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(1) $M=70, \sigma=8, n=25, \bar{x}=73, \alpha=0.05$

(a) $H_0: M \geq 73$

$$Z = \frac{\bar{x} - \mu}{\sigma/\sqrt{n}} = \frac{73 - 70}{8/5} = \frac{3}{8/5} = \frac{15}{8} = 1.875, P(\bar{x} \geq 73 | M=70) = 0.93096 < 0.05$$

無法捨棄 H_0

(b) $M=70, n=25, \sigma=9, \bar{x}=73, \alpha=0.05$

$$Z = \frac{73 - 70}{9/5} = \frac{3}{9/5} = \frac{15}{9} = 1.666$$

無法捨棄 H_0

2.

(a) $E(\hat{p}) = E\left(\frac{\bar{x}}{n}\right) = \frac{1}{n}E(x) = \frac{1}{n}n \cdot p = p_{\text{单}}$

(b) 1

(c) $p=0.6, q=0.4, [0.504, 0.696]$

(d) $[0.519, 0.681]$

3.

(d) 拒絕捨棄 H_0