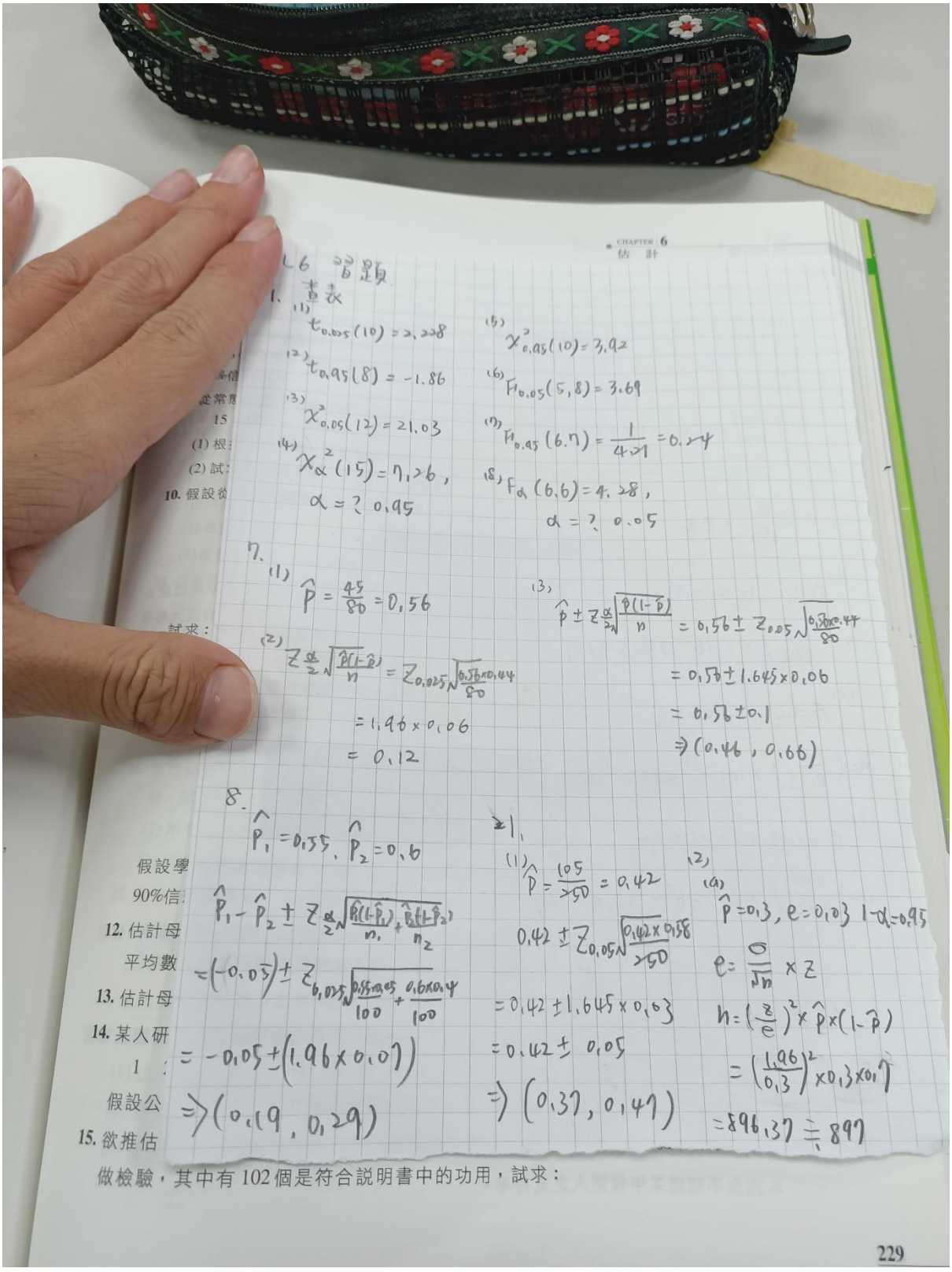

CHAPTER 6 估計

6 22題

1. 查表

(1) $t_{0.005}(10) = 2.228$

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

(3) $\chi^2_{0.05}(12) = 21.03$

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

(5) $\chi^2_{0.95}(10) = 3.92$

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

(7) $F_{0.95}(6,7) = \frac{1}{4.21} = 0.24$

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

7.

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

(2) $Z_{\frac{\alpha}{2}}\sqrt{\frac{\hat{p}(1-\hat{p})}{n}} = Z_{0.025}\sqrt{\frac{0.56\times0.44}{80}}$

$= 1.96 \times 0.06$

$= 0.12$

(3) $\hat{p} \pm Z_{\frac{\alpha}{2}}\sqrt{\frac{\hat{p}(1-\hat{p})}{n}} = 0.56 \pm Z_{0.05}\sqrt{\frac{0.56\times0.44}{80}}$

$= 0.56 \pm 1.645 \times 0.06$

$= 0.56 \pm 0.1$

$\Rightarrow (0.46, 0.66)$

8.

$\hat{P}_1 = 0.55$, $\hat{P}_2 = 0.6$

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

$= (-0.05) \pm Z_{0.025}\sqrt{\frac{0.55\times0.45}{100} + \frac{0.6\times0.4}{100}}$

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

$\Rightarrow (0.19, 0.29)$

11.

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

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

$= 0.42 \pm 1.645 \times 0.03$

$= 0.42 \pm 0.05$

$\Rightarrow (0.37, 0.47)$

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

$e = \frac{0}{\sqrt{n}} \times Z$

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

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

$= 896.37 \doteq 897$

假設學

90%信

12. 估計母

平均數

13. 估計母

14. 某人研

1

假設公

15. 欲推估

做檢驗，其中有 102 個是符合說明書中的功用，試求：

b. $\hat{p}=0.42$

$$n=\left(\frac{1.96}{0.3}\right)^2 0.42\times0.58=1039.79\fallingdotseq1040$$

c. $\hat{p}=0.5$

$$n=\left(\frac{1.96}{0.3}\right)^2\times0.5\times0.5=1067.11\fallingdotseq1068$$