Assumptions for Testing Claims About a Population Proportion p



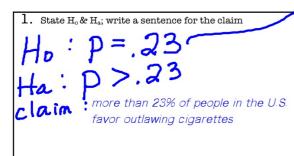
- The sample observations are a simple random sample.
- 2) The conditions for a binomial experiment are satisfied (Section 4-3)
- The condition np ≥ 5 and nq ≥ 5 are satisfied, so the binomial distribution of sample proportions can be approximated by a normal distribution

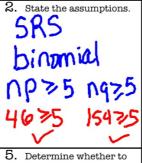
Steps for Hypothesis Testing

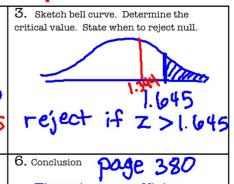


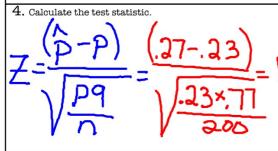
- State the null and alternative hypothesis in symbolic form. State claim in sentence form.
- Verify assumptions are met; state given info.
- Determine alpha level; sketch critical region(s)
- Choose appropriate test statistic and formula; Calculate the test statistic
- Reject null or do not reject null based on the test statistic
- Write a conclusion sentence.

1. Harper's Index claims that more than 23% of people in the United States are in favor of outlawing cigarettes. A random sample of 200 people are selected. 27% are in favor of outlawing them. At $\alpha = 0.05$, test the claim that more than 23% of people in the United States favor outlawing cigarettes.









There is not sufficient evidence to support the claim that more than 23% of people in the U.S. favor outlawing cigarettes

3. A medical researcher states that 55% of U.S. adults eat breakfast every day. In a random sample of 250 U.S. adults 66.4% say they eat breakfast every day. At $\alpha = 0.01$, test the claim that 55% of U.S. adults eat breakfast every day.

