

What is Statistics?

Introduction to Statistics
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Definitions:

- **Statistics:**
Statistics is the science of *collecting data, analyzing data* and *drawing conclusions*.

Example: Basketball Players

Player	Games	Minutes	Points	Rebounds	FG%
Bob	34	32.7	24	7.6	0.552
Andy	36	31.5	21	8.4	0.465
Larry	30	33.0	18	5.6	0.493
Michael	31	35.1	29	6.1	0.422

- **Descriptive Statistics:**

Descriptive Statistics is the process of *collecting data, summarizing it, and describing its characteristics*.

That is, *using data to describe something*.

- **Inferential Statistics:**

Inferential Statistics is *the process of selecting a sample and using its information to make a generalization about a characteristic of a population*.

That is, *using data to make inference or decisions*

- **Populations** - Collections of *all possible observations* of a specific characteristic of interest

- **Samples** - *A portion of the population* under study

Examples of using samples instead of populations:

- Interested in the average length of life of a light bulb.
No use if test all the bulbs.
- Forecasting the winner of an election
Population is too big; people change their minds

Exercise:

The CEO of a major business organization **surveys 100 members** of her staff concerning their **level of satisfaction** with their current position. She finds the following.

19%	Very Satisfied
32%	Satisfied
28%	Neutral
13%	Dissatisfied
8%	Very Dissatisfied

Which of the following is **an inferential statement** concerning the data?

- a. More than half of the workers surveyed were at least satisfied with their current positions.
- b. Eight of the 100 workers surveyed responded that they were very dissatisfied with their current position.
- c. Of the workers surveyed, more were very satisfied than were very dissatisfied.
- d. Very few of the workers in the organization are very dissatisfied with their current positions.

Answer: _____

What is population of the above study?

What is sample of the above study?