Preparing for Test #2

Tuesday, November 8
Covers chapters pp. 122.–232

Outline of Major Elements:

Terms/things you should know: stemplots, side-by-side stemplots, z-score, empirical rule, population, sample, sampling frame, parameter, statistic, sampling distribution, simple random sample, bias, sampling errors, nonsampling errors, sampling variability, process, Bernoulli process, randomization distribution, binomial distribution.

Symbols you should know: $\mu, \bar{x}, \hat{p}, \pi, \sigma$, s

Concepts/Skills:

- Meaning of "spread" or "variability" of a distribution
- Purpose of "standardizing" observations (z-score) and how to interpret
- Transformations; effects of linear and log transformations
- What the empirical rule says and when it applies

- Properties of mean, median (least squares principle)
- Randomization test, "logic" of the randomization distribution
- Scope of conclusions that you can draw from the type of study (still need to be able to Identify whether or not you have an experiment)
- What does the p-value tell you?

- Advantage of random sampling
- Meaning of "unbiased sampling method"
- What affects the amount of sampling variability
- Identify whether observations can be modeled by a Bernoulli process
- How to calculate:

    binomial probabilities from the binomial distribution formula as well as with technology, including cumulative and "at least" probabilities

    binomial expected value and standard deviation (and how to interpret "expected value")

- null and alternative hypotheses about a parameter
- In symbols and in words, one-sided vs. two-sided