Stat 1350, Quiz #1, Spring 2015   Name _____KEY_____

Instructions: Answer each question completely. Show all work for any computational questions.

1. What is a response (variable)?

    it's the variable measured at the end of a study or experiment which is thought to be caused or influenced by the explanatory variable.

2. How are populations and samples different? How are they the same?

    populations are everyone we want to understand a sample is a subset of the population we can study when looking at the whole population is too difficult or costly.

3. Give an example of a kind of bias that can occur in studies, and why is it important to eliminate bias?

    response bias is a kind of bias that comes from the way people answer possibly badly worded questions

    sampling bias comes from asking a non representative subset of the population but treating it as representative

4. If we wanted to find out what the performance of a typical statistics student was on their midterm, and we decided to look at the averages of classes across an entire college, what is the sampling frame in this scenario?

    all colleges with statistics courses

5. If a survey obtained a result that 82% of respondents said they had little or no confidence in the effectiveness of Congress today, and this result was obtained from a simple random sample of 4000 people, what is the margin of error of the poll? Use this result to find the 95% confidence interval for true value of the population parameter.

$$\frac{1}{\sqrt{4000}} = .0158 \quad \text{margin of error} \qquad 1.6\%$$

$$.82 - .0158 = .8042$$
$$.82 + .0158 = .8358$$

$$(.8042, .8358)$$

or $(80.42\%, 83.58\%)$

6. Suppose that there are 85 students in a statistics class, and the instructor wants to do a simple random sample of 10 students. She numbers her students from 1-85, and then uses the following list of random numbers to obtain a sample. Which of her 85 students were selected for the sample?

99546 63411 20034 02618 79807 01009 95189 83326 22097 84733 36948 14382 00783

54, 66, 34, 11, 20, 3, 40, 26, 18, 79