1 (1) $t_{0.025}(11)=2.228$

(2) $t_{0.95}(8)=-1.86$

(3) $\chi^2_{0.05}(12)=21.026$

(4) $\chi^2_{\alpha}(15)=7.26$

$\Rightarrow \alpha=0.95$

(5) $\chi^2_{0.95}(10)=3.940$

(6) $F_{0.05}(5,8)=3.69$

(7) $F_{0.95}(6,7)=\frac{1}{F_{0.05}(7,6)}=\frac{1}{4.21}=0.238$

(8) $F_{\alpha}(6,6)=4.28$

$\alpha=0.05$

21. (1) $\hat{p}=\frac{105}{250}=0.42$

$0.42 \pm Z_{0.05}\sqrt{\frac{0.42\times0.58}{250}}$

$=0.42\pm1.645\times0.03$

$=0.42\pm0.05 \Rightarrow (0.37, 0.47)$

(2-a)

$\hat{p}=0.3 \quad e=0.03 \quad 1-\alpha=0.95$

$e=\frac{a}{\sqrt{n}}\times Z$

$n=(\frac{a}{e})^2\times Z^2$

$n=(\frac{1.96}{0.3})^2\times0.3\times0.7=896.37\doteqdot897$

1. (1) $\hat{p}=\frac{45}{80}=0.56$

(2) $Z_{\frac{\alpha}{2}}\sqrt{\frac{\hat{p}(1-\hat{p})}{n}}=Z_{0.025}\sqrt{\frac{0.50\times0.40}{80}}$

$=1.96\times0.06=0.12$

(3) $\hat{p}\pm Z_{\frac{\alpha}{2}}\sqrt{\frac{\hat{p}(1-\hat{p})}{n}}$

$=0.56\pm1.645\times0.06$

$\Rightarrow(0.46, 0.66)$

8. $\hat{p}_1=0.55 \quad \hat{p}_2=0.6$

$(\hat{p}_1-\hat{p}_2)\pm Z_{\frac{\alpha}{2}}\sqrt{\frac{\hat{p}_1(1-\hat{p}_1)}{n_1}+\frac{\hat{p}_2(1+\hat{p}_2)}{n_2}}$

$\Rightarrow(0.55-0.6)\ Z_{0.025}\sqrt{\frac{\hat{p}_1(1-\hat{p}_1)}{n_1}+\frac{\hat{p}_2(1+\hat{p}_2)}{n_2}}$

$\Rightarrow -0.05\pm1.96\times0.07$

$=-0.05\pm0.14 \Rightarrow(-0.19, 0.29)$

(2-b)

$\hat{p}=0.42$. $n=(\frac{1.96}{0.03})^2\times0.42\times0.58=1039.79$

$\doteqdot1040$

(2-c)

$\hat{p}=0.5$

$n=(\frac{1.96}{0.03})^2\times0.5\times0.5$

$=1067.11\doteqdot1068$

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