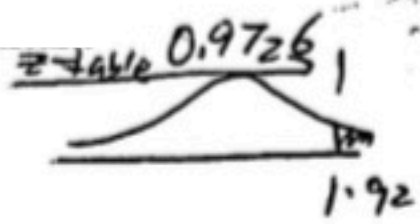


$$1. P\text{-value} = 2 \times P(Z > |z_{cal}|) = 2 \times P(Z > 1.92) \\ = 2 \times [1 - 0.9726] = 0.0548 > \alpha = 0.05$$

fail to reject H_0 (2C)

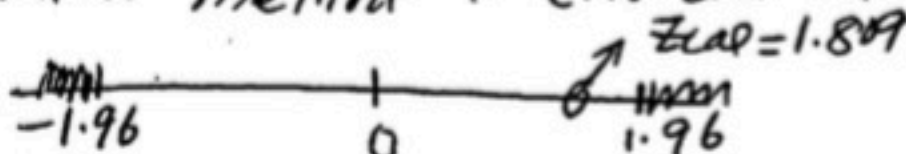


2. "have changed" \rightarrow 2-tailed test

$$H_0: P_1 = P_2 \Rightarrow H_0: P_1 - P_2 = 0 \\ H_1: P_1 \neq P_2 \quad H_1: P_1 - P_2 \neq 0$$

3. Eg 10.16 two-proportions " $P_1 - P_2$ " (3.B)

4. Critical value method: critical value $\pm z_{\frac{\alpha}{2}} = \pm z_{0.025} = \pm 1.96$



test stat < critical value on the right

fail to reject H_0 , there is not enough evidence to conclude that the proportions have changed.

5. Key "Less than"; Lower tail test (4C)

$$H_0: \mu_K - \mu_B \geq 0 \quad (5A) \\ H_1: \mu_K - \mu_B < 0$$

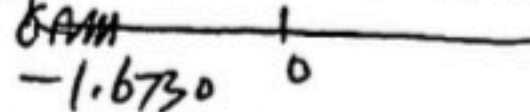
6. $\alpha = 0.05$ P-value Approach

USE DF = 55 (Round it down)

DF	0.05	0.025
55	1.6730	2.0040

$$t_{cal} = 1.897 \quad P\text{-value} = 0.025 < 0.05 < \alpha = 0.05, \text{Reject } H_0$$

Critical value Approach: $CV = t_{\alpha}$ (Lower tail) $= -t_{0.05} = -1.6730$



test stat < CV on the left ~~Fail~~ Reject H_0 (6D)

7. "Reducing" $\mu_1 > \mu_2$ (7A)

$$H_0: \mu_d \leq 0 \quad \therefore \text{Ref. value } \mu_d = 0 \\ H_1: \mu_d > 0$$

$$8. t_{cal} = \frac{\bar{d} - \mu_0}{s/\sqrt{n}} = \frac{1.1667 - 0}{1.169/\sqrt{6}} = 2.445 \quad (8D)$$

9. Use critical value Approach: (9B)

DF = n - 1 = 5 upper tail $t_{\alpha} = t_{0.05} = 2.015$

test stat > CV on the right. Reject H_0