Section 8.2 — Testing Claims about a Population Proportion

Parameter: Population Proportion, p

Hypothesis: 65% of C.C. students take a remedial course (math, reading, writing). You believe it is higher in Florida.

$H_0: p = 0.65$, $H_1: p > .65$ ← one tail test

Gather: $\hat{p} = \frac{x}{n} = \frac{201}{300} = 0.67$, $n = 300$, $\alpha = 0.06$

Requirements: Get p from H_0, $p = .65$, $q = 1 - p = .35$

$np = 300(.65) = 195 \geq 10$, $nq = 300(.35) = 105 \geq 10$,

Test Statistic: $Z = \frac{\hat{p} - p}{\sqrt{\frac{pq}{n}}} = \frac{.67 - .65}{\sqrt{\frac{.65 \cdot .35}{300}}} = 0.73$ std. errors ← get p from H_0

Critical Value: (Right tailed test)

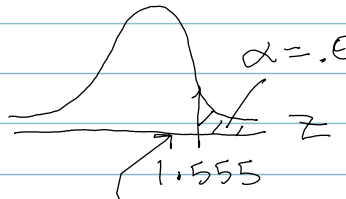
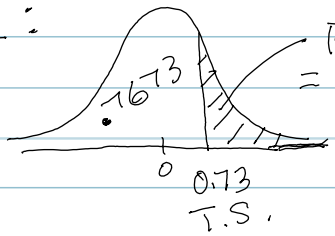


Table A2: df → Bottom Row (z); $\alpha = .06$ one tail → 1.555

P-value:



p-val $= 1 - .7673 = .2327$

Table A1: z → .03; 0.7 → .7673

Conclusion: p-val $> \alpha$ so fail to reject H_0 & don't support H_1.

The data do not support the claim that more than 65% of Florida C.C. students take a remedial course.