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6.7.

(1) $1-\alpha=0.95$.

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

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

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

$=16.33\pm 1.96\frac{4.29}{\sqrt{36}}$

$=16.33\pm 1.40$ $\therefore (14.93, 17.73)$.

平均時間介於 $(14.93, 17.73)$ 之間

(2) $1-\alpha=0.9$ $\frac{\alpha}{2}=0.05$ $Z_{0.05}=1.645$.

$\therefore \bar{x}\pm Z_{\frac{\alpha}{2}}\frac{s}{\sqrt{n}}$.

$=16.33\pm 1.645\frac{4.29}{\sqrt{36}}$

$=16.33\pm 1.18$

6.9.

$n=12$. $\bar{x}=15291.67$. $s=\sqrt{\frac{\sum(x_i-\bar{x})^2}{(n-1)}}=197.52$

(1) μ 的點估計是 $\bar{x}=15291.67$.

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

$n-1=11$

$t_{0.05}(11)=1.796$.

$\therefore \bar{x}\pm t_{\frac{\alpha}{2}}(n-1)\frac{s}{\sqrt{n}}$.

$=15291.67\pm 1.796\frac{197.52}{\sqrt{12}}$

$=15291.67\pm 102.41$.

$\therefore (15189.26, 15394.08)$.

此時，e為 $\bar{x}$ 估計 μ 的 $100(1-\alpha)\%$ 誤差界

係數

6.18.

$1-\alpha=0.95$ $Z_{\frac{\alpha}{2}}=Z_{0.025}=1.96$. $e=10$

$n=\left(\frac{Z_{\frac{\alpha}{2}}\sigma}{e}\right)^2=\left(\frac{1.96\times 30}{10}\right)^2=188.24$

≈ 189.