$H_0: \mu \geq 70$, $H_1: \mu < 70$

習3.

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

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

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

習4

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

$0.33 \pm z_{0.005}\sqrt{\frac{0.33\times0.67}{1200}} = 0.33 \pm 2.327\sqrt{\frac{0.33\times0.67}{1200}} = 0.33 \pm 0.3$

$= (0.30, 0.36)$

(2) $n=800$ $\bar{x}=650$ $\hat{p}=\frac{650}{800}=0.79$

$0.79 \pm 1.96 \times 0.014$

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

習14

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

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

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

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

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

$= 1.73 \pm 1.345\frac{0.8}{\sqrt{15}} = 1.73 \pm 0.28 = (1.45, 2.01)$.