MATH 210 – Study Guide - Test #1
(revised 2/20/07)

Graphic Representation of Data

Construct and interpret (symmetric, skewed, peaks, gaps)

- Histograms
- Stemplots (regular, stem splitting, back-to-back)
- Boxplots (regular, modified, back-to-back)

Descriptive Statistics

Measures of Center - mean, median
Measures of Variation - standard deviation, IQR
(Which measures of center and variation go together?)
Which of these measures are resistant measures? (and resistant to what?)
Relation of mean and median in skewed and symmetric distributions.
Compute mean, variance, std deviation, median, Q_1, Q_3, range, IQR, 5-number summary.
Identify outliers using IQR Test (i.e., "1.5 IQR Criterion").
Be familiar with graphs and descriptive statistics output from our statistical software.

Normal Distributions

Construct and interpret ranges using the "68-95-99.7 Rule"
Compute z-score for a particular value in a distribution.
What does the z-score for a particular data value represent?
What proportion of the values fall between A and B? above B? below A?
Compute percentiles in a normal distribution.
Use z-scores to compare values chosen from two different normal distributions.

Normal Quantile Plots

Identify normally distributed data.
Identify skewed distributions and distributions which are symmetric but not normal.
Identify outliers in normal data.

Sampling Terminology

Population, sampling frame, sample, observation, Simple Random Sample (SRS)

Issues in Sampling

Choosing an SRS using a Random Digit Table (RDT).
Identify sources of bias in a sampling procedure.

Randomized Comparative Experiments (RCEs)

Know difference between an experiment and an observational study.
Describe how to set up an RCE (i.e., randomization, control and treatment groups).
Why do we use randomization, control groups, and placebos?

This sheet is available on the course web page under "Sample Tests"