

$$3. \quad h = 10 \quad \bar{x} = 13.63 \quad n-1 = 9$$

$$1-\alpha = 0.98 \quad \frac{\alpha}{2} = 0.01$$

$$\bar{x} \pm t_{\frac{\alpha}{2}}(n-1) = \frac{s}{\sqrt{n}} = 13.63 \pm 1.01(9) \frac{6.05}{\sqrt{10}}$$

$$= 13.63 \pm 2.8 = 10.83$$

$$= 13.63 \pm 5.39$$

$$(8.24, 19.02) \#$$

$$4. \quad (1) \quad n = 1200, \quad p = 0.33 \quad 1-\alpha = 0.98$$

$$0.33 \pm z_{\frac{\alpha}{2}} \sqrt{\frac{p(1-p)}{n}}$$

$$= 0.33 \pm 2.327 \times \sqrt{\frac{0.33 \times 0.67}{1200}}$$

$$= 0.33 \pm 0.3$$

$$= (0.03, 0.36) \#$$

$$(2) \quad n = 820 \quad x_1 = 650$$

$$\hat{p} = \frac{650}{820} = 0.79$$

$$1-\alpha = 0.95 \quad \frac{\alpha}{2} = 0.025$$

$$0.79 \pm 1.96 \times \sqrt{\frac{0.79 \times 0.21}{820}}$$

$$= 0.79 \pm 1.96 \times 0.014$$

$$= 0.79 \pm 0.03$$

$$= (0.76, 0.82) \#$$

$$14. \quad (1) \quad n = 15 \quad \bar{x} = 1.73 \quad s = 0.8 \quad 1-\alpha = 0.95$$

$$t_{\frac{\alpha}{2}}(n-1) = t_{0.025}(14)$$

$$= 2.145$$

$$1.73 \pm t_{0.025}(14) \frac{0.8}{\sqrt{15}}$$

$$= 1.73 \pm 2.145 \frac{0.8}{\sqrt{15}}$$

$$= 1.73 \pm 0.44$$

$$= (1.29, 2.17) \#$$

$$1.73 \pm t_{0.01}(14) \frac{0.8}{\sqrt{15}}$$

$$= 1.73 \pm 1.345 \frac{0.8}{\sqrt{15}}$$

$$= 1.73 \pm 0.28$$

$$= (1.45, 2.01) \#$$

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