Paul von Hippel Your name_____
Sociology 549, Winter 2006

Pre-final extra problem
due T 11/21 at the *beginning* of lab

***Note*. This problem will not be collected or graded, but you should treat it just like any graded assignment. It will be discussed in lab, and similar problems may appear on the final.**

1) (15 points) Between April 2001 and February 2003, Franklin County police departments ran a program called Stop Teenage Opportunities to Purchase (STOP). In the STOP program, the police employed 18- and 19-year-olds to try buying alcohol from county businesses. It is illegal, of course, to sell alcohol to teenagers. The teenage STOP agents went to campus area businesses 655 times, and 178 of those visits led to illegal sales. They went to airport-area businesses 435 times, and 134 of those visits resulted in illegal sales. They went to northeast businesses 397 times, and 123 of those visits resulted in illegal sales.
   a) (2 points) Summarize these results in two contingency tables
      - one reporting frequencies with marginal totals
      - one reporting percentages and sample sizes.

      Summarize the percentage table in 1-3 sentences.

   b) (2 points) Many people would assume that it is easier to buy alcohol in areas where the STOP agents had a higher percentage of illegal purchases. If you assumed this, what statistical issue would you be overlooking?

   c) (7 points) Test the claim that minors have an easier time buying alcohol in some parts of the county than in others. State your hypotheses using formal symbols, and carry out the hypothesis test. Give an approximate *p* value and interpret it. Do you reject the null hypothesis? What does this tell you about alcohol sales?