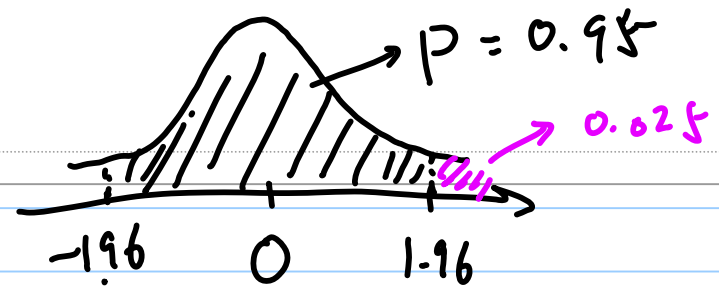


Note Title

11/7/2013



$Var(\bar{x})$

$$Z = \frac{\sqrt{n}(\bar{X} - \theta)}{S} \sim N(0, 1)$$

$$P\left(\bar{X} - 1.96 \frac{S}{\sqrt{n}} < \theta < \bar{X} + 1.96 \frac{S}{\sqrt{n}}\right) \approx 0.95$$

$$P(-1.96 \leq Z \leq 1.96) = 0.95$$

$$P\left(-1.96 \leq \sqrt{n} \frac{(\bar{x} - \theta)}{S} \leq 1.96\right) = 0.95$$

$$P\left(\bar{x} - \frac{1.96S}{\sqrt{n}} \leq \theta \leq \bar{x} + \frac{1.96S}{\sqrt{n}}\right) = 0.95$$