

6.7

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

(1)

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

$$\bar{x} \pm z_{\frac{\alpha}{2}} \frac{s}{\sqrt{n}} = 16.33 \pm 1.96 \frac{4.29}{\sqrt{36}} = 16.33 \pm 1.40 \Rightarrow (14.93, 17.73) \#$$

(2)

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

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

6.8

$$n = 12, \bar{x} = 15,291.67, s = \sqrt{\sum (x_i - \bar{x})^2 / (n-1)} = 197.52$$

(1)

$$\mu \text{ 的估計值 } \bar{x} = 15,291.67 \#$$

(2)

$$1 - \alpha = 0.9, \frac{\alpha}{2} = 0.05, v = n - 1 = 12 - 1 = 11, t_{0.05}(11) = 1.796$$

$$\bar{x} \pm t_{\frac{\alpha}{2}}(n-1) \frac{s}{\sqrt{n}} = 15,291.67 \pm 1.796 \frac{197.52}{\sqrt{12}} = 15,291.67 \pm 102.41$$

(3)

$$15,394.08 - 15,189.26 = 204.82 \#$$

$$(15,189.26, 15,394.08) \#$$

6.19

$$1 - \alpha = 0.95, z_{\frac{\alpha}{2}} = z_{0.025} = 1.96, e = 0.01, s = 0.05$$

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

$$\text{取 } n = 97, 97 - 35 = 62 \#$$