* **Observational Study or Experiment?**

1. Which of the following is an observational study and which is an experiment?
2. A Stat 113 instructor announces a study session to be held the night before a test. The instructor lists the students who attended the session and compares their scores to the remaining Stat 113 students’ scores.

**Observational Study**

1. To determine whether a review session will improve his students’ test scores, a Stat 113 instructor divides his class into two groups. He then requires one group to attend a study session and compares the test results of each group.

**Experiment**

* **Population and Sample, Parameter and Statistic**

1. You are interested in the proportion of Stat 113 students that will end up with an A this semester. You decide to survey 100 students in the class. Identify the

(a) population: **all Stat 113 students this semester**

(b) sample: **the 100 students in the class**

(c) variable of interest: **whether or not a student will end up with an A**

1. The mean income of all subscribers to a particular magazine is **$26000**. We draw a random sample of 100 subscribers and find that their mean income is **$27300**. Identify the

(a) population: **all subscribers to the particular magazine**

(b) sample: **100 randomly selected subscribers**

(c) variable of interest: **the mean income of magazine subscribers**

* **Types of Sampling**

1. Which sampling method was utilized? Why?
2. Student organization looking to get signatures for a petition camp out in front of Class of 1950 Lecture Hall.

**Convenience Sample / Voluntary Response Sample, because the selection process is seeking those individuals easiest to reach in front of Class of 1950 Lecture Hall.**

1. Select three students from a class to receive ice cream by putting all the students' names in a hat and picking out three names randomly.

**Simple Random Sample (SRS), because every individual has an equal chance of being sampled.**

1. Select three female students and three male students to receive ice cream by putting all the men's names in one hat and all the women's names in a different hat and picking out three names from each hat.

**Stratified Random Sample, because the population is first broken up into 2**

**subpopulations, one female and the other male students, then a SRS is done**

**within each subpopulation.**

1. In Fall 1995, the BBC in Britain requested viewers to call the network and indicate their favorite poem.

**Convenience Sample / Voluntary Response Sample, viewers who do not want to call will not be able to participate.**

1. Divide the class into four groups (freshman, sophomore, junior and senior) and take a random sample of two students from each group.

**Stratified Random Sample, because the population is first broken up into 4 subpopulations, then a SRS is done within each subpopulation.**

1. Priceline.com randomly e-mails a Customer Satisfaction Survey for certain transactions done on its site in which customers choose to either respond or not.

**Convenience Sample / Voluntary Response Sample, customers who choose not to respond will not be able to participate.**