

6.7

(1) $1-\alpha=0.95, \frac{\alpha}{2}=0.025, z_{\frac{\alpha}{2}}=z_{0.025}=1.96, \therefore \mu$ 之 95% 信賴區間為

$$\bar{x} \pm z_{\frac{\alpha}{2}} \frac{s}{\sqrt{n}} = 16.33 \pm 1.96 \frac{4.29}{\sqrt{36}} = 16.33 \pm 1.4, \text{ 即 } (14.93, 17.73) \quad \#$$

(2)

$1-\alpha=0.90, \frac{\alpha}{2}=0.05, z_{\frac{\alpha}{2}}=z_{0.05}=1.645, \therefore \mu$ 之 90% 信賴區間為

$$\bar{x} \pm z_{\frac{\alpha}{2}} \frac{s}{\sqrt{n}} = 16.33 \pm 1.645 \frac{4.29}{\sqrt{36}} = 16.33 \pm 1.18, \text{ 即 } (15.15, 17.51) \quad \#$$

6.19

$$n = \left(\frac{z_{\frac{\alpha}{2}} s}{e} \right)^2 = \left(\frac{1.96 \times 0.05}{0.01} \right)^2 = 96.04$$

取 $n=97$, 樣本數應再抽 $97-35=62$ 個, 才能確保 μ 的估計誤差界限不超過 0.01 kg 的機率為 0.95 $\#$