Introduction to Quantitative Sociology
Homework 10

Name: ________________________

Due: Thursday, November 21st in class.

1. The smaller the sample size in your study, the larger your standard error will be.
   a. True
   b. False

2. In the health and crime datasets, the average number of years of education is 13.73 with a standard error of .065. In complete sentences, describe what we would expect the average education in the Illinois population to be based on these statistics. Make sure to include how confident you are in your estimate(s) in your sentence(s).

Questions 3-4: The following table gives the average years of education for men and for women in the health and crime datasets.

<table>
<thead>
<tr>
<th>SEX</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>FEMALE</td>
<td>880</td>
<td>13.56</td>
<td>2.525</td>
<td>.085</td>
</tr>
<tr>
<td>MALE</td>
<td>620</td>
<td>13.97</td>
<td>2.497</td>
<td>.100</td>
</tr>
</tbody>
</table>

3. In complete sentences, describe what we would expect the average education in the population of Illinois women to be based on these statistics. Make sure to include how confident you are in your estimate(s) in your sentence(s).

4. In complete sentences, describe what we would expect the average education in the population of Illinois men to be based on these statistics. Make sure to include how confident you are in your estimate(s) in your sentence(s).

5. The Gallup Poll conducted a survey of 1009 American adults aged 18 and over and asked them to rate their approval of the job performance of previous Presidents. What is the margin of error for this sample (to the first decimal place - ex. 4.1)?
6. Thirty-four percent of the adults surveyed indicated that they approve of how Richard Nixon did his job. Put into a complete sentence what we would predict about the American adult population’s approval of Richard Nixon’s job performance based on this sample. Make sure to indicate how confident we would be in this estimate.

7. Gallup recently conducted a survey asking 1002 adults over the age of 18 about their experiences with crime. In their survey, 25% of the adults surveyed said that some member or members of their household had been a victim of crime during the past year. Put into a complete sentence what we would predict about experiences with crime among all households in the United States during the past year. Make sure to indicate how confident we would be in this estimate.

8. In the above poll, they also found that 72% of all crimes were reported to the police (up from 64% last year). Put into a complete sentence what we would predict about reporting of crimes to the police among all households in the United States during the past year. Make sure to indicate how confident we would be in this estimate.

9. If the Gallup poll increased their sample size to 5000, what would be the expected population parameter for experiences with crime in the past year, assuming their sample statistic was the same as in question 3?

10. Going from 600 to 700 respondents in your sample will improve the accuracy of your statistics more than going from 200 to 300.
   a. true
   b. false

11. If a mandatory survey of all ECU students indicated that 40% of ECU students smoke at least 7 cigarettes per week, what would we expect a survey of 500 students to generate as an estimate of what percentage of students smoke at least 7 cigarettes per week? Answer in a complete sentence, including in your sentence what percentage of samples of 500 should generate these estimates.
12. If on a survey of 500 students 35% indicated that they smoked at least 7 cigarettes per week, which of the following is true?:
   a. we have represented smokers as well as we would be expected to with a sample of this size
   b. we have over-represented smokers in our sample
   c. we have under-represented smokers in our sample

13. 74.35% of the 2001 ECU student population was under the age of 24, according to official statistics from the University on all students. If we randomly sampled 1300 ECU students in 2001 what would we expect the percentage of students under the age of 24 to be?

14. 1.51% of 2001 ECU student population were hispanic, according to official statistics from the University on all students. If we randomly sampled 2000 students in 2001 and in our sample 2.5% of students surveyed identified as hispanic, did our sample estimate the population as well as we could expect it to?

15. What if we sampled 500 ECU students and 3% of our sample identified as hispanic. Did we do as well as we could expect to in estimating the population parameter?