

CHAPTER 19: TESTING HYPOTHESES ABOUT PROPORTIONS

Null Hypothesis: specifies a population model parameter of interest and proposes a value for that parameter. Think of it as the _____ and _____.

$$H_0: \text{_____} = \text{_____}$$

Alternative Hypothesis: What we should conclude if we find the null hypothesis to be unlikely (the alternative)

- Two-sided alternative: an alternative is two-sided when we are interested in deviations in _____ direction away from the hypothesized parameter value.

$$H_A: \text{_____} \neq \text{_____}$$

- One-sided alternative: an alternative is one-sided when we are interested in deviations in _____ direction away from the hypothesized parameter value.

$$H_A: \text{_____} > \text{_____}$$

$$H_A: \text{_____} < \text{_____}$$

P-value: The probability that the event we witnessed could have happened by chance.

- When the P-value is small enough →

- When the P-value is high →

Write the null and alternative hypotheses for each situation.

1. 80% of students attend advisory. To raise this percent, the school starts giving prizes at random for those students that attend advisory. Has the percent increased?
2. In 2012, 85% of high school students used Facebook on a regular basis. Has the percent changed?