It appears that the greater exposure to lead tends to be associated with lower IQ scores. Figure 2-15 enables us to understand data in a way that is not possible with visual examination of the lists of data in Table 2-1.

Ogive

Another type of statistical graph is an **ogive** (pronounced "oh-jive"), which depicts *cumulative* frequencies. Ogives are useful for determining the number of values below some particular value, as illustrated in Example 3. An ogive uses class boundaries along the horizontal scale and uses cumulative frequencies along the vertical scale.

Example 12   Ogive: IQ Scores of Low Lead Group

Figure 2-16 shows an ogive corresponding to the cumulative frequency distribution table (Table 2-5) on page 48. From Figure 2-16, we see that for the low lead group, 35 of the IQ scores are less than 89.5.
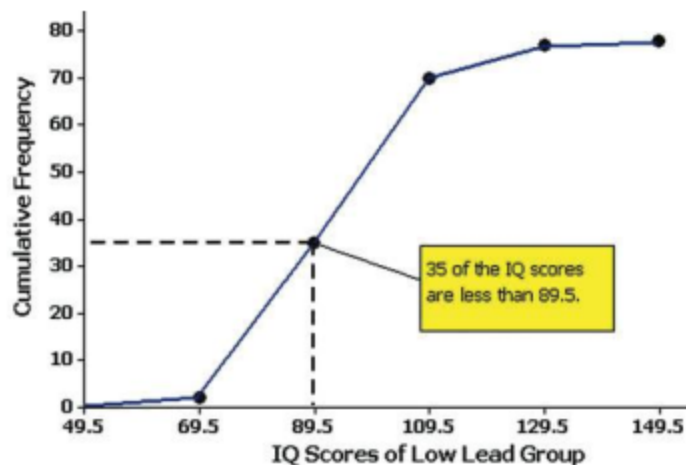

Figure 2-16   Ogive: IQ Scores of Low Lead Group

Graphs That Deceive

Some graphs deceive because they contain errors, and some deceive because they are technically correct but misleading. It is important to develop the ability to recognize deceptive graphs. Here we present two of the ways in which graphs are commonly used to deceive.

Example 13   Nonzero Axis

Figure 2-17 and Figure 2-18 are based on the same data from Data Set 14 in Appendix B. By using a vertical scale starting at 30 mi/gal instead of at 0 mi/gal, Figure 2-17 exaggerates the differences and creates the false impression that the Honda Civic gets mileage that is substantially better than the mileage ratings found for the Chevrolet Aveo and the Toyota Camry. Figure 2-18 shows that the differences among the three mileage ratings are actually small.