1. In the general population, the prevalence of Posttraumatic Stress Disorder (PTSD) is estimated to be about 5% in adult males. In a southwestern city, 85 male firefighters were randomly selected and surveyed, and it was found that 9 of the 85 ($\hat{\pi} = 10.6\%$) had PTSD. Clearly, the proportion of male firefighters from this city with PTSD <u>in this sample</u> is greater than 5%, but does this result provide evidence that the prevalence of PTSD is higher for <u>all</u> male firefighters in this southwestern city than for males in the general population?

Research Hypothesis	
Null and Alternative Hypotheses	Let π = H_o: H_a:
Calculate the p-value	To find the p-value, we will use the binomial distribution with… n = _____ π = _____ Use the file **BinomialProbabilities.xls** to find the p-value. p-value: _____
Conclusion	

2. Census data for a certain county show that 19% of the adult residents in this county are Hispanic. Suppose 72 people are called for jury duty and only 9 of them are Hispanic (so $\hat{\pi}$ = 12.5%). Clearly, the proportion of Hispanics <u>in this sample</u> is less than 19%. Does this apparent underrepresentation of Hispanics call into question the fairness of the jury selection system, overall?

Research Hypothesis	
Null and Alternative Hypotheses	Let π = H_o: H_a:
Calculate the p-value	To find the p-value, we will use the binomial distribution with… n = _____ π = _____ Use the file **BinomialProbabilities.xls** to find the p-value. p-value: _____
Conclusion	

3. Suppose a governor is concerned about his "negatives" (i.e., the percentage of state residents who express disapproval with his job performance). His campaign pays for a series of television ads, hoping that they can keep the negatives below 30%. They use follow-up polling to assess the ads' effectiveness.

   a. Set up the null and alternative hypotheses you would use to investigate the governor's question.

      Let π =

      H₀:

      Hₐ:

   b. Suppose the test is carried out, and his negatives come in at 28%. The p-value obtained is .18. Write a conclusion that addresses the governor's question.

   c. Which of the following interpretations of the p-value is most appropriate? Explain.

      i.   There is an 18% chance that the ads were effective.
      ii. There is an 82% chance that the ads were effective.
      iii. There is an 18% chance that the poll was conducted correctly.
      iv. There is an 18% chance that natural sampling variation could produce poll results such as these even if the ads weren't really effective.