Name _____

STA 442/1008 Quiz 1

1. (2 Points) Make up a an original example of an experimental study with one unordered categorical independent variable and one unordered categorical dependent variable. Clearly indicate which variable is independent and which variable is dependent.

2. (1 Point) Make up an original example of an observational study where it would be reasonable to calculate a correlation coefficient. You need mention only two variables.

3. (1 Point) For the study of Question 2, indicate how the data file would be set up.

4. (3 Points) The “Mozart effect” is that babies who are exposed to classical music tend to do better on intelligence tests later in life. Briefly discuss in terms of concepts from this course.

5. (3 Points) Indicate “True” or “False” for each of the statements below. To get marks on this question, you must have no more than one wrong.

a. _____ If $p>.05$, the results are statistically significant and we can draw conclusions.

b. _____ We seek to predict the dependent variable from the independent variable.

c. _____ In an experimental study, a statistically significant relationship between the independent variable and the dependent variable can provide some evidence of a causal relationship.

d. _____ The p-value is the probability that the null hypothesis is true.

e. _____ When a relationship between the independent variable and the dependent variable is statistically significant, we conclude there is no evidence that the two variables are actually related.

f. _____ We observe $r = 0.50$, $p = .002$. This means that 50% of the variation in the dependent variable is explained by a linear relationship with the independent variable.