

習題 6.

解: $n=120$, $\bar{x}=1.250$, $S=140$, $1-\alpha=0.95$, $\frac{\alpha}{2}=0.025$.

$$Z_{\frac{\alpha}{2}} = Z_{0.025} = 1.96.$$

μ 的 95% 信賴區間為 $\bar{x} \pm Z_{\frac{\alpha}{2}} \frac{s}{\sqrt{n}} = 1.250 \pm Z_{0.025} \frac{140}{\sqrt{120}}$

$$= 1.250 \pm 25.05.$$

即 $(1.22495, 1.27505)$.

習題 10.

(1) $\mu_1 - \mu_2$ 之點估計值 $\bar{x} - \bar{y} = 85 - 78 = 7$.

(2) $1-\alpha=0.90$, $\frac{\alpha}{2}=0.05$, $Z_{0.05}=1.645$.

$\therefore \mu_1 - \mu_2$ 之 90% 的信賴區間

$$(\bar{x} - \bar{y}) \pm Z_{\frac{\alpha}{2}} \sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}} = (85 - 78) \pm 1.645 \sqrt{\frac{154}{50} + \frac{146}{40}}$$

$$= 7 \pm 1.645 \times 2.59$$

$$= 7 \pm 4.26$$

即 $(2.74, 11.26)$