week4 (實習課功課)

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

(1) $\sigma = 3$

$e = 0.5$

$1-\alpha = 0.95$

$n = (\frac{3}{0.5})^2 \times 1.96^2$

$= 138.3 \doteq 139$ #

(2) $\sigma = 0.2$

$e = 0.03$

$1-\alpha = 0.9$

$n = (\frac{0.2}{0.03})^2 \times 1.645^2$

$= 120.27$

$\doteq 121$ #

(3) $\sigma = 0.05$

$e = 0.02$

$1-\alpha = 0.98$

$n = (\frac{0.05}{0.02})^2 \times 2.326^2$

$= 33.8 \doteq 34$ #

⑥ $\mu = 1250$

$\sigma = 140$

$1-\alpha = 0.95$

$1250 \pm Z_{0.025}\sqrt{\frac{140^2}{120}}$

$\Rightarrow (1250 - 25.05, 1250 + 25.05)$

$= (1224.95, 1275.05)$

⑩

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

(2) $1-\alpha = 0.9$

$7 \pm 1.645\sqrt{\frac{154}{50} + \frac{146}{40}}$

$\Rightarrow (7 - 4.26, 7 + 4.26)$

$= (2.74, 11.26)$ #