Stat 201: Statistics I
Final Review

Metropolitan
State University

About the final exam

- Available on MyStatLab following class on 12/2
- Due by end of day on 12/9
- 23 questions, 100 points
    - 5 questions, 18 points from pre midterm
    - 18 questions, 82 points from post midterm
- Every question on exam has been a homework question, though the details will likely be different
- Time limit: 4 hours, must be completed in one sitting
- Can use any resource (book, notes, internet), except other people

Pre midterm

- Calculate probabilities:
    - From a contingency table
    - Addition rule
    - Multiplication rule
- Calculate summary statistics:
    - Mean
    - Median
    - etc.
- Find probability from normal distribution (critical values)
- Find probability from binomial distribution

Week 7

- Identify parameters of sampling distributions
- Calculate probabilities of sample statistics
- Construct confidence intervals for means or proportions
- Correctly interpret a confidence interval

Week 8

- Calculate sample sizes for given scenarios
- Hypothesis testing:
  - Identify the null and alternative hypotheses
  - Calculate a test statistic and p-value
  - Make a decision based on p-value and significance level
  - State conclusion in terms of research question
- Understand type I and type II errors

Week 9

- Test a claim about a population mean from summary statistics or sample data
- Test a claim about two population means using two independent samples
- Test a claim about the difference between populations using samples of paired data

Week 10

- Test a claim about two population proportions
- Test a claim about population proportion
- Test the fit of a sample frequency distribution to an expected distribution
- Test independence of two factors using a sample contingency table

Week 11

- Plot paired data in a scatterplot
- Calculate correlation coefficient of a sample
- Test whether population correlation parameter ρ is zero or not
- Calculate regression equation from sample
- Make predictions for the response variable given a predictor value and regression results