

DUE: 4/26/2012

SHOW ALL WORK!!

- 1) You are in charge of analyzing focus group results for a television show pilot that recently aired. The show is very expensive to produce and requires more than a 75% favorability rating to get the go ahead. Your focus group consisted of 100 individuals, of which 82 reported a favorable score.
 - a. What are your null and alternative hypotheses?
 - b. What is the interpretation of a Type II error in this situation?
 - c. Find the test statistic (Z) for your current sample.

- 2) You are in charge of testing the average 0 to 60 time of a new car. It is believed that the standard deviation of times is 0.65 seconds. In a sample of 40 runs, the average 0 to 60 time was 3.37 seconds. You are testing the null hypothesis (H_0) that the average 0 to 60 time is 3.5 seconds vs. the alternative hypothesis (H_a) that the average 0 to 60 time is faster than 3.5 seconds.
 - a. A critical value of 3.4 seconds is proposed. Under that critical value, make a decision based on your sampled value of 3.37 seconds and write a sentence interpreting that decision.
 - b. Calculate α (Probability of a Type I Error) based on the critical value proposed in part a.
 - c. What is the p-value associated with your sampled statistic of 3.37 seconds?

- 3) Conduct a formal hypothesis test at the 1% level to test if the proportion of students at a Stony Brook college football game is different from the believed proportion of 80%. A sample of 28 individuals was taken where 60% were students.