

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

$$\bar{x} \pm t_{\frac{\alpha}{2}}(n-1) \frac{s}{\sqrt{n}} = 13.63 \pm t_{0.01}(9) \frac{6.05}{\sqrt{10}} \\ = 13.63 \pm 2.821 \times 1.91 = (8.24, 19.02)$$

$$4, \quad (1) \quad n=1200, \quad \hat{p}=0.33, \quad 1-\alpha=0.98, \quad \frac{\alpha}{2}=0.01$$

$$\hat{p} \pm z_{\frac{\alpha}{2}} \sqrt{\frac{\hat{p}(1-\hat{p})}{n}} = 0.33 \pm z_{0.01} \sqrt{\frac{0.33 \cdot 0.67}{1200}} = (0.30, 0.36)$$

$$(2) \quad n=820, \quad x=650, \quad \hat{p} = \frac{650}{820} = 0.79, \quad 1-\alpha=0.95, \quad \frac{\alpha}{2}=0.025$$

$$0.79 \pm 1.96 \times \sqrt{\frac{0.79 \times 0.21}{820}} = (0.76, 0.82)$$

$$(3) \quad n=10, \quad \bar{x}=13.63, \quad s=6.05, \quad 1-\alpha=0.98, \quad \frac{\alpha}{2}=0.01$$

$$\bar{x} \pm t_{\frac{\alpha}{2}}(n-1) \frac{s}{\sqrt{n}} = 13.63 \pm t_{0.01} \frac{6.05}{\sqrt{10}} = (8.24, 19.02)$$

$$14, \quad (1) \quad n=15, \quad \bar{x}=1.73, \quad s=0.8, \quad 1-\alpha=0.95, \quad t_{\frac{\alpha}{2}}(n-1)=2.145$$

$$1.73 \pm t_{0.025}(14) \frac{0.8}{\sqrt{15}} = 1.73 \pm 2.145 \times \frac{0.8}{\sqrt{15}} \\ = (1.29, 2.17)$$

$$(2) \quad 1.73 \pm t_{0.10}(14) \frac{0.8}{\sqrt{15}}$$

$$= 1.73 \pm 1.345 \frac{0.8}{\sqrt{15}} = (1.45, 2.01)$$

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