Concepts on Test #2 – Cañada M200 F12

Chapter 3
Descriptive Statistics
  Mean, Median, Mode, Variance, Std. Dev.
  Correct notation
  Correct Round-Off (1 more decimal place than original data)
5 Number Summary
  Minimum, 1st Quartile, Median, 3rd Quartile, Maximum
  Indicator Function for finding Quartiles
Box Plot
  Scaled (separate from the boxplot) & Correctly Drawn/Labeled
  Discuss the meaning of the shape
Skew of the Data
  Symmetric, Right & Left
  Visual Representation
  Mean, Median & Mode Comparison
Potential Outliers
  IQR & 1.5IQR from Q_1 & Q_3
Usual Values
  Min & Max via standard deviation & mean
Empirical Rule
  68%, 95%, 99.7% & relation to z-score
*Finding a Z-score (standardizing)
  Value minus mean all divided by standard deviation

Chapter 4
3 Ways to Calculate Probability
  Relative Frequency & Classic Probability being 2 most important
Independent vs Dependent Events
  Unions & the Addition Rule
  Intersections & the Multiplication Rule
Conditional Probability
Complements
Finding Probability Via
  Contingency Tables
  Relative Frequency Tables
Counting Rules
  Multiplication or Counting Rule
  Factorial
  Permutations – Arrangements, Sequences **ORDER MATTERS**
  Combination – Groups ORDER **DOESN'T** MATTER

Chapter 5
Discrete Probability Distributions
  Using Classic Probability to get PDF
  Know sum of all probability is 1

Know that probability is between 0 & 1
  P(x) = 0 means event can't happen
  P(x) =1 means only one way an event can happen
Know mean & standard deviation calculated from pdf (like ch. 2 from a frequency table)
Probability Histograms
  Relate to Relative Frequency Histogram from Ch. 2
  Know sum of area is 1
  Know height of bars equals probability
  Know width of bars is always 1 therefore area in each bar equals probability
  Know that bars center over random variable
Finding Probability of an Event, Union of Events, Series of Events etc.

Chapter 5
Binomial Probability Distribution Function
  The 4 assumptions of binomial
      o 2 possible outcomes
      o fixed # of trials
      o constant probability for success
      o each is trial is independent

You need to be able to identify a binomial by recognizing these characteristics.

The "Defining Formula"/Distribution Function
  What are n, x, p, & q
  How to find probabilities for a binomially distributed random variable
    Using formula set up
    Using your calculator
    $P(X=x)$, $P(X<x)$, $P(X>x)$, $P(X\leq x)$, $P(X\geq x)$, $P(x<X<x)$
  Mean & Standard Deviation using n, p & q

Chapter 6
How to Standardize a Non-Standard Normal Random Variable *(Z-score)
  Relation to Empirical Rule
Finding probabilities using calculator
Finding Probability of a Normal Random Variable (Std. or Not)
  How to draw a probability on a normal curve
  Using probability notation to write your probabilities
  On a calculator
  How to set up for a left-tail look up, in a table (or on a calculator)
Inverse Normal Distribution
  Critical Values
  Percentiles Related
Continuous Uniform Distribution
  Finding the probability
  Finding area under the density curve
  Using area under curve to give probabilities