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[1]

(a) $Z = \dfrac{\bar{X} - \mu}{\sigma/\sqrt{n}} = \dfrac{73-70}{8/5} = 1.875$

  $p\text{-value} \doteqdot 0.0607 < 0.05 \Rightarrow$ 不推翻

(b) $Z = \dfrac{\bar{X} - \mu}{s/\sqrt{n}} = \dfrac{3}{9/5} \doteqdot 1.667$

  $p\text{-value} \doteqdot 0.108 > 0.05 \Rightarrow$ 不推翻

[2]

(a) $E(\frac{x}{n}) = \frac{1}{n} E(x) = \frac{1}{n} \cdot n \cdot p = p$ #

(b) $Var(\hat{p}) = \dfrac{pq}{n} \Rightarrow \sqrt{\dfrac{pq}{10}}$ #

(c) $(50.4\%, 69.6\%)$ (d) $(51.9\%, 68.1\%)$

[3]

(a) 77.9%

(b) 11%

(c) $\sigma \doteqdot 0.049$

  $0.6 + 0.049 \times 1.6 \doteqdot 70$ 人 #

(d) 拒絕