

Name (20 points):

Answer Key

BUS 230: Business and Economics Research and Communication

Instructor: Dr. James Murray

Quiz: Introductory Statistics

Fall 2013

Suppose the UW-L advancement office conducts a survey of its alumni to determine what factors influence alumni's willingness to make donations. The survey includes the following questions:

- How often do you visit the La Crosse area?
 - Rarely or never
 - Once per three to five years.
 - Once per year or two.
 - More than once per year.
- What is your highest level of education?
 - Four year baccalaureate degree
 - Masters degree or juris doctorate degree.
 - Doctorate degree.
- How many years has it been since you graduated from UW-L?
- Approximately how much money did you donate to charity in 2012?
 - None
 - \$1 - \$100
 - \$101 - \$500
 - \$501 - \$1,000
 - \$1,001 - \$10,000
 - More than \$10,000
- Are you willing to be contacted by the UW-L Advancement Office regarding making a donation?
 - Yes
 - No

For each of the research questions below, answer the following:

A. Select the appropriate statistical test

B. State the null and alternative hypotheses.

C. Describe the characteristics of the question and the data led you to the statistical test.

1. (20 points) Is there a relationship between the level of education a person has and how much they donate to charity?

A. Spearman correlation.

B. H_0 : correlation = 0, H_A : correlation \neq 0.

C. Two variables, both ordinal, looking for comovement.

2. (20 points) Is there a relationship between willingness to be contacted for a donation, and how often an alumnus visits the La Crosse area?

A. Chi-squared test.

B. H_0 : No relationship, H_A : There is a relationship.

C. Two variables, both categorical.

3. (20 points) Is there a difference in the time it has been since an alumnus graduated between graduates who are willing to make a donation and those who are not?

A. Independent Samples T-test.

B. H_0 : $\mu_1 = \mu_2$ H_A : $\mu_1 \neq \mu_2$

C. Two variables, time is interval ratio; looking for difference, independent groups.

4. (20 points) Is there a difference in how much people donate to charity between graduates who are willing to make a donation and those who are not?

A. Mann Whitney U-test.

B. H_0 : median₁ = median₂ H_A : median₁ \neq median₂

C. Two variables, charity contributions is on an ordinal scale, differences, independent groups.