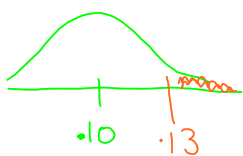


p = the prop. of all grad. students that want campus housing

$H_0: p = .10$ Don't need more housing

$H_a: p > .10$ Recommend more housing

$$\hat{p} = \frac{62}{481} = .13$$



Cond.

- SRS from pop. of interest
problem states random sample of grad. students. ✓

$$\sigma_{\hat{p}} = \sqrt{\frac{.10(1-.10)}{481}} = .0137$$

- $np \geq 10$ and $n(1-p) \geq 10$
 $481(.10) \geq 10$ $481(.90) \geq 10$
 $48.1 \geq 10$ $432.9 \geq 10$

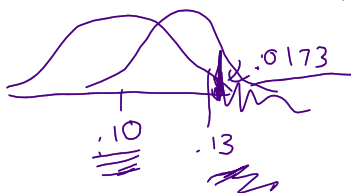
$$z = \frac{.13 - .10}{.0137} = \frac{.03}{.0137} = 2.19 \approx 2.11$$

$$P_z(z > 2.11) = .0173 = p\text{-value}$$

The p-value of .0173 is sign. @ $\alpha = .05$.
There is enough evid. to reject H_0 .

I would recommend building more housing.

interpret p-value:



.0173 prob. of obtaining a sample result where .13 or greater want housing, if H_0 is true \rightarrow only .10 want housing.

n=500 $\hat{p} = \frac{62}{481} = .13$ reject @ $\alpha = .05$

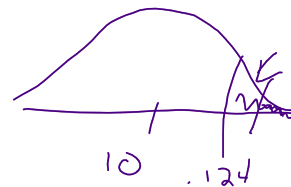
19 did not resp.
 → if all 19 said 'no'

$\hat{p} = \frac{62}{500} = .124$

$z = 1.79$

p-value = .0368

No,



$$.13 \pm 1.96 \sqrt{\frac{.13(1-.13)}{481}}$$

$$(.099, .159)$$

95% conf. the actual prop. of all grad students who want on campus housing is in the int.

.10 is in interval

Rejected .10

Not consistent



alpha = .05 1-sided
90% int.