8-2

Null Hypothesis H_0: equality

Alternative Hypothesis H_1: $<$ $>$ $\neq$

$\neq$ 2 tailed

$<$ left tailed

$>$ right tailed

$p \neq .3$ two-tailed $\alpha = .10$

$\frac{\alpha}{2} = .05$

$Z = \pm 1.645$ within chart

$p < .3$ left-tailed $\alpha = .10$

$z = -2.33$

$p > .3$ right-tailed $\alpha = .02$

$1 - .02$

$.98$

pos. Z-score

$z = 2.05$

$$z = \frac{\hat{p} - p}{\sqrt{\frac{pq}{n}}}$$

26. $\hat{p} = \frac{462}{1005} = .4597$

$$z = \frac{.4597 - .5}{\sqrt{\frac{.5(.5)}{1005}}}$$

$$z = \frac{-.0403}{\sqrt{\frac{.25}{1005}}}$$

$$z = \frac{-.0403}{.0158}$$

$$z = -2.56$$

p-value $\alpha = .05$ Significance level

29. $z = -1.25$

look-up $z = -1.25 \rightarrow .1056$

Compare .1056 to .05

p 402 p-value

p value $\leq \alpha$ Reject H_0

p value $> \alpha$ Fail Reject H_0

$.1056 > .05$

Fail to Reject H_0

30. Right-Tailed

$z = 2.50$ $\alpha = .05$

looking up

$z = 2.50 \rightarrow .9938$

$1 - .9938$

Compare $.0062 < .05$

Reject H_0

31. 2 tailed $\neq$

$z = 1.75 \rightarrow .9599$

$1 - .9599$

$.0401$

2-tailed $2(.0401)$

compare $.0802 > .05$

Fail to Reject H_0

$\neq$ two-tailed

$>$ right-tailed

$<$ left-tailed

8-3 p420. $\alpha = .05$

7. $H_0: p = .75$

$H_1: p \neq .75$

$$z = \frac{\hat{p} - p}{\sqrt{\frac{pq}{n}}}$$

find $\hat{p} = \frac{1640}{2246} = .73$

$$z = \frac{.73 - .75}{\sqrt{\frac{.75(.25)}{2246}}}$$

$$z = \frac{-.02}{.0091}$$

$$z = -2.19$$

Look up $z = -2.19 \rightarrow .0143$

$\neq$ Invisible $2(.0143)$

$.0286 \leq .05$

Compare Reject H_0