3.

CLAIM: DIFF FROM .50 ("≠")

$H_0: p = .50$

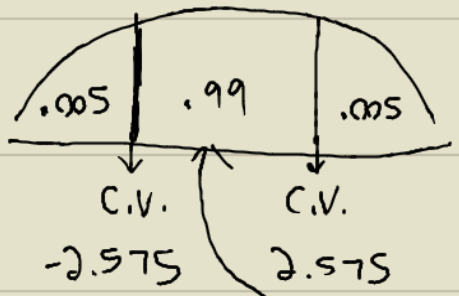
$H_1: p \neq .50$

$n = 400$

$X = 190$

$\alpha = .01$

$\hat{p} = \frac{X}{n} = \frac{190}{400} = .475$



T.S.

$$z_0 = \frac{\hat{p} - p_0}{\sqrt{\frac{p_0(1-p_0)}{n}}}$$

$$z_0 = \frac{(.475 - .50)}{\sqrt{\frac{.50(1-.50)}{400}}}$$

$z_0 = -1$

CONC

ACCEPT H_0

REJECT H_1

REJECT CLAIM

4.

CLAIM: LOWER THAN .29 ("<")

$H_0: p \geq .29$

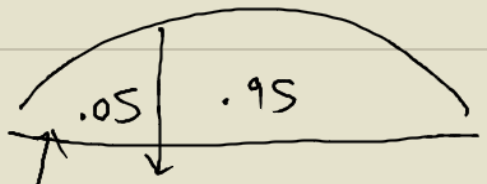
$H_1: p < .29$

$n = 500$

$X = 80$

$\alpha = .05$

$\hat{p} = \frac{X}{n} = \frac{80}{500} = .16$



T.S.

$$z_0 = \frac{\hat{p} - p_0}{\sqrt{\frac{p_0(1-p_0)}{n}}}$$

$$z_0 = \frac{(.16 - .29)}{\sqrt{\frac{.29(1-.29)}{500}}}$$

$z_0 = -6.41$

CONC

REJECT H_0

ACCEPT H_1

ACCEPT CLAIM

NOTE

MAJORITY

$(p > .50)$