

Chapter 3: Statistics

Section 3.1: Introduction to Statistics

Part I: Statistics Definitions

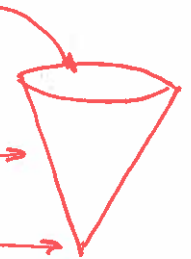
- What are statistics? STATISTICS IS THE ART OF DECISION MAKING BASED ON DATA IN THE FACE OF UNCERTAINTY.

- Population versus Sample versus Statistic

- POPULATION REFERS TO AN ENTIRE GROUP OF OBJECTS BEING STUDIED.

- SAMPLE REFERS TO A SUBSET OF A POPULATION.

- A STATISTIC REFERS TO A TRAIT OF THE SAMPLE.



- Parameter versus Statistic

- A PARAMETER IS A MEASURE OF AN ENTIRE POPULATION.

- A STATISTIC IS USED TO MEASURE A SUBSET OF THE POPULATION.

- Categorical Data versus Numerical Data

- NUMERICAL DATA IS MEASURED AND NUMBERED DATA.

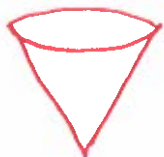
(TIME, DISTANCE, TEMPERATURE)

- CATEGORICAL DATA IS DATA IN GROUPS.

(POLITICAL AFFILIATIONS, GRADES)

Part II: Statistic Vocabulary Examples

1. 27 SUV's were randomly selected from a Ford plant in Detroit. 21% were found to have defective airbags.



What is the population? SUV'S IN FORD PLANT IN DETROIT.
What is the sample? 27 SUV'S
What is the statistic? 21% OF 27 SUV'S HAD DEFECTIVE AIRBAGS.

2. A study of Math 114 students was taken at the end of spring semester, 2012. A sample of 30 found 78% had a positive experience in the course.



What is the population? MATH 114 STUDENTS, SPRING OF 2012.
What is the sample? 30 MATH 114 STUDENTS.
What is the statistic? 78% OF 30 MATH 114 STUDENTS HAD A POSITIVE EXPERIENCE.

3. Which is a parameter and which is a statistic?

98% of RU students own a cell phone. STATISTIC

The yearly payroll of the players on the Washington Capitals is \$21,000,000. PARAMETER

82% of adults surveyed admit to drug use. STATISTIC

4. Identify each as categorical data or numerical data.

The times of the women's 200m run from the London Olympics. NUMERICAL

The eye colors of students in this class. CATEGORICAL

The social security numbers of the students in this class. CATEGORICAL