

例 6.7

95% 及 90% 信賴區間

$$n=36$$

$$\bar{x} \pm z_{\frac{\alpha}{2}} \frac{s}{\sqrt{n}}$$

$$\bar{x} = 16.33 \quad s = 4.29$$

$$1-\alpha = 0.95 \quad \frac{\alpha}{2} = 0.025 \quad z_{\frac{\alpha}{2}} = 1.96$$

$$\mu \quad 95\% = 16.33 \pm 1.96 \frac{4.29}{6} = 16.33 \pm 1.4$$

$$= (14.93, 17.73)$$

90%

$$1-\alpha = 0.9 \quad \frac{\alpha}{2} = 0.05 \quad z_{\frac{\alpha}{2}} = z_{0.05} = 1.645$$

$$\mu \quad 16.33 \pm 1.645 \frac{4.29}{6} = 16.33 \pm 1.18$$

$$= (15.15, 17.51)$$

例 6.19

$$n = \left(\frac{z_{\frac{\alpha}{2}} s}{e} \right)^2$$

$$1-\alpha = 0.95 \quad z_{\frac{\alpha}{2}} = z_{0.025} = 1.96 \quad e = 0.01$$

$$s = 0.05$$

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

$$96.04 \rightarrow n = 97$$

$$97 - 35 = 62 \quad \#$$