapter 8). Example 4 uses the rare event rule for inferential statistics, first presented in Section 4-1.

Rare Event Rule for Inferential Statistics

If, under a given assumption, the probability of a particular observed event is extremely small (such as less than 0.05), we conclude that the assumption is probably not correct.

Example 4 Filling Coke Cans

Cans of regular Coke are labeled to indicate that they contain 12 oz. Data Set 19 in Appendix B lists measured amounts for a sample of Coke cans. The corresponding sample statistics are $n = 36$ and $\bar{x} = 12.19$ oz. Assuming that the Coke cans are filled so that $\mu = 12$ oz (as labeled) and the population standard deviation is $\sigma = 0.11$ oz (based on the sample results), find the probability that a sample of 36 cans will have a mean of 12.19 oz or greater. Do these results suggest that the Coke cans are filled with an amount greater than 12.00 oz?