Homework #34: Hypothesis Testing for Proportions

1.) The US department of Transportation reported that 65% of all fatally injured automobile drivers were intoxicated. A random sample of 55 records of automobile driver fatalities in Bucks County, Pennsylvania showed that 37 involved an intoxicated driver. Do these data indicate that the population proportion of driver fatalities related to alcohol is not 65%? (Use a 5% significance level).

H0:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

H1:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

INTERPRETATION:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2.) Kaplan has come out with a new drug that makes you do better on the SAT. Normally, only 36% of students score above a 500 on the math SAT. But Kaplan gives its new drug to 40 students and 15 score above a 500 on the test. Can Kaplan conclude that the drug makes you better on the SAT (use a 5% level of significance).

H0:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

H1:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

INTERPRETATION:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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3.) A team of doctors is testing a new drug that prevents heart attacks. It is known that 70% of patients who take the old drug do not get a heart attack. Suppose that the doctors in various hospitals have given the new drug to a total of 65 people and that 49 patients do not get a heart attack. Can we justify the claim that the new drug is better than the old one (use a 5% level of significance).

H0:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

H1:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

INTERPRETATION:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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4.) Nainoa believes that he is clairvoyant (he can predict the future). Normally, when a person rolls a dice there is a 16.66% chance of guessing the number correctly. But Nainoa has someone roll a die 50 times and guesses correctly 13 times!! Can Nainoa conclude that he is clairvoyant and can predict what number will come up of the dice (use a 1% level of significance).

H0:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

H1:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

INTERPRETATION:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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