

Inference for proportions

1. Write down the null and alternative hypotheses using both statistical notation and plain english.



Only about 20% of people who try to quit smoking succeed. Sellers of a motivational tape claim that listening to the recorded messages can help people quit.

Statistical notation: H_o : H_a :

Plain English:

H_o :

H_a :

2. After a political ad campaign, pollsters check the governor's "negatives", which means the percentage of state residents who disapprove of his job performance. They test the hypothesis that the ads produced no change against the alternative that the negatives are now below 30%, and find a P-value of 0.22.

(a) Write down the null and alternative hypotheses, in statistical notation.

(b) Which of these is the correct decision for the hypothesis test?

A. Reject H_o B. Fail to reject H_o

(c) Check any of the following that are appropriate things to say in a conclusion.

- There is no evidence that the ad campaign improved the governor's approval ratings.
- There is evidence that the ad campaign improved the governor's approval ratings.
- There's a 22% chance that the ads worked.
- There's a 22% chance that the poll they conducted is correct.
- There's a 22% chance that poll results could be just natural sampling variation rather than real change in public opinion.