

STA13-B
Elementary Statistics
Fall 2007

Lecture 16

Instructor: Katie Pollard

Announcements

- If you are an Open Campus student, please come see me after class.
- Homework 5 is due Thursday 11/8.

Chapter 8

- Statistic
- Sampling variability

Statistics

Any quantity computed from (i.e. a function of) observed data is called a **statistic**.

Examples:

- Sample mean
- Sample standard deviation
- z-scores
- Sample proportion (binary data)

Sampling Variability

Observed statistics depend on the sample:

- The precise value of a statistic will change from one sample to another depending on which experimental units are sampled.
- We would like to know how much it changes or its **sampling variability**.
- This tells us how close the observed value is to the true value in the whole population.

Sampling Distribution

If the experiment is repeated many times, the observed values of a statistic across samples form a single **sample of statistics**.

- The distribution of all values of a statistic is called its **sampling distribution**.
- This distribution has parameters (mean, standard deviation, etc) that explain its shape - just like any other distribution.

Problems on the Board