

Math 453

Mathematical Statistics

Introductions

- ▶ San Bernardino, CA
- ▶ CSU Monterey Bay
 - ▶ BS Biology
- ▶ San Diego State University
 - ▶ Master's in Public Health
- ▶ UC Riverside
 - ▶ PhD in Applied Statistics

Introductions

- ▶ Name
- ▶ Year
- ▶ Major
- ▶ Fun Fact
- ▶ Career Goal

Learning Objectives

- ▶ Define and identify population, sample, parameter, and statistics
- ▶ Define and identify different variable types (quantitative and categorical)
- ▶ Define concept of random samples and sampling methods

Website and Syllabus

Fundamental of Statistics

Fundamental of Statistics

- ▶ Observational Unit
- ▶ Variable
 - ▶ Types of Variables
 - ▶ Quantitative
 - ▶ Categorical
 - ▶ Roles of Variables
 - ▶ Predictors
 - ▶ Outcome

Observational Unit

Type of Variable - Quantitative

Type of Variable - Qualitative

Predictor Variables

Outcomes

Fundamental of Statistical Inference

Fundamental of Statistical Inference

► Categorical Variables

► Proportions

► p or π

► \hat{p}

► Continuous Variables

► Means or Averages

► μ

► $\hat{\mu}$ or \bar{X}

► Variances

► σ^2

► $\hat{\sigma}^2$ or s^2

Sampling Techniques

Sampling Techniques

- ▶ Simple Random Sampling
- ▶ Stratified Sampling
- ▶ Cluster Sampling
- ▶ Multistage Sampling