Notes: Monday January 14, 2013

Sidenote: the mean is an expected value. It is what we expect to occur given multiple measurements

Independence:

$$\Pr(Y = y \mid X = x) = \Pr(Y = y)$$

Basically, given X=x, nothing can be ascertained about Y = y.

Normal Distribution:

Is a symmetric bell shaped curve characterized by μ and σ. For each fixed number z, the probability concentrated within z standard deviations of μ is the same for all normal distributions. In particular, for $z = 1$, or one standard deviation, 68% of all observations fall within that standard deviation. $z = 2$ contains 95% of all observations, and $z = 3$ contains about 98% $[check]$

A z-value of $2.3 \; = \; the \; 99th$ percentile

To Calculate a z-score:

$$z = \frac{(y_i \; - \mu)}{\sigma}$$