MATH 10043 **CHAPTER 1** **DEFINITIONS**

Definition: **Population –** the entire collection of individuals or objects about which information is desired. A population may be considered to be finite or infinite.

Definition: **Census –** a collection of data from every member of the population.

Definition: **Sample –** a sub-collection or subset of a population selected for study.

Definition: **Parameter –** a numerical characteristic of a population.

Definition: **Statistic –** a numerical characteristic of a sample.

Definition: **Variable –** the characteristic about which we are interested.

Definition: **Data –** the observations that have been collected.

Types of Data:

- **Qualitative data --** categorical or attribute data.

- **Quantitative data --** numerical data that is either:
  discrete – count data
  or
  continuous – measure data.

Ex. A.) Determine the data type for each of the following:

(a) the number of siblings you have.
(b) the state/country in which you were born.
(c) your birth weight.
(d) your home zip code.

Definition: **Sampling error** -- the difference between the result of a sample and the result for the entire population. It is caused by random fluctuations of the sample – i.e., by chance.

Definition: When we say that a data set is **normal,** we mean that it has a bell-shaped distribution.

Definition: When we say that an observation is **statistically significant,** we mean that it is extremely unlikely to happen simply by chance.

Definition: **Descriptive statistics** -- the collection, presentation, and description of data.

Definition: **Inferential statistics** -- interpreting the data in order to draw conclusions about the population, based on information obtained from a sample.

Practice Problems for Chapter 1

1. Identify the following as a **parameter**, a **population**, a **sample**, or a **statistic**.

_____a) All grocery story customers.
_____b) Twelve customers waiting in a grocery line.
_____c) The average waiting time of the twelve customers.
_____d) The average amount of time that grocery store customers in general wait to be served.

2. Classify the following as Q--qualitative data, D--discrete data, or C--continuous data.

_____a) The number of times an individual has donated blood.
_____b) An individual's blood type.
_____c) The length of life for a light bulb.
_____d) The number of light bulbs in a box.
_____e) Thickness of a sheet of metal.
_____f) A poll of registered voters as to which candidate they support.

[Answers to practice problems may be found on the Even Answer Sheet.]