Midterm 1

**Complete coverage:** You should be able to solve the exercises that have been assigned – whether “Practice Exercises,” or homework that was collected. See the course calendar and listing of assignments.

**Partial list of coverage:** You should be able to do the following. (Grade levels are associated with each.)

- **B** Identify and distinguish between units and variables in a description of data that is collected. (Use the “template sentence” to confirm.)
- **B** Demonstrate how statistical information is represented in a data table.
- **C** Distinguish between categorical and quantitative variables.
- **B** Distinguish between discrete and continuous variables.
- **C** Compute frequencies and relative frequencies for discrete data.
- **C** Interpret percentiles – exactly as specified by the instructor. This is a NO TOLERANCE FOR HEDGING = NO PARTIAL CREDIT issue. Do it right – exactly right – or get no credit for this.
- **A** Distinguish between the functionality of PERCENTILE.EXC and PERCENTRANK.EXC. Know how to use these functions to obtain percentiles and percentile ranks from a data set.
- **A** Know when percentiles are, and are not, a useful way to summarize data.
- **C** Understand what each value in the 5 number summary represents. State the 5 number summary, in proper order.
- **C** Obtain values for the 5 number summary from a boxplot.
- **C** Compute the Range and Interquartile Range (IQR).
- **C** Understand which statistics measure “center” (of a distribution) and which measure “variability.”
- **C** Use the 68-95… rule to give a rough suggestion of where data lie relative to mean and standard deviation.
- **C** Implement the Range Rule of Thumb to guess a standard deviation when the range is given.
- **B** Guess a standard deviation by reasonably guessing the range from a description of data.
- **B** See how the 95 part of the 68-95… rule relates to the Range Rule of Thumb.
- **A** Make finer distinctions comparing data sets on variability (even when ranges are quite similar) using standard deviation as a more reasonable measure of variability.
- **C** Identify an outlier.
- **C** Identify basic distribution shapes from histograms.
- **B** Identify basic distribution shapes from boxplots.
- **B** Understand how the mean vs. median vs. mode comparisons generally relate to shape.
- **C** Compute the mean of a probability distribution (a table of values and associated probabilities) for a discrete variable.
- **B** Compute the standard deviation of a probability distribution (a small table) for a discrete variable.
- **C** Determine probabilities of outcomes expressed as “greater than…,” “fewer than…,” “at least…,” and “at most.”
- **A** Identify values from a probability distribution as referring to all possible ways a unit can be selected.