Math 2311

EMCF Homework 1 (Sections 1.1-1.4)

Instructions

- Homework will NOT be accepted through email or in person. Homework must be submitted through CourseWare BEFORE the deadline.
- Submit this assignment at http://www.casa.uh.edu under "EMCF" and choose **ehw1**.

In problems 1-4, determine whether the variable is categorical or quantitative. If it is quantitative, indicate if it is continuous or discrete.

1. Score on a quiz for a class (out of 100 points).
   A. Categorical
   B. Quantitative, continuous
   C. Quantitative, discrete

2. Final grade for a course (A, B, C, D, F).
   A. Categorical
   B. Quantitative, continuous
   C. Quantitative, discrete

3. The time it takes to be in line at the driver's license office.
   A. Categorical
   B. Quantitative, continuous
   C. Quantitative, discrete

4. The number of classes a student missed.
   A. Categorical
   B. Quantitative, continuous
   C. Quantitative, discrete

In problems 5 - 8, answer True or False.

5. In an ordered data set, the median of the upper 50 percent of the data set corresponds to a numerical value such that half of the values are below it.
   A. True
   B. False

6. Sample data is the set of all possible data values for a given subject under consideration.
   A. True
   B. False

7. Of the range, the interquartile range, and the variance, the interquartile range is most influenced by an outlying value in the data set.
   A. True
   B. False

8. The standard deviation is the square root of the variance.
   A. True
   B. False

9. A data set has only positive values. If the largest value of a data set is doubled, which of the following is not true?
   A. The mean increases.
   B. The range increases.
   C. The interquartile range increases.
   D. The standard deviation increases.
   E. All of these are true.

10. If the test scores of a class of 30 students have a mean of 75.6 and the test scores of another class of 24 students have a mean of 68.4, then the mean of the combined group is
   A. 72 B. 72.8 C. 72.4 D. 74.2 E. none of these

11. The heights in centimeters of 5 students are: 165, 175, 176, 159, 170. The sample mean and sample median are respectively:
   A. 170, 169
   B. 170, 170
   C. 169, 170
   D. 176, 169
   E. 176, 176

12. If a distribution has zero variance, which of the following is true?
   A. All the values are positive.
   B. All the values are negative.
   C. The number of positive values and the number of negative values are equal.
   D. All the values are equal to each other.

13. Which of the following is a measure of variation?
   A. standard deviation
   B. mean
   C. median
   D. mode

14. Given the following set of numbers, what is the variance?

   15 20 40 25 35

   A. 10.37 B. 86.0 C. 103.7 D. 107.5 E. none of these

15. A set of data is found to have a sample standard deviation of 25. Suppose that 6 is added to each of the numbers in the data set. What can you say about the standard deviation of the new data set?
   A. It will be unchanged.
   B. It will increase by 6.
   C. It will increase by 36.
   D. It will increase by $\sqrt{6}$.