STATISTICS
REVIEW SHEET FOR EXAM #2 (50 pts)

This is a 2-part test. Part 1 is closed-note. Part 2 is open-note. For Part 2, you may use your calculator and 8.5 x 11 inch paper with handwritten notes—both sides. You may NOT use your mobile device.

Chapter 6: Measures of Central Tendency

- Be able to define *mean, median* and *mode*.
- Be able to calculate mean, median, and mode based on a *frequency distribution.*
- Understand the properties and advantages and disadvantages of the use of each measure.
- Know how to locate the median for *odd* and *even* numbers of scores in a distribution.

Chapter 7: Measures of Dispersion

- Know the meaning of and equation for *range*.
- What kind of distribution is the range good for describing?
- What is *average deviation*?
- Be able to define *variance* in your own words.
- Be able to apply the *definitional formula* for calculating variance.
- Be able to apply the *computational formula* for calculating variance.
- What is *standard deviation*? Why is its use in describing a distribution preferred over that of variance?
- **Know how to calculate the standard deviation using both the definitional and computational formulas. Know how to do this, as practiced in class—using rows and columns. You will need to perform to complete manual calculations on this test. I will want to see complete calculations, including rows and columns in your work.**
- Explain what a *z score* (also known as a *standard score*) is and why it is useful.
- Know how to convert any sample *raw score* into a z or standard score.
- Know how to convert a z score back to a raw score.
- Be able to come up with your own examples of problems.

Chapter 8: Probability

- What is *probability*? Explain in your own words.
- How does probability feature in your own life? Provide an example.
- Distinguish between *theoretical probability*, *real-world probability*, and *subjective probability*. What are the *addition* and *multiplication* rules for probability? How are they used?
- Be able to express these symbolically and calculate.
- What is *conditional probability*? Provide an example.
- Be able to calculate conditional probability based on a *binomial probability table*.
- Be able to define an *experiment*, *sample space*, and *event*.
- Define *independent* and *non-independent* events. Provide examples.
- Define each of the different, subjective ways (*probability=certainty fallacy, gambler's fallacy and availability heuristic*) that people think about and distort probability. Come up with an original example for each.
- Be able to come up with your own examples of problems.