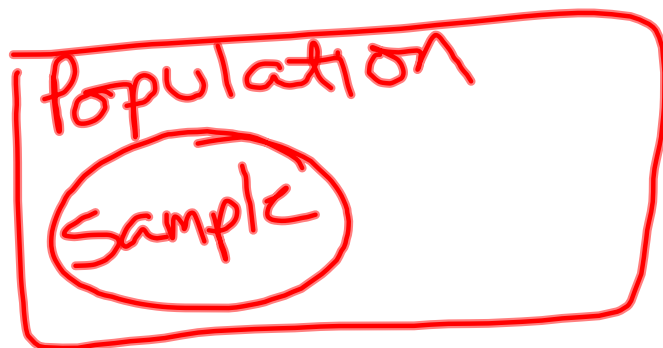


1.1 An Overview of Statistics

Statistics : is the science of collecting, organizing, analyzing and interpreting data in order to make decisions.

Data : consist of information coming from observations, counts, measurements, or responses.



Population: the collection of all outcomes, responses, measurements or counts that are of interest.

Sample : a subset of a population

Population: all people in us

Sample: all people in GA
all people over 21

Example:

A survey was conducted to determine the topics that teenagers want to discuss with their parents. The findings show that 46% would like more discussion about the family's financial situation, 37% would like to talk about school, and 30% would like to talk about religion. The survey was based on a national sampling of 505 teenagers, selected at random from all US teenagers.

- a) Describe the sample. 505 teenagers selected
- b) Describe the population. teenagers in the US
- c) Is the sample representative of the population?

Try it Yourself 1: page 3

The U.S. Department of Energy conducts weekly surveys of 800 gasoline stations to determine the average price per gallon of regular gasoline. On July 10, the average price was \$1.066 per gallon.

- a) Identify the population prices at all gas stations in the US
- b) Identify the sample prices at the 800 gas stations surveyed
- c) What does the data set look like? 800 gas prices

Definitions:

A **parameter** is a numerical description of a population characteristic.

A **statistic** is a numerical description of a sample characteristic.

Try It Yourself 2 page 4:

In 1997, major league baseball teams spent a total of \$1,119,537,215 on players' salaries.

- a) Decide whether the numerical value is from a population or a sample. it is from the population
- b) Is this numerical value a parameter or a statistic? Parameter

Definitions:

Descriptive statistics is the branch of statistics that involves the organization, summarization, and display of data.

Inferential statistics is the branch of statistics that involves using a sample to draw conclusions about a population.

Try It Yourself 3:

A survey conducted among 1017 men and women by Opinion Research Corporation found that 76% of women and 60% of men had a physical examination within the previous year.

- a) Identify the descriptive aspect of the survey.
that 76% of women and 60% of men had a physical examination
- b) What inferences could be drawn from this survey?
that more women than men have yearly physicals
that over 50% of all men and women have yearly physicals

Homework p6 #2 - 24 even