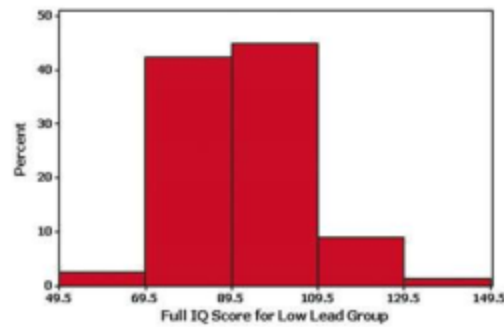


**Figure 2-2** Histogram



**Figure 2-3** Relative Frequency Histogram

### Relative Frequency Histogram

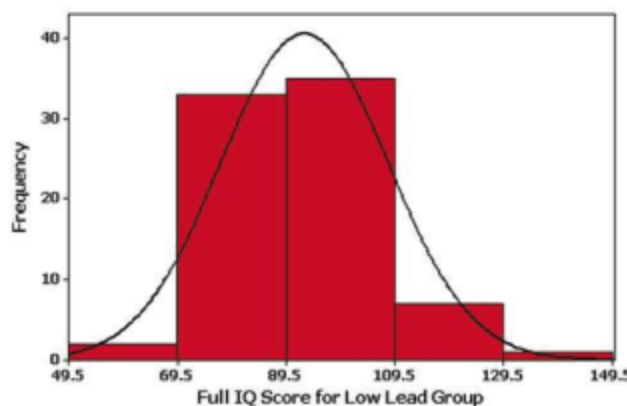
A **relative frequency histogram** has the same shape and horizontal scale as a histogram, but the vertical scale uses relative frequencies (as percentages or proportions) instead of actual frequencies. Figure 2-3 is the relative frequency histogram corresponding to Figure 2-2.

### Critical Thinking: Interpreting Histograms

Even though creating histograms is more fun than human beings should be allowed to have, the ultimate objective is not creating a histogram, but rather *understanding* something about the data. Analyze the histogram to see what can be learned about “CVDOT”: the center of the data, the variation (which will be discussed at length in Section 3-3), the distribution, and whether there are any outliers (values far away from the other values). Examining Figure 2-2, we see that the histogram is centered close to 90, the values vary from around 50 to 150, and the distribution is roughly bell-shaped.

### Normal Distribution

When graphed as a histogram, a normal distribution has a “bell” shape similar to the one superimposed in Figure 2-4. In a normal distribution, (1) the frequencies increase to a maximum and then decrease, and (2) the graph has symmetry, with the left half of the histogram being roughly a mirror image of the right half. Figure 2-4 shows



**Figure 2-4** Bell-Shaped Distribution  
Because this histogram is roughly bell-shaped, we say that the data have a *normal distribution*.