

Chapter 1 Notes

The Role of Statistics and the Data Analysis Process

Section 1.1 – Three Reasons to Study Statistics

Explore the given examples for each reason to study statistics, and then write an example of your own.

- **The First Reason: Being Informed**

- **The Second Reason: Making Informed Judgments**

- **The Third Reason: Evaluating Decisions That Affect Your Life**

Section 1.2 – The Nature and Role of Variability

Read the first line of the section. The science of statistics focuses on three things:

- 1.
- 2.
- 3.

What is it about variability that makes the study of statistics so important?

Section 1.3 – Statistics and the Data Analysis Process

What is the relationship between a population and a sample?

List and define the two branches of statistics:

- 1.
- 2.

- **The Data Analysis Process**

The steps in planning and conducting a statistical study are illustrated in Example 1.3. Briefly describe how each is carried out in the example:

1. Understanding the nature of the problem.
2. Deciding what to measure and how to measure it.
3. Data collection
4. Data summarization and preliminary analysis.
5. Formal data analysis.
6. Interpretation of results.

Homework: 3, 4, 6, 8

Section 1.4 – Types of Data and Some Simple Graphical Displays

- **Describing Data**

What is the relationship between variables or characteristics of a population and data?

Provide another name for the following types of data:

1. Categorical
2. Numerical

Give an example of each of the following types of data sets:

1. Univariate categorical
2. Univariate numerical
3. Bivariate or multivariate categorical
4. Bivariate or multivariate numerical

- **Two Types of Numerical Data**

Explain how to recognize numerical data that is continuous and give an example:

Explain how to recognize numerical data that is discrete and give an example:

- **Bar Charts**

When is it appropriate to use a bar chart?

- **Dotplots for Numerical Data**

When is it appropriate to use a dotplot?

Homework: 13, 14, 16, 20, 21, 24, 35, 36