Lesson 18: Inference for Two Proportions

Preparation

Directions: Please fill in Part I as you study the Reading Assignment. Once you finish the reading, complete the questions on Part II. You may use your notes, the key, and the help videos. Be sure to take this completed assignment to your group meeting where you can ask and help answer questions on this assignment.

Problems

Part I: Use the information in the reading assignment to complete these questions.

1. What is the null hypothesis for the significance test comparing two population proportions?
2. What is the formula for a test statistic for testing two population proportions? Explain what each variable stands for in your formula.
3. What is the confidence interval for comparing two proportions? Explain what each variable stands for in your formula.

Part II: You will complete Part II with your group at Group Preparation

Use the following data summary to answer questions 4-6

Population	Sample Size	X
Women	296	63
Men	251	27

4. There was a recent survey taken on whether consumers are "label users" who pay attention to label details when buying clothes. Are men and women equally likely to be label users? Determine if the proportion of men who use labels are different than the proportion women who use labels with a level of significance of $\alpha = 0.05$.
    a. Check the Requirements
    b. State the null and alternative hypotheses
    c. Compute the Test Statistic
    d. Compute the P-value
    e. Shade your P-value on the normal distribution curve with the Test statistic labeled.
    f. What decision do you make about the null hypothesis?
    g. State your conclusions in "layman's terms".
5. Construct a 95% confidence interval for the difference of the two proportions in #4.
6. Interpret the confidence interval you constructed in #5.