

Dr. Lloyd: Quantitative Techniques in Sociology
Homework Assignment #1: Introduction to Statistics

Name: _____ Student ID#: _____ Lab Time: _____

Complete the following questions on a separate sheet of paper. Be sure to: 1) show all of your work, 2) clearly label each problem, 3) put a box around your final answer, 4) use a pencil, 5) type definitions, 6) present your work in a neat and orderly fashion, and 7) staple this cover sheet to your other pages of completed work (do not paper-clip or fold). Remember, homework assignments are designed to help you prepare for exams. The material covered within assignments will be *very* similar to what appears on each test. *Mastery* of this material is crucial to pass this course. If you cannot complete these problems by yourself, and in a reasonable amount of time, you will *not* be able to pass the exam. If you are having troubles figuring out any of the material below see your lab instructor immediately. Each item is worth up to 5 points; for a possible total of 100 points.

- 1) Define each of the following concepts in your own words. Give a complete and specific definition and illustrate the concept by giving examples.
 - a) Continuous Variable
 - b) Nominal Level Variable
 - c) Ordinal Level Variable
 - d) Frequency Distribution

- 2) Indicate which of the following variables are continuous and which are discrete by circling the appropriate word.

a) Years of full-time employment	continuous	discrete
b) National origin	continuous	discrete
c) Political party affiliation	continuous	discrete
d) Attitudes toward the legalization of gambling	continuous	discrete
e) Poverty rate	continuous	discrete

- 3) Identify the dependent and independent variables in the following statements.
 - a) Poll turn out on Election Day is caused by the weather.

Dependent variable:

Independent variable:

- b) Political party affiliation leads people to either support or oppose legalized gambling.

Dependent variable:

Independent variable:

- 4) The following data on house prices in Pullman are incomplete. Use your knowledge of frequency distributions to fill in the missing values.

<u>Interval</u>	<u>f</u>	<u>%</u>	<u>c%</u>
\$50,000 - 69,999			
\$70,000 - 89,999	61		39
\$90,000 - 109,999		28	67
\$110,000 - 129,999	45	22.5	89.5
\$130,000 - 149,999			
N	200		

- 5) Below is a frequency distribution of alcohol consumption among WSU students (from self-report data on the number of times the individual consumed an alcoholic beverage in the previous month) that has too many intervals. Construct a new frequency distribution with *half* as many intervals that are *twice* as wide. Be sure to show and label 1) the new intervals, 2) the sample size, 3) the raw frequencies, 4) the percentages, and 5) the cumulative percentages.

<u>Interval</u>	<u>f</u>
0 - 4	34
5 - 9	26
10 - 14	19
15 - 19	11
20 - 24	23
25 - 29	44
30 - 34	49
35 - 39	53
40 - 44	62
45 - 49	93
50 - 54	82
55 - 59	39
60 - 64	54
65 - 69	61
N	

6) From the distribution that you have created above, what can you say as a researcher about the alcohol consumption of WSU students in this sample?

7) Apply your knowledge of the "order of operations" in mathematics to the following problems.

a) $y = 10 \div 4^2 * 8$

b) $y = - (9^2) * 5$

c) $y = \frac{(5+7)^2 + 9}{2}$

d) $y = \sqrt{\frac{(120+5^2)-10}{5}}$

8) Perform the following operations.

note: $x_1 = 7, x_2 = 8, x_3 = 11, x_4 = 1, x_5 = 1, x_6 = 12, x_7 = 2$

a) $\sum x_i =$

b) $\sum(x_i - 6) =$