习 9.

$n=6 \quad \bar{x}=14.33$

(1) $\sigma=\sqrt{\frac{\Sigma(x_i-14.33)^2}{5}}=\sqrt{\Sigma x_i^2-n\bar{x}^2}$

$=\sqrt{\frac{1284-6\times 14.33^2}{5}}=\sqrt{10.38}=3.22$

(2) $1-\sigma=0.9 \quad \frac{\alpha}{2}=0.05$ 自由度 $n-1=5$

$\chi^2_{0.05}(5)=11.07 \quad \chi^2_{1-\frac{\alpha}{2}}(n)=\chi^2_{0.95}(5)=1.15$

$\left(\sqrt{\frac{5\times 10.38}{11.07}},\ \sqrt{\frac{5\times 10.38}{1.15}}\right)$

$=(2.17,\ 6.72)$

习 20.

$n_1=9 \quad \bar{x}_1=7.67$

$s_1=\sqrt{\frac{x_1^2-n\bar{x}^2}{8}}=\sqrt{85.94}=9.27$

$n_2=9 \quad \bar{x}_2=6.78 \quad S_2=21.15$

$n=\left(\frac{9.27^2}{9}+\frac{21.15^2}{9}\right)/\left(\frac{9.27^2/9}{8}+\frac{21.15^2}{8}\right)=10.96\doteq 11$

(1) $(\bar{x}-\bar{y})\pm t_{\frac{\alpha}{2}}(11)\sqrt{\frac{9.27^2}{9}+\frac{21.152}{9}}$

$=0.89\pm 2.201\times 7.70=0.89\pm 16.95$

$(-16.06,\ 17.84)$