

Subject:

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1. A66230034 曾... 吳佳三

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

$$(2) t_{0.95}(8) = t_{0.05}(8) = 1.86$$

$$(3) \chi^2_{0.05}(12) = 21.028$$

$$(4) \chi^2_{0.2}(5) = 7.26 \quad \alpha = 0.2$$

$$(5) \chi^2_{0.95}(10) = 3.94$$

$$(6) F_{0.05}(5, 8) = 3.67$$

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

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

$$\alpha = 0.05$$

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

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

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

$$= -0.05 \pm 1.96 \times 0.07 = -0.05 \pm 0.14$$

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

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

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

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

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

$$e = \frac{b}{\sqrt{n}} \times z$$

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

$$n = \left(\frac{1.96}{0.03}\right)^2 \times (0.42)(0.58) = 8.97$$

$$(b) \hat{p} = \frac{105}{250} = 0.42$$

$$n = \left(\frac{1.96}{0.03}\right)^2 \times 0.42 \times 0.58 = 1039.79 \approx 1040$$

$$(c) \hat{p} = 0.5$$

$$n = \left(\frac{1.96}{0.03}\right)^2 \times 0.5 \times 0.5 = 1067.11 \approx 1068$$

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

$$(2) z_{\frac{\alpha}{2}} \sqrt{\frac{\hat{p}(1-\hat{p})}{n}}$$

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

$$= 1.96 \times 0.06 = 0.12$$

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

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

$$= 0.56 \pm 0.1$$

$$AP(0.46, 0.66)$$

e 是誤差界限

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$$2. e = \frac{6}{\sqrt{n}} \times z_{\frac{\alpha}{2}}$$

$$(1) 6=3, e=0.5, 1-\alpha=0.95$$

$$n = \left(\frac{3}{0.05} \right)^2 \times 1.96^2 = 138.3 \approx 139$$

$$(2) 6=0.2, e=0.03, 1-\alpha=0.9$$

$$n = \left(\frac{0.2}{0.03} \right)^2 \times 1.645^2 = 120.27 \approx 121$$

$$(3) 6=0.05, e=0.02, 1-\alpha=0.95$$

$$n = \left(\frac{0.05}{0.02} \right)^2 \times 2.326^2 = 33.8 \approx 34$$

(0.

$$(1) \mu_1 - \mu_2 = \bar{x} - \bar{y} = 85 - 78 = 7$$

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

$$= 7 \pm 1.645 \times 2.59 = 7 \pm 4.26 \text{ at } (2.74, 11.26)$$