8-3

7. p 420

$\hat{p} = \frac{1640}{2446}$

Sample Proportion

Hypothesis

$H_0: p = .75$

$H_1: p \neq .75$

Significance level $\alpha = .05$

Find z-score

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

$\hat{p} = \frac{1640}{2446}$

$\hat{p} = .730$

$z = \frac{.73 - .75}{\sqrt{\frac{.75(.25)}{2446}}}$

$z = \frac{-.02}{.009}$

$z = -2.19$

p-value

$\alpha = .05$

$\neq$ 2tailed

$\frac{\alpha}{2} = .025$

Look up

$z = -2.19$

$\rightarrow .0143$

$.0143 \leq .025$

Reject H_0

p 402.

p value $\leq \alpha$ Reject H_0

p value $> \alpha$ Fail to Reject H_0

There is sufficient evidence to warrant rejection of the claim that 75% of adults use cell phones while driving.

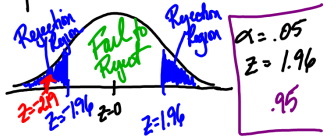
Traditional Method

$H_0: p = .75$

$H_1: p \neq .75$

$\hat{p} = .73$

$z = -2.19$



$\alpha = .05$

$z = 1.96$

.95

Reject H_0

There is sufficient evidence to warrant rejection of the claim that 75% of adults use cell phones while driving.

8. p424

$\hat{p} = \frac{35}{750} \approx .047$

$H_0: p = .05$

$H_1: p < .05$

$\alpha = .01$

p - value

$z = \frac{.047 - .05}{\sqrt{\frac{.05(.95)}{750}}}$

$z = \frac{-.003}{.00795}$

$z = -.38$

Look up $\rightarrow .3520$

$\alpha = .01$

$.3520 > .01$

Fail to Reject H_0

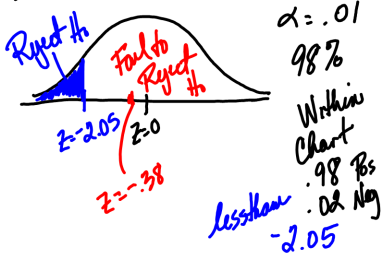
There is not sufficient sample evidence to support the claim that fewer than 5% of people aged 14 or older were arrested within the last year.

$\hat{p} = \frac{35}{750} = .047$

$H_0: p = .05$

$H_1: p < .05$

$z = -.38$



$\alpha = .01$

98%

Within Chart

.98 Pos

.02 Neg

less than

-2.05

There is not sufficient sample evidence to support the claim that fewer than 5% of people aged 14 or older were arrested within the last year.