例 6.7.

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(1) $1-\alpha = 0.95$, $\frac{\alpha}{2} = 0.025$.

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

$\bar{x} \pm Z\frac{\alpha}{2} \frac{s}{\sqrt{n}} = 16.33 \pm 1.96 \frac{4.29}{\sqrt{36}} = 16.33 \pm 1.4$

$\rightarrow (14.93, 17.73)$

(2) $1-\alpha = 0.9$, $\frac{\alpha}{2} = 0.05$

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

$\bar{x} \pm Z\frac{\alpha}{2} \frac{s}{\sqrt{n}} = 16.33 \pm 1.645 \frac{4.29}{\sqrt{36}} = 16.33 \pm 1.18$

$\rightarrow (15.15 ; 17.51)$

例 6.9

(1) μ 的估計為 $\bar{x} = 15291.67$

(2) $1-\alpha = 0.9$, $\frac{\alpha}{2} = 0.05$

自由度 = $n-1 = 12-1 = 11$, $t_{0.05}(11) = 1.796$

$\bar{x} \pm t\frac{\alpha}{2}(n-1) \frac{s}{\sqrt{n}} = 15291.67 \pm 1.796 \frac{197.52}{\sqrt{12}} = 15291.67 \pm 102.41$

(3) $15394.08 - 15189.26 = 204.82$

例 6.19

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

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

$n = 97$, $97 - 35 = 62$.

$= (15189.26, 15394.08)$