

Large Samples, Unknown Variance use: $s = \sqrt{\frac{\sum x^2 - n\bar{x}^2}{n-1}}$ for σ

$$z' = \frac{\bar{x} - \mu'}{\sigma / \sqrt{n}}$$

$$z' = z + \frac{(\mu - \mu')}{\sigma / \sqrt{n}}$$

Small Samples, Unknown Variance use: $t = \frac{\bar{x} - \mu}{s / \sqrt{n-1}}$

$$t' = \frac{\bar{x} - \mu'}{s / \sqrt{n-1}}$$

$$t' = t + \frac{\mu - \mu'}{s / \sqrt{n-1}}$$

Adjusting α and β

Adjust the size of the Error we wish to Detect Change the sample size n