

Homework 9 - Due Tuesday (which is actually a Monday), April 19

Do Problems 10.34, 10.41, 10.42, 10.50, 10.55, 10.56 and the problem below

Homework should be written neatly and clearly explained. If it requires more than one sheet, the sheets must be stapled. Include your name and id number in the top right corner of your homework.

Problem 1. In order for a certain law to pass, it must be approved by more than $\frac{2}{3}$'s of the population.

You wish to do a Hypothesis Test to determine if this law will pass. You randomly sample 200 people and ask if they support the law or not. Let Y be the number of sampled people who support the candidate. Let p be the unknown proportion of the population that supports the law.

- (a) What is H_0 and H_a for this Hypothesis Test?
- (b) Use R to simulate 200 people with $p = .70$. What is the p -value your simulation?
- (c) Does your simulation suggest that you should reject H_0 at an $\alpha = .05$ level?
- (d) Use your simulation to give the $\alpha = .05$ lower confidence bound for p .

Remember that you should treat $p = .70$, as an unknown parameter that you're trying to find information about.