STAT 301  Final Exam Preparation   Fall 2014

Logistics:
- Wed Dec 10, 7:10-10am in 38-123
  - Exam will be less than twice as long as a midterm
  - Notice the earlier start (7:10am) than usual
  - Notice the different classroom (38-123) than usual
- Open-book, open-notes
  - With exception of a small, conceptual, multiple-choice section at beginning
- Bring calculator
- No computer use (except for small, conceptual, multiple-choice section at beginning)
- Partially cumulative
  - Roughly two-thirds on material since last exam
    1. Mon Nov 10 – Wed Dec 3
    2. HW13 – 17
    3. Quizzes 17 – 24
  - Roughly one-third on (bigger ideas from) earlier material
- Extra office hours
  - Mon Dec 8, 9-10am, 1-2pm
  - Tues Dec 9, 10-11am
- Materials available online
  - This (and previous) exam preparation document
  - Midterm exam solutions
  - Day-by-day notes
  - HW, quiz solutions

Overview (since last exam):
We have analyzed studies that involve a quantitative response variable, both with comparing two groups and a single quantitative variable. We have studied graphical and numerical summaries for such data. We have again used inference methods based on simulation/randomization and also approximate methods based on the t-distribution.

Outline (since last exam):
- Dotplot, histogram, boxplot; center, variability, shape, symmetric, skewed, outliers
- Mean, median, standard deviation, inter-quartile range; resistance; five-number summary, outlier test
- Sampling distribution of sample mean, Central Limit Theorem for Sample Mean, standard error of sample mean
- One-sample t-interval, one-sample t-test, prediction interval
- Simulating randomization test for comparing two groups with quantitative response
- Approximate and exact randomization distribution, approximate and exact p-value
- Two-sample t-test for comparing means
- Two-sample t-interval for difference in population means
- Matched pairs design, randomization test for paired data, paired t-test, paired t-interval
- Sign test, McNemar’s test
Advice:

- Organize notes for efficient retrieval of information/formulas
- Don’t plan to use text, notes too much
  - Prepare as if exam were closed book/notes
  - Focus on understanding, not memorization
- Be prepared to think/explain/interpret
  - Do not just plug into formulas
  - Be ready to explain process of how you would do calculations
- Take advantage of information provided
  - Perhaps including output
- Relate conclusions to context
- Practice
  - Work through solved examples at end of text chapters
  - Re-work in-class investigations, examples
  - Re-work HW questions
  - Re-work quiz questions
  - Re-work previous exam questions
  - Work through sample exam questions