$\hat{y} = a + bx$

Residual = data – model OR Residual = observed – predicted

$z = \dfrac{x-\mu}{\sigma}$ (Model based) $z = \dfrac{x-\bar{x}}{s}$ (Data based)

$x = \mu + z\sigma$

For independent events, P(A and B) = P(A)P(B)
For dependent events, P(A and B) = P(B)P(A|B)
P(A or B) = P(A)+P(B) – P(A and B)

Statistics	$\bar{x}$	$\bar{x}$	$\bar{x}_1 - \bar{x}_2$
Sampling Distribution	σ known	σ NOT known	
Mean	$\mu(\bar{x}) = \mu$	$\mu(\bar{x}) = \mu$	
Standard Deviation (σ known)	$\sigma(\bar{x}) = \dfrac{\sigma}{\sqrt{n}}$		
Standard Error		$SE(\bar{x}) = \dfrac{s}{\sqrt{n}}$	$SE = \sqrt{\dfrac{s_1^2}{n_1} + \dfrac{s_2^2}{n_2}}$
Confidence Interval	$\bar{x} \pm z^* \left(\dfrac{\sigma}{\sqrt{n}}\right)$	$\bar{x} \pm t_{df}^* \left(\dfrac{s}{\sqrt{n}}\right)$	$(\bar{x}_1 - \bar{x}_2) \pm t_{df}^* SE$
Sample Size	$n = \left(\dfrac{z^*\sigma}{ME}\right)^2$		
Test Statistic	$z = \dfrac{\bar{x}-\mu}{\frac{\sigma}{\sqrt{n}}}$	$t = \dfrac{\bar{x}-\mu}{\frac{s}{\sqrt{n}}}$	$t = \dfrac{(\bar{x}_1 - \bar{x}_2)}{SE}$