

Stat 401 B – Lecture 1

First Day

- Data Sheet – fill out and bring to lab tomorrow
- Syllabus – go over

1

The Big Picture

- What is statistics all about?

2

The Big Picture

- Statistics is about variability!
 - Recognizing variability.
 - Quantifying variability.
 - Explaining variability.

3

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Statistical Thinking

- An appreciation of uncertainty and variability and their impact on decision making.
- Using the scientific method when approaching issues and problems.

4

Statistical Thinking

- Starts with a question –
- Did cars and trucks made in 2004 meet the Corporate Average Fuel Economy (CAFE) standard?

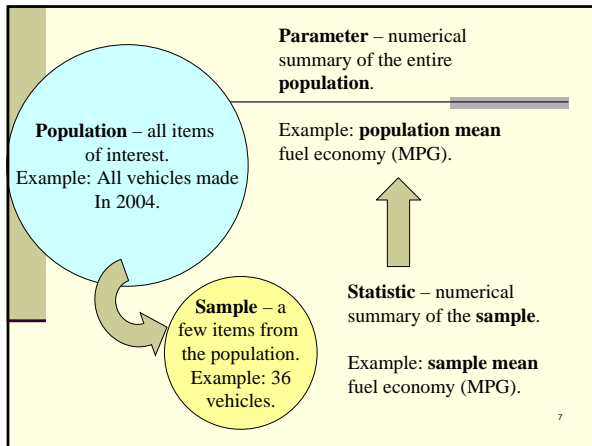
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Statistical Thinking

- What data would help us answer this question?

6

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Sampling

- Random selection from the population of interest.
- The lab tomorrow will look at what happens with “purposeful” sampling and random sampling.

A Word of Caution

- Statistical methods are very good at quantifying uncertainty introduced by random sampling.
- Statistics doesn't help much if the population changes with time.

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Political Opinion Poll

- 1000 randomly selected likely voters are asked – “If the election were held today, for whom would you vote for President?”

10

Political Opinion Poll

- The sample proportion indicating they would vote for McCain or Obama is a pretty good indication (within 3 percentage points) of the true proportion of the population of likely voters.

11

Political Opinion Poll

- Does that mean a poll taken today will predict the outcome in November?

12
