Ch6 習題

7.

(1) $\sigma = 3$, $1-\alpha = 0.95$, $\alpha = 0.05$, $\frac{\alpha}{2} = 0.025$, $z_{0.025} = 1.96$, $e = 0.05$

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

(2) $\sigma = 2$, $1-\alpha = 0.9$, $\alpha = 0.1$, $\frac{\alpha}{2} = 0.5$, $z_{0.5} = 1.645$, $e = 0.03$

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

(3) $\sigma = 0.05$, $1-\alpha = 0.98$, $\alpha = 0.02$, $\frac{\alpha}{2} = 0.01$, $z_{0.01} = 2.327$, $e = 0.02$

$n = \left(\frac{2.327 \times 0.05}{0.02}\right)^2 = 33.8 \fallingdotseq 34$

6. $n = 120$, $\bar{x} = 1250$, $s = 140$, $1-\alpha = 0.95$, $\frac{\alpha}{2} = 0.025$, $z_{0.025} = 1.96$

$1250 \pm z_{0.025}\frac{140}{\sqrt{120}} = 1250 \pm 25.05$

即 $(1224.95, 1275.05)$

10.

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

(2) $1-\alpha = 0.9$, $\frac{\alpha}{2} = 0.05$, $z_{0.05} = 1.645$

$(85-78) \pm 1.645\sqrt{\frac{154}{50} + \frac{146}{40}}$

$= 7 \pm 1.645 \times 2.59$

$= 7 \pm 4.26$

即 $(2.74, 11.26)$