**Steps in the Statistical Decision Making Process:**

**Observational Study –**

**Experimental Study –**

**Treatment Group –**

**Control Group –**

**Identify each of the following as observational or experimental. If it is experimental, determine the treatment group and control group.**

1. A researcher wants to know if a soil additive makes a fern grow more quickly. He grows one specimen in treated soil and one in untreated soil.
2. To find out whether car accidents are more likely on rainy days, a researcher records the weather conditions during 50 randomly selected accidents for the past year.
3. One hundred arthritis sufferers reported the severity of their symptoms daily for a month. Fifty of the subjects were given Epsom salt to bathe in at least every other day. At the end of the month, 30% of the subjects who used Epsom salt reported a decrease in their symptoms.
4. Does using a tanning bed at least twice a month affect the likelihood of developing skin diseases?

**Populations –**

**Samples –**

**Census -**

Market research is designed to discover what consumers want and what products they use. Give some examples of market research? What would be the population and sample for each.

Example 1: A truckload of apples arrives at an apple juice production plant. The plant’s quality control team selects three large buckets of apples from various locations within the truck. These apples are inspected carefully. Based on inspection results, the entire truckload is either accepted or rejected by the plant. Identify the population, sample, individuals, and variables.

Example 2: Identify the population and sample for each.

1. A survey of 1835 of American households found that 18% have a computer.

Population:

Sample:

1. The average weight of every 6th person entering the mall in a 3 hour period was 146 lbs.

Population:

Sample:

Example 3: You want to estimate the number of students in high school who ride the bus. Which sample is best:

1. 4 students in the hallway
2. All students in the marching band
3. 50 seniors at random
4. 100 students at random during lunch