A sample is a [ ] of the population. The [ ] selection of samples often determines [ ]. It is possible that one sample is more [ ] while other samples are simply not. Conclusions based on statistical samples can be little more than guesses, and some are reckless conclusions in life-or-death matters; in many cases, it all comes down to whether the sample selected is [ ] [ ]. In medicine, business, sports, science, and other fields, important decisions are based on statistical information drawn from [ ].

Statistics-There are two definitions but they are related.

1. The [ ] of the collection, organization, and interpretation of numerical data, especially the analysis of population characteristics by inference from sampling.

2. [ ] data.

On a higher level, the field of statistics concerns the [ ] and [ ] of describing and making [ ] about a population from a [ ].

An **inference** is a [ ] reached upon the basis of [ ] and reasoning.

A measure of the population that we are interested in is a [ ], a numerical value that represents the [ ] in a [ ].

We use different notation for [ ] statistics and [ ] parameters.

Sample: A [ ] of a set the **mean** of a sample population is [ ] standard deviation of a sample population is [ ]	Population: The [ ] set the mean of a population is [ ] standard deviation of a population is [ ]

A [ ] [ ] is a sample in which the [ ] of the people, objects, or items in the sample are [ ] to the [ ] of the population.

Sample Looks a lot like the population.

For sampling to be [ ], it must also produce [ ] measures.

over & over again different samples get the same Results.

[ ] refers to the [ ] to which a study or experiment, performed many times, would have similar results. When [ ] samples are used, there is often great [ ] and little [ ] among the statistics that are found. Meaning that it is [ ] reliable.

Small samples means less Reliable

[ ] [ ] is a measure showing how [ ] a sample reflects the [ ], with smaller sampling errors resulting from large samples and/or when the data clusters closely around the [ ].

In general, estimates of a population based on data from samples are more than estimates from samples.

In estimating the of a , a sample size than is recommended. In estimating , a sample is desirable.

is the to which the results obtained from a sample measure what they are intended to measure.

The validity of inferences made about a population depends greatly on the amount of or lack of , in sampling procedures.

A is a sample in which some members of the population have a chance of in the sample than others.

High levels of blood glucose are a strong predictor for developing diabetes. Blood glucose is typically tested after fasting overnight, and the test result is called a fasting glucose level. A doctor wants to determine the percentage of his patients who have high glucose levels. He reviewed the glucose test results for 25 patients to determine how many of them had a fasting glucose level greater than 100 mg/dL (milligrams per deciliter). He recorded each patient's fasting glucose level in a table,

Identify the population, parameter, sample, and statistic of interest in this situation, and then calculate the percent of patients in the sample with a fasting glucose level above 100 mg/dL.

Patient glucose levels in mg/dL				
99.9	105.4	131.8	79.7	66.6
116.7	111.5	98.1	86.4	76.4
105.8	107.0	95.7	87.6	99.1
75.4	106.2	87.6	89.2	72.4
58.9	86.8	66.0	53.6	88.1

Identify the population in this situation.

Identify the parameter in this situation.

Identify the sample in this situation.

Identify the statistic of interest in this situation.

Calculate the statistic of interest.

where x represents the number of patients with a fasting glucose level greater than 100 mg/dL and n represents the number of patients in the sample.

Note: It is important to recognize that this may be an estimate because the patients in sample may not be of the patients in the doctor's practice.