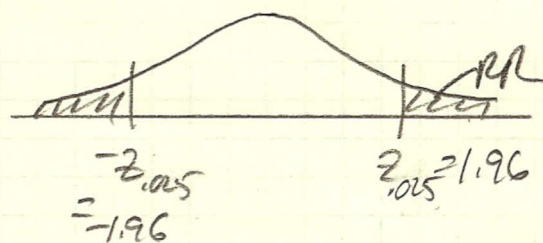


DAY 13 - IN CLASS SAS

1) $n=9$ $H_0: \mu=20$ $z = \frac{\bar{x} - \mu}{\sigma/\sqrt{n}}$
 $\sigma^2=25$ $H_a: \mu \neq 20$ σ/\sqrt{n}
 $\bar{x}=19$ $\alpha=0.05$ $= \frac{19-20}{5/3} = -.6$



SINCE $z = -.6 \notin RR$, FAIL TO REJECT H_0

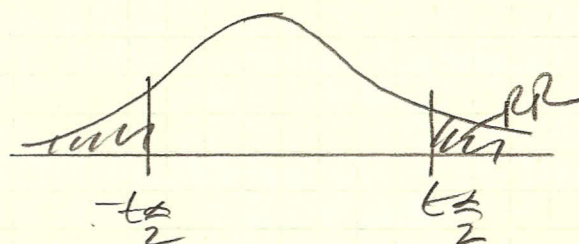
$$p = P(Z < -.6) + P(Z > .6) \\ = 2P(Z > .6) = 2(.2743) \\ = .5486$$

2) YOU TELL ME!

3) ASSUME $\bar{x} \sim N(\mu, \sigma^2/n)$

$H_0: \mu_1 = \mu_2 (\mu_1 - \mu_2 = 0)$

$H_a: \mu_1 \neq \mu_2$



$$t = \frac{(\bar{x}_1 - \bar{x}_2) - (\mu_1 - \mu_2)}{Sp \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

$$= \frac{5}{14.325 \sqrt{\frac{1}{54} + \frac{1}{30}}} = 1.532$$

$$Sp^2 = \frac{(53)(15)^2 + (29)(13)^2}{54+30-2} = 205.195$$

$$Sp = 14.325$$

SO $p = 2P(t > 1.532)$ w/ 82 DOF... USE Z-DIST = $2(.063) = .126$

FAIL TO REJECT H_0 SINCE $p > .05$

4) ASSUME $\bar{x} \sim N(\mu, \sigma^2/n)$

$H_0: \mu_1 = \mu_2 (\mu_1 - \mu_2 = 0)$

$H_a: \mu_1 < \mu_2 (\mu_1 - \mu_2 < 0)$

$\bar{x}_1 = 223$

$\bar{x}_2 = 228$

$s_1 = 39$

$s_2 = 35$

$n = 23$

$m = 30$

$$t = \frac{(\bar{x}_1 - \bar{x}_2) - (\mu_1 - \mu_2)}{Sp \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}} = \frac{-5}{34.572 \sqrt{\frac{1}{23} + \frac{1}{30}}} = -.5218$$

$$Sp^2 = \frac{(22)(39)^2 + (29)(35)^2}{23+30-2} = 1195.235$$

$$Sp = 34.572$$

$p = P(t < -.5218) = .3015$

w/ 23+30-2 = 51 DOF

USE Z!

SINCE $p > .05$, FAIL TO REJECT H_0 .