習 14.

$n=15$ $\bar{x}=1.73$ $S=0.8$ $1-\alpha=0.95$

$t_{\frac{\alpha}{2}}(14) = t_{0.025}(14) = 2.145$

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

$= 1.73 \pm 0.44 = (1.29, 2.17)$

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

$= 1.73 \pm 1.345\frac{0.8}{\sqrt{15}} = 1.73 \pm 0.28$

$= (1.45, 2.01)$

$$\cdot \left(\frac{1}{21.15^2} \times \frac{1}{344} , \frac{1}{21.15^2} \times \frac{1}{0.29} \right)$$

$$= (0.06, 0.66)$$

习 3.

$$n=10 \quad \bar{x}=13.63 \quad S=6.05 \quad n-1=9 \quad 1-\alpha=0.98 \quad \frac{\alpha}{2}=0.01$$

$$\frac{\bar{x}}{\bar{x}} \pm t_{\frac{\alpha}{2}}(n-1) \frac{S}{\sqrt{n}} = 13.63 \pm t_{0.01}(9) \frac{6.05}{3}$$

$$= 13.63 \pm 2.821 \times 1.91 = 13.63 \pm 5.39 \qquad (8.24, 19.02)$$

习 4.

(1) $\lambda=1200 \quad \hat{p}=0.33 \quad 1-\alpha=0.98$

$$0.33 \pm Z_{0.005} \sqrt{\frac{0.33 \times 0.67}{1200}} = 0.33 \pm 2.327 \sqrt{\frac{0.33 \times 0.67}{1200}} = 0.33 \pm 0.3$$

$$= (0.30, 0.36)$$

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

$$0.79 \pm 1.96 \times 0.014$$

$$= 0.79 \pm 0.03 = (0.76, 0.82)$$