

Statistics

Statistics - probability

uncertainty

Math.

add subtract multiply divide

Square root

COUNT

think.

Variability, Randomness + Uncertainty

- how to measure them
- how to make decisions when confronted by them.

Daily rainfall.

number of deer on campus

number of chocolate chips in a cookie

Is a new drug better than an old one - at treating a disease

How to recognize a well-designed trial.

will the student sitting next to you say yes if you ask them on a date?

Should you ask them?

Probability

- theoretical aspects of randomness

Inference

- learning from data, taking randomness into account
-

Descriptive Statistics

- describe the data you have.

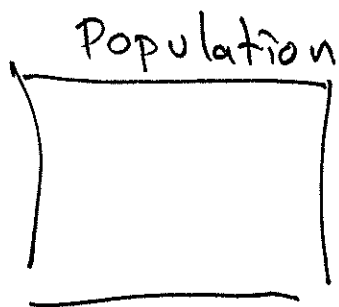
no uncertainty.

17% are sociology majors.

Inferential Statistics

- making educated guesses based on data

is the % of sociology majors taking AMS5 representative of the whole campus?



the entire set of interest

- all UCSC students
- all deer on campus

Sample. - the part of the population about which we have collected data.

What your population is, and what your sample is, depends on the question you are asking.

Is the sample representative of the population?

If not, we call it biased.

9	Fresh.	5%
105	Soph.	59%
48	Junior	27%
17	Seniors	9%

Population.

UCSC students - biased.

All students who have taken AMS 5 - representative.

Parameter.

- what we're trying to learn the unknown quantity of interest.

Statistic.

- a value computed from a sample

- using these values to estimate parameters

Data Types.

