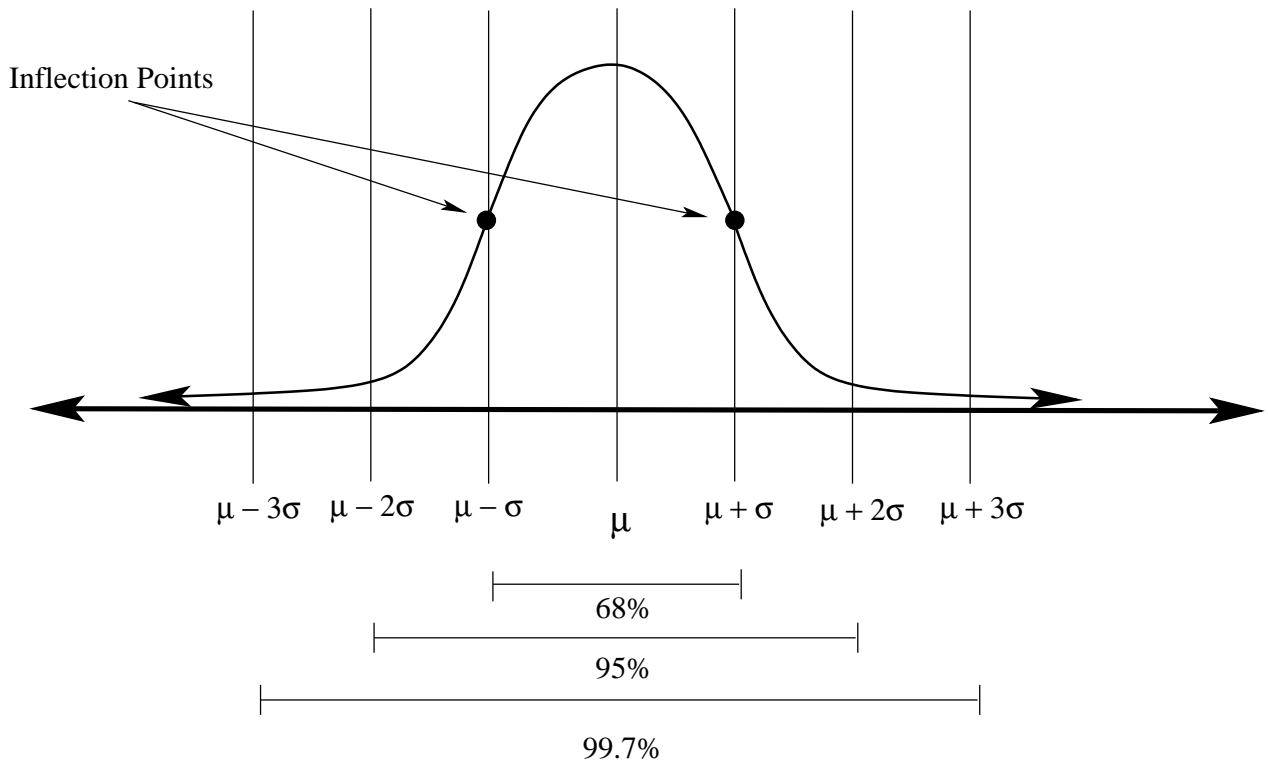


The Normal Distribution:



Note: We think of this distribution as representing the data of an *entire population* rather than a specific sample. Therefore, we will label its mean and standard deviation using μ and σ rather than \bar{x} and s , which we use for the mean and standard deviation of a specific sample drawn from a population.

Properties of the Normal Distribution:

1. It is roughly “Bell - Shaped”.
2. The highest point is the mean of the distribution, μ .
3. The mean, median, and mode of this distribution all have the same value, μ .
4. The distribution is symmetric with respect to the mean (that is, the right and left sides are mirror images of each other).
5. The total area under the curve is 1 (so we think of the area under a region as the percentage of data points in the population that fall within that range)
6. The 68% - 95% - 99.7% Rule:
 - About 68% of the data values fall within one standard deviation of the mean.
 - About 95% of the data values fall within two standard deviations of the mean.
 - About 99.7% of the data values fall within three standard deviations of the mean.