

Exam 1 Review (100 points total)

Midterm Exam: 11/4/09

You will have the full 2 ½ hours to complete the exam if you need it, although it is designed to take about one hour.

Short Essay (40 points)

There will be 2 short 'essay' questions worth 20 points each. These are open-ended questions on definitions and concepts. Answers should be about 1 paragraph. I will pick 2 of the following questions:

- The correlation coefficient can be said to be a single number that summarizes the relationship between two variables. Describe conceptually how the correlation coefficient summarizes a relationship between two variables. Based on the topics discussed in class, name and describe three things that this single number might miss about the relationship?
- How does regression analysis partition the variance of Y into two components? (Keep it simple by assuming one predictor). Be sure to describe what the two components are, their conceptual meaning, and how they are derived.
- In general, how do simple and multiple regression differ? What are two primary advantages of using multiple regression over simple regression? How is the interpretation of the slope different in simple and multiple regression?
- Describe the relationship between a t-test, correlation, regression, and ANOVA when there is a single independent variable with two values (i.e., two groups). Assuming the independent variable is dummy coded, what special interpretations do slope and intercept have?

Multiple Choice (30 points)

There will be 15 multiple choice questions worth 2 points each. These may be on any of the assigned reading or the lecture material up to and including 10/28/09. The purpose of these questions is to make sure you have read the material and learned the concepts from the text and class lecture.

Computations and Interpretation of Results (30 points)

There will be two computational or printout interpretation questions (15 pts each). You may bring a single sheet of 8 1/2 X 11 paper, using both sides, with any formulas that you think you may need. (Note: this sheet can only be used for the computation portion of the exam.) Please bring a calculator to class. I will supply any statistical tables you might need. These questions may include one or more of the following:

Computations: r from raw data, B from raw data; intercept; B from β ; β from B ; B from r ; R^2 from sum of squares; t-test from B and SE_B ; F from sums of squares and dfs .

Interpretation: SPSS simple regression printout; SPSS multiple regression printout (hierarchical or simultaneous); intercept, standard error, R^2 ; B ; β ; t-test; F-test; R^2 -change; F-change; scatterplot, drawing and labeling a Venn diagram based on regression output.