Lecture One Statistics Notes

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1 Objectives

1.1 Define statistics and statistical thinking

1.2 Explain the process of statistics

1.3 Distinguish between qualitative and quantitative variables

1.4 Determine the level of measurementof a variable

2 Defining statistics

2.1 Statistics

The science of collecting, organizing, summarizing, and analyzing information to draw conclusions or answer questions. In addition, statistics is about providing a measure of confidence in any conclusions.

2.2 Data

2.2.1 The information refferd to in the defenition is data

2.2.2 A fact or proposition used to draw a conclusion

2.2.3 May vary

2.2.4 One goal of statistics is to understand variablility in data

3 Explaining the process of statistics

3.1 A Population consists of the entire group of individuals to be studied.

3.2 A Sample is a subset of the population that is being studied.

3.3 An Individual is a person or object that is a member of the population being studied.

3.4 Descriptive Statistics consists of organizing and summarizing data and describing data through numerical summaries, tables, and graphs.

3.5 A Statistic is a numerical summary based on a sample.

3.6 Inferential Statistics uses methods that take results from a sample, extends them to the population, and measures the reliability of the result.

3.7 A Parameter is a numerical summary of a population.

4 Parameter versus Statistic

Example: Suppose the percentage of all students on our campus who have a job is 84.9%.: