

Practice Questions for lecture 1 & 2

Question 1: Determine which of the four levels of measurements is most appropriate. *Nominal, ordinal, interval, ratio*

- a) Biologists measure the water temperature of the Merrimack River in New Hampshire. **Ans:** Interval.
- b) Doctors measure the weights (in pounds) of pregnant women. **Ans:** Ratio.
- c) Physicians rank the severity of asthma using mild intermittent asthma, mild persistent asthma, moderate persistent asthma, severe persistent asthma or brittle asthma. **Ans:** ordinal.
- d) A meteorologist compiles a list of temperatures in degrees Fahrenheit for the month of May. **Ans:** Interval.
- e) A teacher records the eye color of each student. **Ans:** Nominal.
- f) The production of tomatoes by number of cans is **Ans:** Ratio.
- g) List of names of students in a class. **Ans:** Nominal.
- h) List of weights of students in a class. **Ans:** Ratio.
- i) List of grades of students in a class. *(A+, A, B, C, ...)* - *grades (92, 75, 81, ...)* **Ans:** ordinal Ratio.
- j) List of body temperatures in Fahrenheit of students in a class. **Ans:** Interval.

Question 2: Determine the type of sampling method:

- a) At a security checkpoint to a government facility, every 10th individual was more thoroughly searched than the others. **Ans:** systematic.
- b) Medical researchers following living organ donors classify donors according to whether they donated a kidney, a portion of the liver, a portion of the lung, bone marrow, or blood, the general health of 200 donors from each category is monitored for five years. **Ans:** Stratified.
- c) To obtain a sample of pregnant women, a researcher contacts her son's preschool teacher for a list of names. **Ans:** Convenience.
- d) A county water quality control officer obtains a list of all residential addresses in the county and constructs a sample of homes to monitor by selecting every 200th home on the list. **Ans:** Systematic.
- e) Biologists studying the pH level of state waterways obtain a sample of streams from a randomly generated list by selecting every 5th stream on the list. **Ans:** systematic.
- f)

Question 3: Fill in the blank:

- a) In a prospective (cohort) study, data is collected in the future from groups sharing common factors (called cohorts).
- b) There is no natural zero starting point for the data which been classified in the Interval level of measurement.
- c) Selection so that each individual member has an equal chance of being selected is called Random sampling.
- d) The Federal Drug Administration randomly selects a sample of Bayer aspirin in each tablet is measured for accuracy. This sample represent a observational study.
- e) In a study, Patients are given Lipitor to determine whether this drug has the effect of lowering cholesterol levels, this is an experiment study.
- f) The complete collection of all individuals to be studied is called population.
- g) A numerical measurement describing some characteristics of a population is called parameter.
- h) The branch of statistics generalizing from samples to populations, performing estimations is called Inference.
- i) The level of measurement in which categories of a variable have no relation to each other and cannot be arranged in a specific order is called Nominal.
- j) The sampling method that divides the population into sections then randomly select some of those sections, and choose **all** members from selected sections is called cluster.



NOTE: Solve similar questions from textbook.