

Continuous Probability Distributions

Normal Distribution

Normal Probability

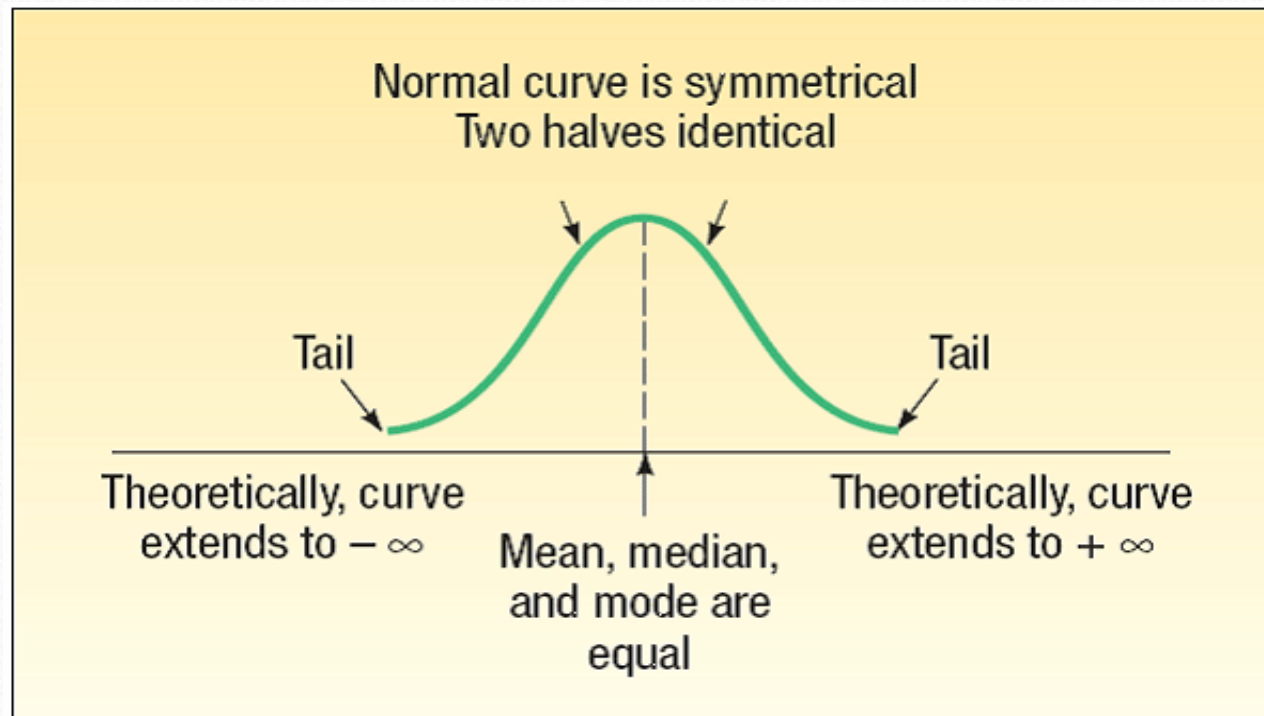
□ Characteristics of a Normal Probability Distribution

1. It is **bell-shaped** and has a single peak at the center of the distribution.
2. It is **symmetrical** about the mean
3. It is **asymptotic**: The curve gets closer and closer to the X -axis but never actually touches it. To put it another way, the tails of the curve extend indefinitely in both directions.

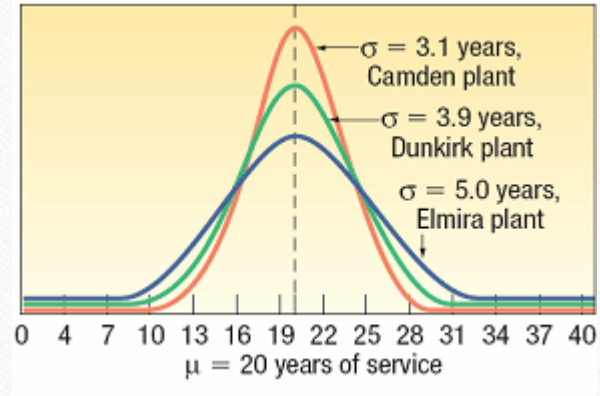
Normal Distribution

-
4. The location of a normal distribution is determined by the mean, μ , the dispersion or spread of the distribution is determined by the standard deviation, σ .
 5. The arithmetic mean, median, and mode are equal.
 6. The total area under the curve is 1.00; half the area under the normal curve is to the right of this center point and the other half to the left of it.

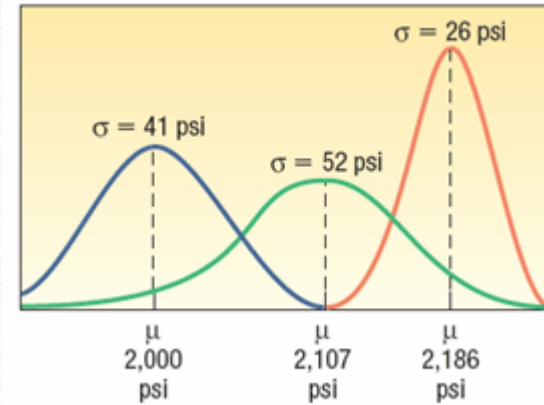
The Normal Distribution - Graphically



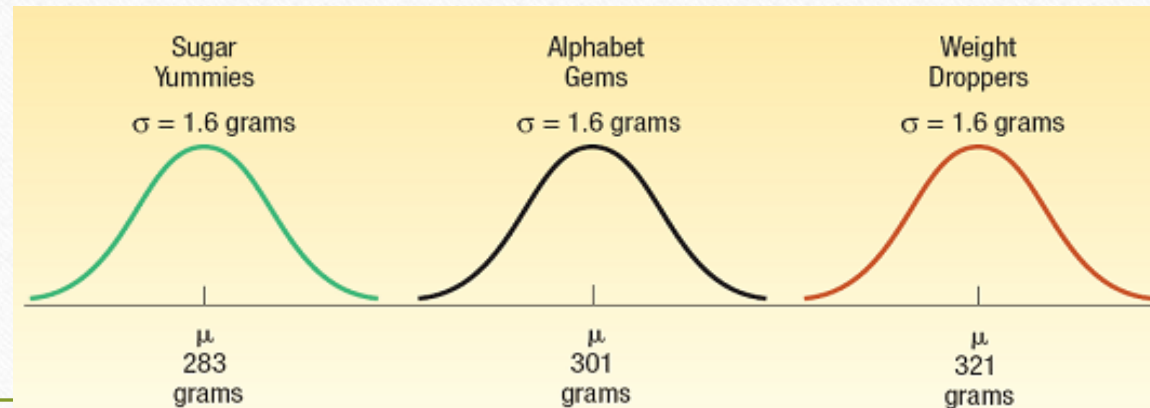
The Family of Normal Distribution



Equal Means and Different Standard Deviations



Different Means and Standard Deviations



Different Means and Equal Standard Deviations

Normal Probability

To be Continued -----