Review for MAJOR TEST 2
Please note: "Utilizing Excel" indicates to use Excel and/or associated statistical software as necessary to work the problems.

Chapter 6--Probability

Know probability rules, terms, concepts, as discussed in class and in reading.

Given an incomplete contingency table, fill in empty cells, and compute joint probability, compound probability, find conditional probability and marginal probabilities.

Given a word problem of selecting two people, or two playing cards, or two widgets, etc., find probabilities in reference to this problem.

Given a word problem of selecting three people, or three playing cards, or three widgets, etc., find probabilities in reference to this problem.

Either create a tree diagram or table in order to find probabilities.

Refer to your homework problems and also concentrate on problems such as 6.60, 6.62, 6.64, 6.66, if they were not assigned as homework.

Know difference between with replacement and without replacement.

Chapter 7---Random Variables and Discrete Probability Distributions

Know the conditions for an experiment to be a binomial distribution or a poisson distribution.

Given an experiment, can you tell which is a valid binomial or poisson? And why?

Utilizing Excel, compute probabilities of a success for a binomial and probabilities of a success for a poisson.

Find Expected Value of a discrete probability distribution.

Recognize a valid discrete probability distribution and why it is, or is not, valid.

What is the mean and standard deviation of a binomial distribution?

Chapter 8---Continuous Probability Distributions

Know definition of a normally distributed random variable.

Know definition of a standard normal random variable.

Find probabilities of normally distributed random variable(s), either of x, x bar, or p hat, utilizing Excel.

Find probabilities of Z value(s) by utilizing Excel.

Given a real-world scenario, with a normally distributed random variable, can you find the associated x, x bar, or p hat if you know a real-world area.

Given a real-world scenario, with a normally distributed random variable, can you find the associated area if you know a real-world x, x bar, or p hat.

Chapter 9---Sampling Distributions

Find probabilities of a sample mean, and a sample proportion, utilizing Excel.

Know the difference between finding probabilities of the following: P(X), P(X Bar), and P(p hat).

Refer to your homework problems and also concentrate 9.18, 9.20, 9.26, 9.28, 9.36, 9.42 if these problems were not assigned as homework.

Chapter 10: Confidence Interval Estimator of μ.

Utilizing Excel, estimate the population mean when the population standard deviation is known.

What is a confidence level?

What is a lower confidence limit (LCL)?

What is an upper confidence limit (UCL)?

What is a point estimate?

What is the standard error of the mean?

What is ‘alpha’ and what does ‘alpha’ represent within the concept of confidence interval estimators.

Chapter 11: Introduction to Hypothesis Testing

Utilizing Excel, perform the appropriate hypothesis test.

Know how to formulate the NULL and ALTERNATIVE hypotheses.

What does ‘alpha’ represent within the process of hypothesis testing?

What is P(Type I Error)?

Find Critical Value(s).

What does a negative critical value indicate?

What does a positive critical value indicate?

What do two-tailed critical values indicate?

What is a rejection region in a hypothesis test?

What is a p-value?

Know how to state a valid conclusion after performing a hypothesis test.

What is a test statistic?

How do you find a test statistic, manually and utilizing Excel?

Know how to ‘reject the null’ or ‘do not reject the null’ using both the:
1) Critical Value Approach
2) P Value Approach