week 12

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

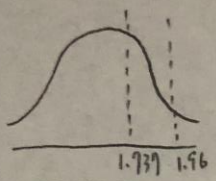
(1) $n = 40$, $\alpha = 0.05$

$H_0 : M = 4.3$

$H_1 : M \neq 4.3$

$z_{0.025} = 1.96$

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



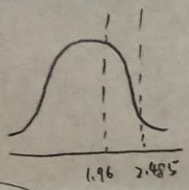
不拒絕

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

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

$z_{0.025} = 1.96$

$\frac{4.65-4.3}{\frac{1.26}{\sqrt{80}}} = 2.485$

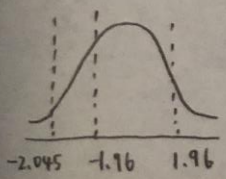


拒絕 H_0

7. $H_0 : M_1 = M_2$, $H_1 : M_1 \neq M_2$

$z_{0.025} = 1.96$

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

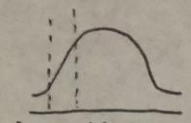


拒絕 H_0

8. $H_0 : M_1 = M_2$, $H_1 : M_1 \neq M_2$

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

$S_p = \sqrt{\frac{(n_1-1)S_1^2+(n_2-1)S_2^2}{n_1+n_2}} = \sqrt{\frac{63\times3.2^2+80\times3.6^2}{143}} = 3.430$



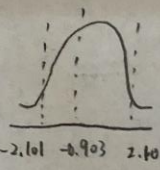
拒絕 H_0

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

$H_0 : M_1 = M_2$, $H_1 : M_1 \neq M_2$

$\frac{(\bar{x}-\bar{y})-0}{S_p\sqrt{\frac{1}{n_1}+\frac{1}{n_2}}} = \frac{82.6-84.9}{5.693\sqrt{\frac{1}{10}+\frac{1}{10}}} = -0.903$

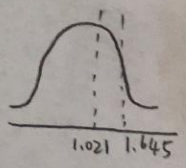
$S_p = \sqrt{\frac{9\times(4.5265)^2+9\times(6.6575)^2}{18}} = 5.693$



不拒絕 H_0

10. $z_{0.05} = 1.645$, $H_0 : P \geq 0.4$, $H_1 : P < 0.4$

$z = \frac{\hat{p}-p_0}{\sqrt{\frac{p_0(1-p_0)}{n}}} = \frac{0.45-0.4}{\sqrt{\frac{0.4\times0.6}{100}}} = 1.021$



拒絕 H_0