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A 107270053  $\frac{\#}{\text{天}}$

1. (1)  $t_{0.025}(10) = 2.228$

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

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

(4)  $\chi^2_{\alpha}(15) = 7.26 \alpha = ? \alpha = 0.95$

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

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

(7)  $F_{0.95}(6, 7) = \frac{1}{F_{0.05}(7, 6)} = \frac{1}{4.26} = 0.238$

(8)  $F_{\alpha}(6, 6) = 4.28, \alpha = 0.05$

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

(2)  $Z_{\frac{\alpha}{2}} = \sqrt{\frac{\hat{p}(1-\hat{p})}{n}} = Z_{0.025} \sqrt{\frac{0.56 \times 0.44}{80}}$

$= 0.56 \pm 1.645 \times 0.06 = 0.56 \pm 0.1$

$= (0.46, 0.66)$

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

$(\hat{p}_1 - \hat{p}_2) \pm Z_{\frac{\alpha}{2}} \sqrt{\frac{\hat{p}_1(1-\hat{p}_1)}{n} + \frac{\hat{p}_2(1-\hat{p}_2)}{n}} = (0.55 - 0.6) \pm Z_{0.025} \sqrt{\frac{0.55 \times 0.45}{100} + \frac{0.6 \times 0.4}{100}}$

$= -0.05 \pm 1.96 \times 0.07$

$= -0.05 \pm 0.14 = (-0.19, 0.09)$

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

$0.42 \pm Z_{0.05} \sqrt{\frac{0.42 \times 0.58}{250}}$

$= 0.42 \pm 0.05 = (0.37, 0.47)$

(2) (a)  $\hat{p} = 0.3 \quad e = 0.03 \quad 1 - \alpha = 0.95$

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

$n = \left(\frac{Z}{e}\right)^2 \hat{p} \times (1 - \hat{p})$

$= \left(\frac{1.96}{0.03}\right)^2 \times 0.3 \times 0.7$

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(b)  $\hat{p} = 0.42 \quad n = \left(\frac{1.96}{0.03}\right)^2 \times 0.42 \times 0.58$

$= 1039.79 \approx 1040$

(c)  $\hat{p} = 0.5 \quad n = \left(\frac{1.96}{0.03}\right)^2 \times 0.5 \times 0.5$

$= 1067.11 \approx 1068$

10. (1)  $M_1 - M_2 = \bar{x} - \bar{y} = 85 - 78 = 7$

(2)  $7 \pm 1.645 \sqrt{\frac{154}{50} + \frac{146}{60}}$

$= 7 \pm 1.645 \times 2.59$

$= 7 \pm 4.26 \quad (2.74, 11.26)$