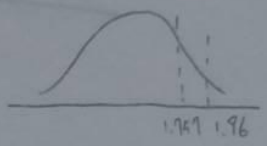
(6) $\bar{x} = 4.65$, $S = 1.26$

(1) $n = 40$ $\alpha = 0.05$

$H_0: u = 4.3$, $H_1: u \neq 4.3$

$z_{0.025} = 1.96$

$$\frac{4.65 - 4.3}{\frac{1.26}{\sqrt{40}}} = 1.757$$



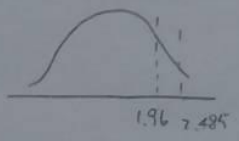
不拒絕 H_0

(2) $n = 80$, $\alpha = 0.05$

$H_0: u = 4.3$, $H_1: u \neq 4.3$

$z_{0.025} = 1.96$

$$\frac{4.65 - 4.3}{\frac{1.26}{\sqrt{80}}} = 2.484$$

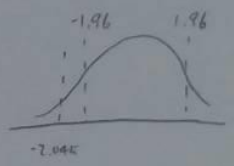


拒絕 H_0

(7) $H_0: u_1 = u_2$, $H_1: u_1 \neq u_2$

$z_{0.025} = 1.96$

$$\frac{(\bar{x} - \bar{y}) - 0}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}} = \frac{38.3 - 40.1}{\sqrt{\frac{40}{100} + \frac{30}{80}}} = -2.045$$

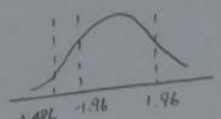


拒絕 H_0

(8) $H_0: u_1 = u_2$, $H_1: u_1 \neq u_2$

$$\frac{(\bar{x} - \bar{y}) - 0}{S_p \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}} = \frac{32 - 34}{3.430\sqrt{\frac{1}{64} + \frac{1}{81}}} = -3.486$$

$$S_p = \sqrt{\frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}} = \sqrt{\frac{63 \times 3.2^2 + 80 \times 3.6^2}{143}} = 3.430$$



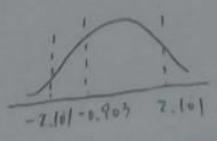
拒絕 H_0

(9) $t_{0.025}(18) = 2.101$

$H_0: u_1 = u_2$, $H_1: u_1 \neq u_2$

$$\frac{(\bar{x} - \bar{y}) - 0}{S_p \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}} = \frac{82.6 - 84.9}{4.693\sqrt{\frac{1}{10} + \frac{1}{10}}} = -0.903$$

$$S_p = \sqrt{\frac{9 \times (4.926)^2 + 9 \times (4.460)^2}{18}} = 4.693$$

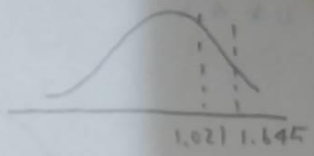


不拒絕 H_0

(10)

$z_{0.05} = 1.645$, $H_0: P \leq 0.4$, $H_1: P > 0.4$

$$z = \frac{\hat{P} - P_0}{\sqrt{\frac{P_0(1-P_0)}{n}}} = \frac{0.45 - 0.4}{\sqrt{\frac{0.4 \times 0.6}{100}}} = 1.021$$



接受 H_0 #