

$$① ①) t_{0.025}(10) = 2.228$$

$$②) t_{0.95}(8) = -1.86$$

$$1-0.05$$

$$③) \chi^2_{0.05}(12) = 21.026$$

$$④) \chi^2_{\alpha}(15) = 7.26$$

$$\therefore \alpha = 0.95$$

$$⑤) \chi^2_{0.95}(10) = 3.940$$

$$⑥) F_{0.05}(5, 8) = 3.69$$

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

$$= \frac{1}{4.21}$$

$$= 0.238$$

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

$$②) \hat{P} = 0.55 \quad \hat{P}_2 = 0.6$$

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

$$= (0.55 - 0.6) \pm Z_{0.025} \sqrt{\frac{0.55 \times 0.45}{100} + \frac{0.6 \times 0.4}{100}}$$

$$= -0.05 \pm 1.96 \times 0.07$$

$$= -0.05 \pm 0.14$$

$$\therefore (-0.19, 0.09)$$

$$③) ①) \hat{P} = \frac{1.05}{2.5} = 0.42$$

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

$$= 0.42 \pm 1.645 \times 0.03$$

$$= 0.42 \pm 0.05$$

$$\Rightarrow (0.37, 0.47)$$

$$①) ①) \hat{P} = \frac{45}{80} = 0.56$$

$$②) Z_{\alpha/2} \sqrt{\frac{\hat{P}(1-\hat{P})}{n}}$$

$$= Z_{0.025} \sqrt{\frac{0.56 \times 0.44}{80}}$$

$$= 1.96 \times 0.06$$

$$= 0.12$$

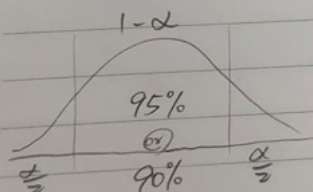
$$③) \hat{P} \pm Z_{\alpha/2} \sqrt{\frac{\hat{P}(1-\hat{P})}{n}}$$

$$= 0.56 \pm Z_{0.05} \sqrt{\frac{0.56 \times 0.44}{80}}$$

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

$$= 0.56 \pm 0.1$$

$$\Rightarrow (0.46, 0.66)$$



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

$$③) e = \frac{Z}{\sqrt{n}} \times Z$$

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

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

$$n = \left(\frac{1.96}{0.03}\right)^2 \times 0.3 \times 0.7 = 896.37$$

$$\approx 897$$

$$④) \hat{P} = 0.42$$

$$n = \left(\frac{1.96}{0.03}\right)^2 \times 0.42 \times 0.58 = 1039.79$$

$$\approx 1040$$

$$⑤) \hat{P} = 0.5$$

$$n = \left(\frac{1.96}{0.03}\right)^2 \times 0.5 \times 0.5 = 1067.11$$

$$\approx 1068$$