

## Outline of Math 142 Test I

### Chapter 10 -- Statistics

1. Understand different **types of graphs** and what type of information is best displayed by each. Stem and leaf, bar graph, line graph, circle graph, pictograph, and scatter plot. Summary at the end of section 10.1.
2. Understand and discuss ways in which **graphs and statistics can be misleading**. See section 10.2 Lecture Notes for a summary of ways used to make graphs misleading.
3. **Measures of central tendency** – mean, median, and mode. Create a **Box and Whisker Plot**, including being able to calculate the “fence” to determine if there are any outliers. Understand and apply: **standard deviation, z-score, percentile, and normal distribution**.

### Chapter 11 – Probability

1. Understand and apply the **basic vocabulary and definitions of probability**. Understand theoretical probability and experimental probability.
2. Be able to use probability tree diagrams and the Fundamental Counting Property to find the **probability of more complex situations that involve successive events**. Summary on pages 539-40.  
Pascal’s triangle can be used when counting any event in which only two equally likely possibilities exist. See end of section 11.2 and online lecture notes for information about using Pascal’s triangle.
3. Use the **Fundamental Counting Property** to count the number of **permutations**. [Put a blank for each decision to be made. Fill each blank with the number of choices possible. Multiply to find the total number of outcomes.] To determine the number of **combinations**, find the permutations and divide by “the number in the group” factorial. Also be familiar with factorial notation and how to use it to calculate permutations and combinations using the formulas in the text.
4. There will be a series of short questions on **simulations, expected value, odds, and conditional probabilities**.

**Review using your lecture notes, quizzes, and the vocabulary lists in the chapter reviews. Do problems in the Chapter reviews, check your answers with those in the back of the text.**

**Take the chapter tests as though they are practice tests. Do not use your text to help answer any of the questions. After doing as many of the problems as possible, check your answers with those in the back of the text. Use this to help evaluate what topics you need to study further.**