Homework #1 - Psychology 330 - Due September 1, 2005

1. For each of the following studies indicate (1) the research question, (2) the dependent and independent variables and (3) indicate whether the study is experimental, quasi-experimental, or correlational.
   
a. A sample of 500, 40 year old, ASU graduates are selected and the following variables are recorded: current income, ASU grade point average, Gender, and ASU major. Grade point average, gender, and major are used to predict income.
   
b. A study of a program to improve diet is administered to high-risk children and compared to another group of same-aged children.
   
c. A school-based smoking prevention program was evaluated. Schools were randomly assigned to either receive the prevention program or a control program.

2. Describe two problems/alternative explanations for each of the following studies.
   
a. A psychologist reports that of the 30 depressed patients he has seen, 22 have dramatically improved after his special “Herbal Therapy.”
   
b. A dramatic difference in the onset of cigarette smoking was observed in schools that received a tobacco prevention program compared to schools that did not receive the program. The schools received the prevention or control program based on the location of the school in the state.
   
c. The percent of persons with a healthy diet is 67% based on a sample of 300 persons leaving a sporting goods store.
   
d. A researcher reports that analysis of his data with ANOVA suggested a highly significant effect but analysis with Multiple Regression suggested no difference.

3. Use the data, deviations, and deviations squared below to answer problem number 1 on page 48 in Keppel and Zedeck.

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OBS HEIGHT (deviations) HEIDEV HEIDEV2 WEIGHT (deviations) WEIDEV WEIDEV2
1 149 -16.5333 273.351 54 -7.1333 50.884
2 153 -12.5333 157.084 52 -9.1333 83.418
3 167 1.4667 2.151 53 -8.1333 66.151
4 161 -4.5333 20.551 57 -4.1333 17.084
5 151 -14.5333 211.218 47 -14.1333 199.751
6 154 -11.5333 133.018 62 0.8667 0.751
7 177 11.4667 131.485 69 7.8667 61.884
8 162 -3.5333 12.484 60 -1.1333 1.284
9 172 6.4667 41.818 55 -6.1333 37.618
10 178 12.4667 155.418 73 11.8667 140.818
11 173 7.4667 55.751 78 16.8667 284.485
12 164 -1.5333 2.351 58 -3.1333 9.818
13 181 15.4667 239.218 73 11.8667 140.818
14 182 16.4667 271.151 68 6.8667 47.151
15 159 -6.5333 42.684 58 -3.1333 9.818

\[ S = 2483 \]  \[ S = 917 \]
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4. Here are the number of concrete and non-concrete words recalled for five subjects in the secondary rehearsal condition of an experiment. (Note: You will use these data to compute correlation and regression in the next homework.)
   a. Compute the mean, SS, variance, and standard deviation for concrete and non-concrete words. Use two formulas to compute SS.
      C   NC
      10  8
      10  9
      8  7
      10  7
      9  4

5. Find a published research article in any area of psychology and answer the following questions. The research article can be one from another class you are taking. Include the complete citation for the research article.
   a. What is the research question? (If there was more than one research question, pick one question.)
   b. What are the dependent and independent variables? (If there were several independent and dependent variables pick one of each.)
   c. What type of study was it?
   d. Was analysis of variance or multiple/regression used? (Look in the data analysis section if there is one. Look for the acronym ANOVA.)