You MUST use good notation and show appropriate work.

Math 102 (Section 15.2)

Name _____

15.2 Measures of Central Tendency

1. Let data set A = {5, 6, 8, 8, 10, 11} and data set B={2, 4, 8, 8, 9, 17}. Determine the mean, median and mode for each of the data sets. What do you notice? Are the two data sets equal?

2. Joe scored 72, 76, and 80 on 3 hour exams. (a) What did Joe score on the fourth exam in order to raise his mean score to 81? (b) What was Joe's median score on the four exams? (c) Would Joe prefer that his instructor use the median rather than the mean when determining Joe's grade in the course?

3. Mary had a mean score of 78 on 5 exams. What scores did Mary get on exam number 6 if her new mean became 76?

4. Calculate the mean and median for the following grouped data.

x	6	8	10	14
f	5	8	9	4

(x is the data value and f is the frequency)

mean _____

median _____

5. The average number of hours students worked per week is 15 as reported by a recent MSUM survey. There are several questions that need to be answered before this statement can be interpreted correctly. What are those questions?

6. Construct a box-and-whisker plot for the following data set.

21, 24, 15, 45, 18, 31, 26, 41, 23, 18, 44, 27, 36, 21, 43

7. A small business with 12 employees reports an "average" salary of $25,000. Some additional employees will be hired. In each of the following cases determine the new "average" salary if average refers to i) mean, ii) median, iii, mode.

   a) Suppose four new employees are hired with salaries of $15,000, $25,000, $25,000 and $30,000.

   b) Suppose three new employees are hired at salaries of $20,000, $20,000, and $25,000.

   c) Suppose two new employees are hired at salaries of $20,000 and $25,000.

8. A student has a 78% average on their first 3 exams. How much does a student need to get on their fourth exam to raise their average to an 80% if each is worth the same amount?