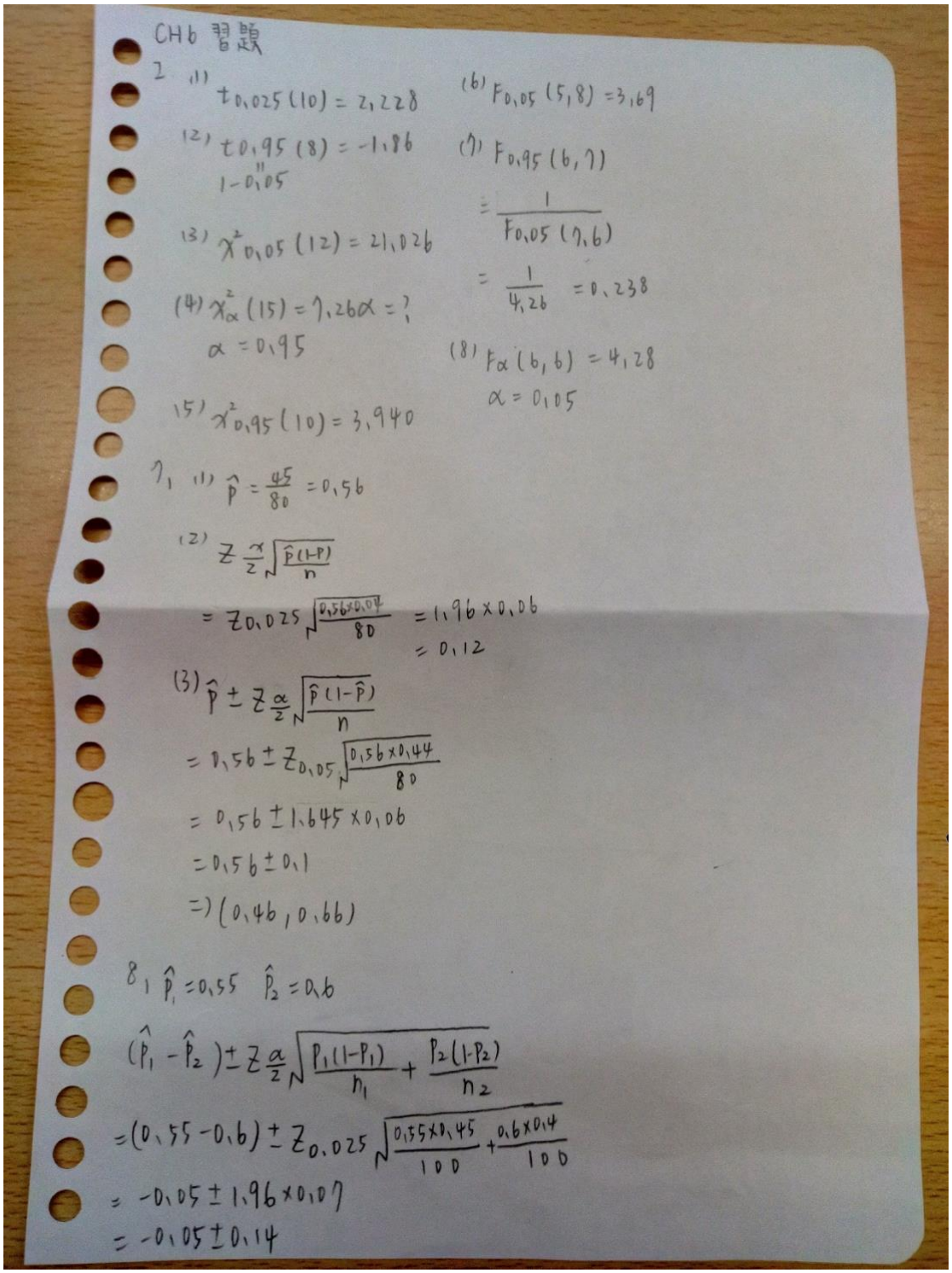
英語二甲 A107320075 羅佳琪



CH6 習題

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

$\alpha = 0.95$

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

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

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

$= z_{0.025}\sqrt{\frac{0.56\times0.07}{80}} = 1.96\times0.06$

$= 0.12$

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

$= 0.56 \pm z_{0.05}\sqrt{\frac{0.56\times0.44}{80}}$

$= 0.56 \pm 1.645\times0.06$

$= 0.56 \pm 0.1$

$= (0.46, 0.66)$

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

$(\hat{p}_1 - \hat{p}_2) \pm z\frac{\alpha}{2}\sqrt{\frac{p_1(1-p_1)}{n_1} + \frac{p_2(1-p_2)}{n_2}}$

$= (0.55-0.6) \pm z_{0.025}\sqrt{\frac{0.55\times0.45}{100} + \frac{0.6\times0.4}{100}}$

$= -0.05 \pm 1.96\times0.07$

$= -0.05 \pm 0.14$

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) $\hat{p} = 0,3 \quad e = 0,03 \quad 1-\alpha = 0,95$

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

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

$n = (\frac{1,96}{0,3})^2 \times 0,3 \times 0,7 = 896,37 \fallingdotseq 897$

(b) $\hat{p} = 0,42$

$n = (\frac{1,96}{0,03})^2 \times 0,42 \times 0,58 = 1039,19 \fallingdotseq 1040$

(c) $\hat{p} = 0,5$

$n = (\frac{1,96}{0,03})^2 \times 0,5 \times 0,5 = 1067,11 \fallingdotseq 1068$

2, $e = \frac{\sigma}{\sqrt{n}} \times z_{\frac{\alpha}{2}}$

(1) $\sigma = 3, \quad e = 0,5, \quad 1-\alpha = 0,95$

$n = (\frac{3}{0,5})^2 \times 1,96^2$

$= 138,3 \fallingdotseq 139$

(2) $\sigma = 0,2, \quad e = 0,03, \quad 1-\alpha = 0,9$

$n = (\frac{0,2}{0,03}) \times 1,645^2$

$= 120,27 \fallingdotseq 121$

(3) $\sigma = 0,05, \quad e = 0,02, \quad 1-\alpha = 0,98$

$n = (\frac{0,05}{0,02})^2 \times 2,326^2 = 33,8 \fallingdotseq 34$