STP 226 NAME: _____

Class time:_____

Group work Ch11

{In testing hypothesis e sure to state H_a and H_a , compute the value of the test statistics, compute a p-value or give rejection region, decide if you reject null hypothesis or not and state your conclusion in words. }

1. During a 1998 race for state senator a newspaper conducted a poll and found that 607 of 1200 registered voters sampled would vote for the Republican candidate. Let p be the population proportion of registered voters who would vote for the Republican.

a. Give a 90 % level confidence interval for p.

b. Based on your CI from part a, can you conclude that a Republican is now likely to win if more than 50% is needed for a win. Explain.

c. What sample size is needed to cut margin of error in your interval to 1%?

2. In a study conducted recently 567 out of 1072 people surveyed expressed preference for chocolate ice cream over other flavors. Let p be the proportion of the population surveyed that prefers chocolate ice cream. At 5% significance level do the data presents evidence that majority of people from surveyed population prefer chocolate ice cream? Test appropriate hypothesis.

3. We want to know to what extent is the frequency of parole violation related to the type of crime? Are impulsive murderers more likely to violate their parole than premeditated murderers?
Out of 42 persons who had served time for impulsive murder, 29 violated their parole.
Out of 40 persons who had served time for premeditated murder, 18 violated their parole.

Let p_1 = proportion of all impulsive murderers who violate parole
p_2 = proportion of all premeditated murderers who violate parole

a. Perform a hypothesis test for the null hypothesis H_o: $p_1=p_2$ vs. the appropriate alternative hypothesis. Test using α = .05.

b. Obtain 95% CI for p_1-p_2

4. Suppose 95% confidence interval for p_1-p_2 , difference between proportion of men smokers, p_1, and women smokers, p_2, in Poland is (- 0.05, 0.03).
Based on that interval do you think there is evidence at 5% significance level that p_1 and p_2 are different? Explain why or why not.