

Day 1 Statistics Assignment: Introduction to Statistics

Name:

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Day: Thursday

Part A: Conceptual Understanding

1. What is Statistics?

In your own words, define statistics and explain why it is important in everyday life. Provide one real-world example of how statistics might be used.

Answer:

Statistics is the study of collecting, analyzing and interpreting data and drawing conclusion.

2. Population vs. Sample

a) Define population and sample in statistical terms. (1 line answer)

Population:

Population is the entire group of people.

Sample:

Sample is a subset of population.

b) Explain why we often use samples instead of studying entire populations.

Answer:

1. To reduce the cost of data collection.
2. Used, when a full census data cannot be taken.

3. Types of Statistics

Match each example with the correct type of statistics (Descriptive or Inferential):

Example	Type
The average height of students in your class is 5'6"	Descriptive
Based on a survey of 1,000 voters, we predict the election outcome	inferential
75% of customers rated our service as "excellent"	Descriptive
A study concludes that a new drug is effective for the general population	inferential

4. Types of Data / Attribute

Classify each variable as Qualitative or Quantitative:

Variable	Type
Eye color	Qualitative
Number of siblings	Quantitative
Brand of smartphone	Qualitative
Temperature in Celsius	Quantitative
Student ID number	Quantitative
Height in inches	Quantitative

6. Data Classification Challenge

For each research question, identify:

- Whether you would use descriptive or inferential statistics
- What type of data (qualitative/quantitative) you're dealing with
- Whether you're working with a population or sample

a) Research Question: "What is the most popular pizza topping among customers at Mario's Pizza last month?"

- Type of statistics: Descriptive
- Type of data: Qualitative
- Population or Sample: Population

b) Research Question: "Do students who study more than 3 hours daily perform better on standardized tests nationwide?"

- Type of statistics:
- Type of data:
- Population or Sample:

c) Research Question: "What was the average temperature in Karachi during July 2024?"

- Type of statistics:
- Type of data:
- Population or Sample: