

Math 102  
Exam 4 Review Sheet

**Section 14.1** Organizing and Visualizing Data

- Know the definitions of population, data, and sample, and be able to identify what they are for a given example.
- Understand basic experimental design, and be able to identify different types of bias (selection bias, leading question bias, and non-response bias)
- Understand and be able to both use and construct frequency tables, relative frequency tables, and both frequency and relative frequency histograms (bar graphs).
- Understand how to group data into classes and make tables and histograms based on grouped data.
- be able to make stem and leaf displays for a data set.
- Be able to interpret data given by table and histograms.

**Section 14.2** Measures of Central Tendency

- Understand and be able to compute the mean, median, mode, and midrange of a set of data.
- Be able to compute the mean, median, mode, and midrange of a set of data given by a frequency table.
- Be able to find the 5 number summary of a data set (min, Q1, Median, Q3, max), and draw its box and whisker plot.
- Understand which measures of center are effected by outliers, and be able to discuss the different aspects of a data set that are described by the different measures of center.
- Be able to use measures of center to solve application problems.

**Section 14.3** Measures of Dispersion

- Understand and be able to compute the range, standard deviation, and coefficient of variation for data that is listed as individual data points, or data that is given in a frequency table.
- Be able to apply the coefficient of variation to compare the volatility of different data sets.

**Section 14.4** The Normal Distribution

- Memorize the properties of a Normal Distribution, be able to draw the graph of a Normal Distribution and locate the mean and standard deviation on the graph.
- Understand the 68%-95%-99.7% Rule.
- Be able to compute areas under a normal curve using  $z$ -scores and a  $z$ -table. Also be able to compute the  $z$ -score of a data value given the mean and standard deviation of the population.
- Be able to work backwards from a  $z$ -score to find the related raw data score, and be able to work backwards from a percentage to find the related  $z$ -score.
- Be able to compare data and solve application problems by using  $z$ -scores.

**Practice Problems:**

Chapter Review page 836-837 # 1 - 4, 5, 6, 8, 9, 10, 11, 13, 14, 15

Chapter Test page 837 # 5, 7, 8, 9, 11, 14, 15