6.10. $n_1=250$, $\bar{x}=14.5$ $s_1=3.5$

$n_2=180$ $\bar{y}=20.8$ $s_2=3.8$

(1) $\bar{x}-\bar{y}=14.5-20.8=-6.3$

(2) $1-\alpha=0.98$, $\frac{\alpha}{2}=0.01$ $Z_{\frac{\alpha}{2}}=Z_{0.01}=2.327$

$(\bar{x}-\bar{y})\pm Z_{\frac{\alpha}{2}}\sqrt{\frac{s_1^2}{n_1}+\frac{s_2^2}{n_2}}$

$=(14.5-20.8)\pm 2.327\sqrt{\frac{(3.5)^2}{250}+\frac{(3.8)^2}{180}}$

$=(-6.3)\pm 0.84$.

$(-7.14,-5.46)$.

∴平均一周阅读时间介于5.46至7.14之间.

6.11. $n_1=12$. $\bar{x}=36$ $s_1=5$

$n_2=15$. $\bar{y}=32$. $s_2=7$. $1-\alpha=0.9$ $\frac{\alpha}{2}=0.05$

$t_{\frac{\alpha}{2}}(n_1+n_2-2)=t_{0.05}(25)=1.708$

$s_p^2=\frac{(n_1-1)s_1^2+(n_2-1)s_2^2}{n_1+n_2-2}$

$=\frac{(12-1)5^2+(15-1)7^2}{12+15-2}$

$=\frac{961}{25}=38.44$.

3. $n=10$, $\bar{x}=1363$ $S=6.37$ $n-1=9$ $1-\alpha=0.98$ $\frac{\alpha}{2}=0.01$

$t_{0.01}(9)=2.821$

μ 的98%信赖区间.

$\bar{x}\pm t_{\frac{\alpha}{2}}(n-1)\frac{s}{\sqrt{n}}=1363\pm t_{0.01}(9)\frac{6.05}{\sqrt{10}}$

$=1363\pm 2.821\times 1.91$

$=1363\pm 5.39$.

即(8.24, 19.07)

4(1) $1-\alpha=0.98$ $\frac{\alpha}{2}=0.01$ $Z_{\frac{\alpha}{2}}=Z_{0.01}=2.327$.

P 的98%信赖区间为.

$\hat{p}\pm Z_{\frac{\alpha}{2}}\sqrt{\frac{\hat{p}(1-\hat{p})}{n}}=0.33\pm 2.327\times\sqrt{\frac{0.33\times 0.67}{100}}$

$=0.33\pm 0.03$

(0.3, 0.36)

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

$Z_{\frac{\alpha}{2}}=Z_{0.025}=1.96$

P 的95%信赖区间.

$\hat{p}\pm Z_{\frac{\alpha}{2}}\sqrt{\frac{\hat{p}(1-\hat{p})}{n}}=0.79\pm 1.96\times\sqrt{\frac{0.79\times 0.21}{820}}$

$=0.79\pm 1.96\times 0.014$

$=0.79\pm 0.03$

即(0.76, 0.82)

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

$t_{\frac{\alpha}{2}}(n-1)=t_{0.025}(14)=2.145$

$1-\alpha=0.8$ $t_{\frac{\alpha}{2}}(n-1)=t_{0.1}(14)=1.345$

μ 95% 信赖区间为.

$\bar{x}\pm t_{\frac{\alpha}{2}}(n-1)\frac{S}{\sqrt{n}}=1.73\pm t_{0.025}(14)\frac{0.8}{\sqrt{15}}$

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

$=1.73\pm 044.$

(1.29, 2.17)

μ 80% 信赖区间为

$\bar{x}\pm t_{\frac{\alpha}{2}}(n-1)\frac{S}{\sqrt{n}}=1.73\pm t_{0.1}(14)\frac{0.8}{\sqrt{15}}$

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

$=1.73\pm 0.78$

(1.45, 2.01).