

例 6.7

$$1. \quad 1 - \alpha = 0.95$$

$$\frac{\alpha}{2} = 0.025$$

$$Z_{\frac{\alpha}{2}} = Z_{0.025} = 1.96$$

$$\Rightarrow \mu, 95\% = \bar{x} \pm Z_{\frac{\alpha}{2}} \frac{s}{\sqrt{n}} \\ = 16.33 \pm 1.96 \frac{4.29}{\sqrt{36}} = 16.33 \pm 1.4$$

得 (14.93, 17.73)

$$2. \quad 1 - \alpha = 0.9$$

$$\frac{\alpha}{2} = 0.05$$

$$Z_{\frac{\alpha}{2}} = Z_{0.05} = 1.645$$

$$\Rightarrow \mu, 90\% = \bar{x} \pm Z_{\frac{\alpha}{2}} \frac{s}{\sqrt{n}} \\ = 16.33 \pm 1.645 \frac{4.29}{\sqrt{36}} = 16.33 \pm 1.18$$

得 (15.15, 17.51)

例 6.19

$$1 - \alpha = 0.95$$

$$Z_{\frac{\alpha}{2}} = Z_{0.025} = 1.96$$

$$e = 0.01, \quad S = 0.05$$

$$n = \left(\frac{Z_{\frac{\alpha}{2}} S}{e} \right)^2 = \left(\frac{1.96 \cdot 0.05}{0.01} \right)^2 = 96.04$$

$$\text{取 } n = 97 \Rightarrow 97.35 = 62$$

得 不超过 0.01 之机率为 0.95