

6.7

☆ 大樣本, σ 未知 $\rightarrow (\bar{x} - z_{\frac{\alpha}{2}} \frac{s}{\sqrt{n}}, \bar{x} + z_{\frac{\alpha}{2}} \frac{s}{\sqrt{n}})$

樣本平均數 = 16.33 樣本標準差 = 4.29

① 95% 信賴區間

$$1 - \alpha = 0.95 \quad \frac{\alpha}{2} = 0.025$$

$$\bar{x} \pm z_{\frac{\alpha}{2}} \frac{s}{\sqrt{n}} = 16.33 \pm z_{0.025} \frac{4.29}{\sqrt{36}}$$

$$= 16.33 \pm 1.96 \frac{4.29}{6}$$

$$= 16.33 \pm 1.4014$$

$$\rightarrow (14.9286, 17.7314)$$

② 90% 信賴區間

$$1 - \alpha = 0.9 \quad \frac{\alpha}{2} = 0.05$$

$$\bar{x} \pm z_{\frac{\alpha}{2}} \frac{s}{\sqrt{n}} = 16.33 \pm 1.645 \frac{4.29}{\sqrt{36}}$$

$$= 16.33 \pm 1.176175$$

$$\rightarrow (15.153825, 17.506175)$$