4. **The first and third quartiles**
   a. The location of the median is $\frac{n}{2}$, the first quartile's location is $\frac{n}{4}$, and the third quartile's location is $\frac{3n}{4}$.

   b. Sample size divided by four equals 15/4 = 3.75. Counting down the frequency distribution on the previous page reveals that the first quartile is near the middle of the second class.

   c. $\frac{3n}{4} = \frac{3 \times 15}{4} = \frac{45}{4} = 11.25$ Counting down reveals the third quartile is in the fourth class.

$$Q_1 = L + \frac{\frac{n}{4} - CF_b}{f}(i)$$

$$= 59.5 + \frac{\frac{15}{4} - 2}{3}(10)$$

$$= 59.5 + \frac{3.75 - 2}{3}(10)$$

$$Q_1 = 59.5 + 5.8 = 65.3$$

From page 23

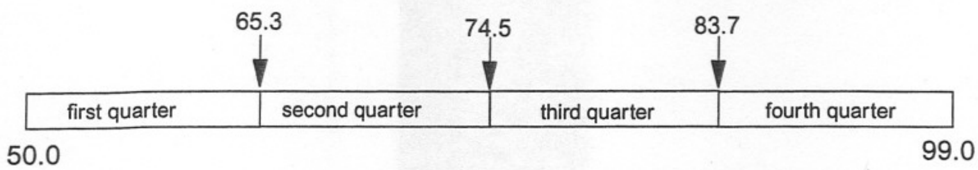
$$Q_2 = 74.5$$

$$Q_3 = L + \frac{\frac{3n}{4} - CF_b}{f}(i)$$

$$= 79.5 + \frac{\frac{45}{4} - 10}{3}(10)$$

$$= 79.5 + \frac{11.25 - 10}{3}(10)$$

$$Q_3 = 79.5 + 4.2 = 83.7$$



C. **Interquartile range**
   1. The interquartile range is the difference between Q_3 and Q_1.

   2. $Q_3 - Q_1 = 83.7 - 65.3 = 18.4$

D. **Percentiles**
   1. Percentiles separate data into 100 parts.
   2. Let x equal the percentile of interest.
   3. Here, the 90th percentile of daily rentals beginning 1/2/98 is of interest.
   4. The location of the 90th percentile is found using this expression.

$$\frac{xn}{100}$$

$$\frac{xn}{100} = \frac{90(15)}{100} = 13.5$$

Counting down the frequencies reveals the 90th percentile is in the bottom class.

$$P_x = L + \frac{\frac{xn}{100} - CF_b}{f}(i)$$

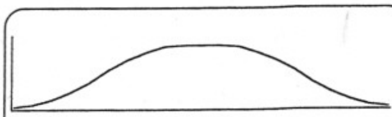
$$P_x = L + \frac{\frac{xn}{100} - CF_b}{f}(i)$$

$$P_{90} = 89.5 + \frac{\frac{90(15)}{100} - 13}{2}(10)$$

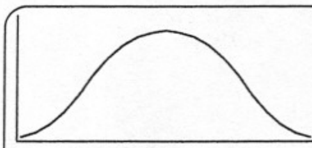
$$= 89.5 + \frac{13.5 - 13}{2}(10)$$

$$= 92.0$$

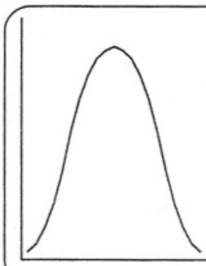
VI. **Kurtosis describes the peak of a curve.**



A **platykurtic** curve is flat, items are evenly distributed.



A **mesokurtic** curve is not flat or peaked.



A **leptokurtic** curve is thin, items are concentrated in the middle.