# STA 6934 – Fall 2003 – Quiz 1

**Print Name:**                                                **UFID:**

1) A study was conducted to determine whether use of a weight control drug is related to men's hair turning green. A group of 100 men with green hair were identified, and a similar group (with respect to age and other demographic characteristics) of men who's hair had not turned green were identified. Each man was asked whether they had been using the weight control drug. **Circle the best answer**.

   a) This is an example of what type of study design?

       i) Case-Control Study
       ii) Cohort Study
       iii) Randomized Clinical Trial
       iv) Cross-Sectional Study

   b) The **I**ndependent and **D**ependent variables are:

       i) **I**: Green Hair Status      **D:** Weight Control Drug Status
       ii) **I**: Green Hair      **D:** Used Weight Control Drug
       iii) **I**: Weight Control Drug Status      **D:** Green Hair Status
       iv) **I**: The 200 men      **D:** Green Hair Status

2) For each of the following outcomes, is it best defined as **N**ominal, **O**rdinal, **I**nterval?

   a) Body mass index. _____

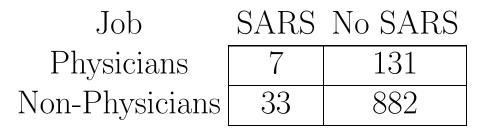   b) Attitude toward use of birth control from very favorable to very opposed. _____

   c) Whether or not a subject receiving a test drug has a particular adverse side effect. _____

   d) The change in diastolic blood pressure for a patient on a new treatment. _____

   e) The nationality of a patient suffering from a rare condition. _____

3) A sample of $n = 5$ adults who have been taking a test drug for weight loss are observed after 5 weeks to have the following weight losses: 6, 9, -2, 8, and 9 pounds, respectively. Give the mean, median, and standard deviation of the weight losses. What is the sample proportion that lost weight?

4) In a hospital in Hong Kong where the SARS virus was spread, health care workers were identified by job category and whether they contracted the SARS virus. For two categories, the results are given below.
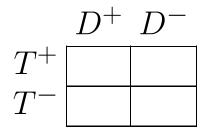
| Job | SARS | No SARS |
|---|---|---|
| Physicians | 7 | 131 |
| Non-Physicians | 33 | 882 |

a) What is the probability a randomly selected worker is a Physician? ————————

b) What is the probability a randomly selected worker is a Non-Physician? ————————

c) What is the probability a Physician contracted SARS? ————————

d) What is the probability a Non-Physician contracted SARS? ————————

5) A diagnostic test is given to every inhabitant of an island. There are 1000 inhabitants, of which 250 have the disease being tested for. The test has 90% sensitivity and 80% specificity. Complete the following table where $T$ represents test result, and $D$ represents disease status.

|  | $D^+$ | $D^-$ |
|---|---|---|
| $T^+$ |  |  |
| $T^-$ |  |  |

Give the positive and negative predictive values of the test.