1, H_0 $\mu_0 = 0$
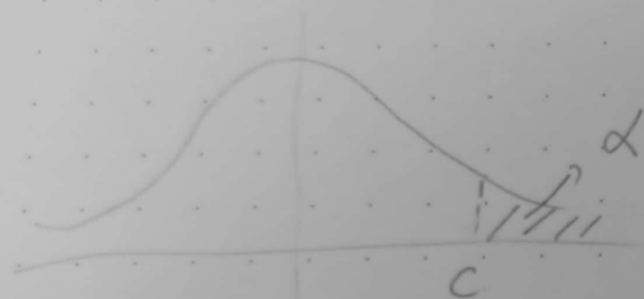
$H_1: \mu_1 > 0$

mẫu 0, 1, -1, 3, -8, 6, 1

$\alpha = 5\%$, $n = 7$, $\bar{x} = \dfrac{0 + 1 - 1 + 3 - 8 + 6 + 1}{7} = \dfrac{2}{7}$

Tiêu chuẩn kiểm định: $T = \dfrac{\bar{x} - \mu_0}{S/\sqrt{n}}$

$S = \dfrac{1}{n-1} \sum\limits_{i=1}^{n} (x_i - \bar{x})^2 = \dfrac{130}{7}$

$\Rightarrow T = \dfrac{\frac{2}{7} - 0}{\sqrt{\frac{130}{7}}/\sqrt{7}} = \dfrac{2}{7\sqrt{130}} \approx 0,175$

$$\Rightarrow T = \frac{\frac{2}{7} - 0}{\sqrt{\frac{130}{7}} / \sqrt{7}} = \frac{2}{7 \sqrt{130}} \approx \cancel{0,025} \ 0,175$$

$F(c) = 1 - \alpha = 95\%$

$\Rightarrow c = 1,94 \ (\text{Bảng } A9, \ \text{bậc tự do } n-1 = 6)$

$W\alpha = [C; +\infty)$

$= [1,94; +\infty)$

$T \notin W\alpha \Rightarrow$ chấp nhận ~~th~~ H_0
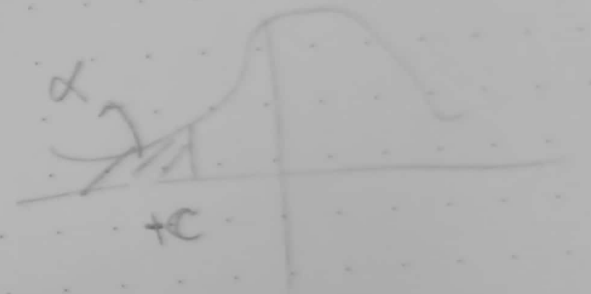
T $\notin$ Wα ... $\Rightarrow$ chấp nhận ...

2, $\sigma^2 = 9 \Rightarrow \sigma = 3$

$\mu_0 = 60.0$

$\mu_1 = 57.0 < \mu_0$

$n = 20$; $\bar{x} = 58.50$, $\alpha = 5\%$

$$T = \frac{\bar{x} - \mu_0}{\sigma/\sqrt{n}} = -\sqrt{5} \approx -2,236$$

$\phi(c) = \alpha \Rightarrow 5\% \Rightarrow c = -1,645$ (A8)

$\rightarrow$ Wα = $(-\infty ; -1,645]$

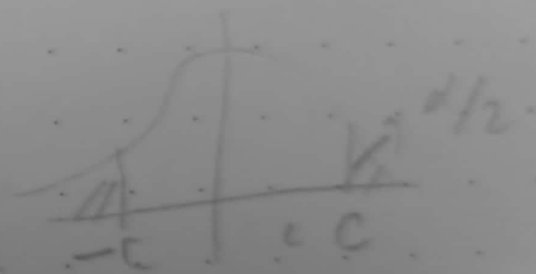$T \in$ W$\alpha \Rightarrow$ bác bỏ μ_0

3, $T \in -1,953 \Rightarrow T \notin W_\alpha \Rightarrow$ chấp nhận H_0

4, Miền bác bỏ $W_\alpha = (-\infty; -c] \cup [c, +\infty)$

$\phi(c) = 1 - \dfrac{\alpha}{2} = 1 - 2,5\% = 0,975$

$\Rightarrow -c = 1,96 \ (A8)$

$\Rightarrow W_\alpha = (-\infty; -1,96] \cup [1,96; +\infty)$

hình

$\rightarrow W_\alpha = (-\infty; -1,96] \cup [1,96; +\infty)$

5, $\boxed{\mu_0} = 5000g$ μ $\quad\quad$ tbình $\quad\quad$ δ^2 : phương sai

$\quad$ $n = 51$, $\bar{x} = 4990g$ $\quad$ $\delta = 20g$

$\quad$ $\alpha = 5\%$ $\quad\quad\quad\quad$ δ $\quad$ = độ lệch chuẩn

kiểm định sai khác $\rightarrow \mu_1 \neq \mu_0$

$T = \dfrac{\bar{x} - \mu_0}{\delta/\sqrt{n}} = -\dfrac{\sqrt{51}}{2} \approx -3,571$

$\phi(c) = 1 - \dfrac{\alpha}{2}$ (tìm bảng 4) $\rightarrow W_\alpha = (-\infty, -1,96] \cup [1,96; +\infty)$

$T \in W_\alpha \rightarrow$ bác bỏ H_0

$T \in W_\alpha \Rightarrow$ bác bỏ H_0

6, $n = 25$, $\alpha = 5\%$

$\bar{x} = 37000$

$\delta = 5000$

$H_0: \mu_0 = 35000 \Rightarrow$ kđ $H_1: \mu_1 > \mu_0$

$$T = \frac{\bar{x} - \mu_0}{\delta/\sqrt{n}} = 2$$

$W_\alpha = [c, +\infty) = [1,645; +\infty)$ $(\approx bài\ 2$

$T \in W_\alpha \Rightarrow$ bác bỏ H_0

7, 0,4 ; -0,6 0,2 0 1 1,4 0,4 1,6

$n = 8$

$\bar{x} = 0,55$

$s^2 = \dfrac{1}{n-1} \sum (x_i - \bar{x})^2 = \dfrac{191}{350}$

$T = \dfrac{\bar{x} - M_0}{s/\sqrt{n}} = \dfrac{0,55 - 0}{\sqrt{\dfrac{191}{350}}/\sqrt{8}} \approx 2,106$

$M_0 = 0 \rightarrow H_1 : M_1 \neq M_0$

$\alpha = 5\%$

$F(c) = 1 - \dfrac{\alpha}{2} = 0,975 \cdot 1$

$\mu_0 = 0 \rightarrow H_1 : \mu_1 \neq \mu_0$

$\alpha = 5\%$

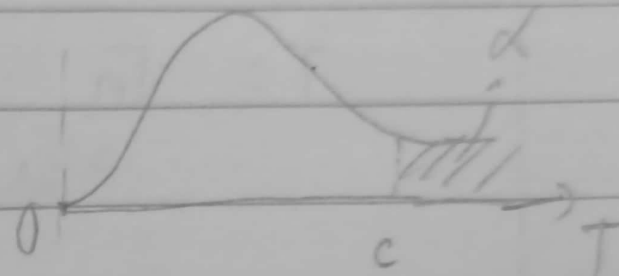$F(c) = 1 - \dfrac{\alpha}{2} = 0,975 \cup I$

$\Rightarrow c = 2,36 \quad (A9, 7)$

$\rightarrow W_\alpha = (-\infty; -2,36] \cup [2,36; +\infty)$

$T \notin W_\alpha \Rightarrow$ chấp nhận H_0

8,

$H_0: \sigma_0 = 0,8$

$A_1: \sigma > \sigma_0$

$n = 20, S = 1, \alpha = 5\%$

$T = (n-1) \dfrac{S^2}{\sigma_0^2} = 29,6875$

$F(c) = 1 - \alpha = 95\% \Rightarrow c = 30,14 \, (A10, 19)$

$\Rightarrow W_\alpha = [30,14; +\infty)$

$T \notin W_\alpha \Rightarrow$ chấp nhận H_0

9, $\sigma_0 = 5 \Rightarrow H_1: \sigma < \sigma_0$

$\alpha = 5\%, \quad n = 28, \quad s = 3.5$

$T = (n-1)\dfrac{s^2}{\sigma^2} = 13.23$

$F_{(c)} = \alpha = 5\% \Rightarrow c = 16.2 \ (\Lambda 10, \ 27)$

$\Rightarrow W\alpha = [0; 16.2]$

$T \in W\alpha \Rightarrow$ bác bỏ H_0

10, $\sigma_0 = 1$ $\qquad$ $H_1: \sigma \neq \sigma_0$

$n = 30$, $\quad S = 1,1$

$\alpha = 1\%$

$T = (n-1) \dfrac{S^2}{\sigma_0^2} = 35,09$

$F(c) = \dfrac{\alpha}{2} \Rightarrow c = 13,1 \ (A10, 29)$

$F(d) = 1 - \dfrac{\alpha}{2} \Rightarrow d = 52,3 \ (A10, 29)$

$\qquad\qquad = 0,995$

$\Rightarrow W\alpha = [0; 13,1] \cup [52,3; +\infty)$

$T \notin W\alpha \Rightarrow$ chấp nhận H_0.

$$17) \quad A \begin{cases} n_1 = 16 \\ \bar{x}_A = 19{,}6 \\ S_A = 0{,}4 \end{cases} \qquad B \begin{cases} n_2 = 16 \\ \bar{x_B} = 20{,}2 \\ S_B = 0{,}6 \end{cases}$$

$$\alpha = 5\%$$

$$H_0 : \mu_A = \mu_B$$

$$H_1 : \mu_A < \mu_B$$

$$T = \sqrt{n} \; \frac{\bar{x}_A - \bar{x}_b}{\sqrt{S_A^2 + S_B^2}} = \frac{-12}{\sqrt{13}} \approx -3{,}328$$

$$F(c) = 1 - \alpha = 0{,}99 \Rightarrow c = 1{,}7 \;(A2, \; 30)$$

$$T = \sqrt{n} \; \frac{\overline{x_A} - \overline{x_B}}{\sqrt{s_A^2 + s_B^2}} = \frac{-12}{\sqrt{13}} \approx -3,328$$

$$F(c) = 1 - \alpha = 0,99 \Rightarrow c = 1,7 \; (A2, \; 30)$$

$$\rightarrow W_\alpha = (-\infty; -1,7]$$

$$T \in W_\alpha \rightarrow \text{bác bỏ } H_0$$

12, I $\}$ n = 8   II $\}$ n = 8

. .   . . $H_0: \mu_x = \mu_y$

$\overline{x} = 2,6325$ $H_1: \mu_x \neq \mu_y$

$\overline{y} = 2,59375$

$S_x^2 = \frac{1}{7} \sum (x_i - \overline{x})^2 \simeq 0,00114$

$S_y^2 \simeq 0,00627$

$$S_x^2 = \frac{1}{7} \sum (x_i - \bar{x})^2 \approx 0,00114$$

$$S_y^2 \approx 0,00627$$

$$\alpha = 5\%$$

$$\begin{cases} T \notin W_\alpha \\ \Rightarrow \text{chấp nhận } H_0 \end{cases}$$

$$T = \sqrt{n} \, \frac{\bar{x} - \bar{y}}{\sqrt{S_x^2 + S_y^2}} \approx 1,273$$

$$W_\alpha = (-\infty, -2,14] \cup [2,14; +\infty) \qquad (A9, \; 0,975, \; 14)$$

13,

$H_0: \mu_x = \mu_y$

$H_1: \mu_x < \mu_y$

$W_\alpha := (-\infty; -1,65) \quad (X_q, 0,95, \infty)$

$$T = \sqrt{n} \; \frac{\bar{x} - \bar{y}}{\sqrt{S_x^2 + S_y^2}} = -4\sqrt{5} \approx -8,944$$

$T \in W_\alpha \to$ bác bỏ H_0