

A106270043
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3. $n=10$ $\bar{x}=13.63$ $s=6.05$, $n-1=9$, $1-\alpha=0.98$ $\frac{\alpha}{2}=0.01$

$$\bar{x} \pm t_{\frac{\alpha}{2}}(n-1) \frac{s}{\sqrt{n}} = 13.63 \pm t_{0.01}(9) \frac{6.05}{\sqrt{10}}$$

$$= 13.63 \pm 8.39 (8.24, 19.02)^*$$

4 (1) $n=1200$, $\hat{p}=0.33$ $1-\alpha=0.98$

$$0.33 \pm z_{\frac{\alpha}{2}} \sqrt{\frac{p(1-p)}{n}} = 0.33 \pm 2.327 \times \sqrt{\frac{0.33 \times 0.67}{1200}} = 0.33 \pm 0.03$$

$$= (0.30, 0.36)^*$$

(2) $n=800$, $X_1=650$ $\hat{p}=\frac{650}{800}=0.81$

$$1-\alpha=0.95 \quad \frac{\alpha}{2}=0.025 \quad 0.81 \pm 1.96 \times \sqrt{\frac{0.81 \times 0.19}{800}} = 0.81 \pm 0.014$$

$$= 0.81 \pm 0.01 = (0.80, 0.82)$$

14. (1) $n=15$ $\bar{x}=1.73$, $s=0.8$ $1-\alpha=0.9$ $t_{\frac{\alpha}{2}}(n-1)=2.145$

$$1.73 \pm t_{0.05}(14) \frac{0.8}{\sqrt{15}} = 1.73 \pm 2.145 \frac{0.8}{\sqrt{15}} = 1.73 \pm 0.44$$
$$= (1.29, 2.17)$$

$$1.73 \pm t_{0.10}(14) \frac{0.8}{\sqrt{15}} = 1.73 \pm 1.345 \frac{0.8}{\sqrt{15}} = 1.73 \pm 0.28$$

$$= (1.45, 2.01)$$