Date 06. 例 6.7

(1) 信賴區間 95% 大樣本→常態，σ 已知

$1-\alpha=0.95$ $\frac{\alpha}{2}=0.025$ $z_{0.025}=1.96$ $\bar{x}=16.33$ $\sigma=4.29$ $n=36$

$(16.33-1.96\frac{4.29}{\sqrt{36}},\ 16.33+1.96\frac{4.29}{\sqrt{36}})$

$=(14.9286,\ 17.7314)=(14.93,\ 17.73)$ #

(2) 信賴區間 90% 大樣本→常態，σ 已知

$1-\alpha=0.9$ $\frac{\alpha}{2}=0.05$ $z_{0.05}=1.645$ $\bar{x}=16.33$ $\sigma=4.29$ $n=36$

$(16.33-1.645\frac{4.29}{\sqrt{36}},\ 16.33+1.645\frac{4.29}{\sqrt{36}})$

$=(15.153825,\ 17.506175)$

$=(15.15,\ 17.51)$ #

例 6.8

$e=0.01$ 樣本標準差 S 已知，σ 未知

$1-\alpha=0.95$ $\frac{\alpha}{2}=0.025$ $z_{0.025}=1.96$ $S=0.05$

$n=(\frac{1.96\times0.05}{0.01})^2=96.04\approx97$ $97-55=62$ #

例 6.9

(1) $\bar{x}=(15000+15100+15000+15200+15500+15400+15600+15500+15300+15200+15300+15400)\div12=15291.67$

$s=\sqrt{\frac{(15000-15291.67)^2+(15100-15291.67)^2+\cdots}{12-1}}=197.32$

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

$(15291.67-1.796\frac{197.32}{\sqrt{12}},\ 15291.67+1.796\frac{197.32}{\sqrt{12}})$

$=(15189.26,\ 15394.08)$ #

(3) $15394.08-15189.26=204.82$ #

條件