Test Review 1

Test 1 is on Tuesday, February 23, 11:20-13:10 in 212 McGregory Hall

Stop by my office if you have questions.

When you study these things, it might help to physically write down things.

Making flash cards helps.

Understand the homework that was assigned.

Some possibly helpful formulas will be given to you on the test.

Things you should know:

- Experiment and observational study.
  - treatment group
  - control group
  - a placebo effect
  - the explanatory variable
  - the response variable
  - a confounding variable
  - historical control

- Bias
  - Know how to distinguish the different types of biases.
  - selection bias
  - nonresponse bias
  - response bias
  - Convenience or haphazard sample

- Simpsons Paradox

- Histograms
  - class intervals
  - skewness

- Mean, median, and $SD$
  - Know how to find these if given a list of data.
  - Know how mean and median relate in a skewed histogram.

- Describing numbers
  - dotplot
  - stem-and-leaf plot
  - five number summary
    * min, first (lower) quartile, median, third (upper) quartile, max
  * Know how these numbers divide up your data set.
  - boxplot

- The Empirical Rule

- Standard normal curve
  - standard units
  - Know how to use the normal table. (A table will be given to you for the test.)
  - find percentages using the table

- Percentiles
  - Know how to find percentiles.
  - Ex: Find the 10th percentile of a given normal distribution.

- Correlation and regressions
  - scatterplot
  - football
  - correlation coefficient $r$. Know how to interpret it.
  - $SD$ line
  - regression line.
    * Know how to find this line given relevant information.
    * Know how to predict $y$-values using this line.

- Probability
  - sample space
  - The NOT Rule (You should know the formula.)
– The Multiplication Rule (You should know the formula.)
  * independence
– The Addition Rule (You should know the formula.)
  * mutually exclusive
– binomial process
– binomial coefficient
– binomial formula

• Know about parameter and statistic. Be able to determine these if given a scenario.

• Know what a census is.

• Be familiar with the reading assignments posted on the homework webpages, and be prepared to answer any of the questions on the exam.