## Mth 102 – General Education Statistics – Practice Exam 2

NOTE: This exam should not be taken as a complete list of possible problems. It is merely intended to be an example of the length and difficulty level of the regular exam. To best utilize it as a *practice* exam, give yourself 55 minutes with no distractions. Try to emulate the classroom environment as much as possible.

- 1. In each case, state which measure of center (mean, median, or mode) is most appropriate as a measure of center. As usual, you must justify your answer to receive credit.
  - a. Scores on this exam, if those scores have a reasonably symmetric distribution.
  - b. Favorite color of students in this class.
  - c. Salaries of National Football League players.
- 2. Suppose the mean on an exam is 68, while the median is 75. What is the shape (symmetric, skewed left, or skewed right) of the distribution of the exam scores? You must justify your answer to receive credit.
- 3. The data below show the length of honeymoons for a sample of 12 newlyweds.

5	14	7	10	6	8
12	9	10	9	7	11

- a. Compute  $\sum x$ .
- b. Compute  $\sum x^2$ .

4. Use parts a and b from problem 3 to find the sample standard deviation of the lengths of the 12 honeymoons.

5. The table below shows the temperature in Elgin, IL for the month of September, 2005. Find the five-number summary and draw a modified boxplot. Do not use your calculator to find these values. (Note that the values are already arranged in ascending order and that there are 31 days in September.)

74	75	76	79	80	81	83	83	84	85	85
86	86	86	86	87	87	87	87	88	88	89
89	89	91	91	92	92	93	97	102		

6. Given the two distributions shown below, which set of data (A or B) his a higher standard deviation?



7. The mean IQ for adults is approximately 100, with a standard deviation of about 15. Between which two values will almost all adult IQ scores fall between?

8. Why is the *standard deviation* a better measure of variation than the *range*? Please explain in your own words and/or draw a picture if it would help.

9. Suppose your ACT test scores come back informing you that you are in the 83<sup>rd</sup> percentile. What does that mean?

10. If the mean IQ is 100, and the standard deviation is 15, find the <u>standardized score</u> for an IQ of 112. <u>Interpret your results</u>. (By that, I mean *explain* what the standardized score *represents*.)

11. The numbers of home runs that Sammy Sosa hit in the first 14 years of his major league baseball career are listed below.

15	10	8	33	25	36	40
36	66	63	50	64	49	40

- a. Find the mean. (Round to the nearest whole number.)
- b. Find the median.
- c. Find the standard deviation. (Round to the nearest tenth.)

12. Based on the boxplot below, describe the distribution of the data. (symmetric, left skewed, or right skewed) You must justify your answer to receive credit.

