Introduction to Statistics: Review Questions

1. Since the size of the population is always larger than the size of the sample, the population mean must

     a. always be smaller than the sample mean.
     b. be larger than the sample mean.
     c. be equal to the sample mean.
     d. None of these alternatives is correct.

2. Choose the correct statement.

     a. Median must always be positive.
     b. Median is unique.
     c. Median is a calculated average.
     d. Median is affected by extreme values.

3. Choose the correct statement.

     a. Mode must exist in a data set.
     b. Mode is always equal to the median.
     c. Mode is always larger than the mean.
     d. Mode is the most frequently occurring data value.

4. The range is

     a. a measure of central tendency.
     b. the most repeated value in the data set.
     c. the difference between the largest and the smallest data values in the data set.
     d. a measure of dispersion that gives information about the data set distribution.

5. If the mean of a data set is zero, then the standard deviation

      a. must also be zero.
      b. must be 1.
      c. can be any value other than zero.
      d. can be any positive value.

6. Choose the correct statement.

      a. Variance is a square root of standard deviation.
      b. Variance takes all the data values into consideration.
      c. If variance is very small, the data set must have an extreme value.
      d. A big variance indicates more consistency in the data.

7. Maya bought a t-shirt at $50, a hat for $70, and a pair of shoes for $180. She also bought a skirt, but she does not remember the price. If the average price per item was $120, find the price of the skirt.

8. The following frequency distribution shows a sample of grades of a statistics exam.

Grades	Frequency
50 – 59	7
60 – 69	10
70 – 79	22
80 – 89	15
90 – 99	6

Calculate the following:
a. Modal class is _____
b. Mean is _____
c. Variance is_____, given to 2 decimal places
d. Standard deviation is_____, given to 2 decimal places

9. Eleven daily temperatures for Alaska are listed below:
-21, 0, 2, -15, 0, 5, -18, 7, 0, -32, -25
Which of the following statements is true?

     a. There is no mode.
     b. The mode is 0.
     c. The mode is -21.
     d. The data set has 2 modes.

10. Lisa was attending an intense French course. She had 2 tests, each worth 20% of the final mark, a project, worth 10% of the final mark, and an exam, worth 50% of the final mark. If she scored 88% in test 1, 76% in test 2, 90% in the project, and 75% in the exam, what was her final mark (weighted mean), as a percentage?
Do not round your answer.

11. The following list shows the number of tickets sold in a week:
52 40 42   45   50   39   55   35
Which measure is the best to represent this set of data?

     a. mean and median
     b. mean, median, and mode
     c. median
     d. mode

12. Variance of all the numbers in group A is 2.13
Standard deviation of all the numbers in group B is 1.46
Variance of all the numbers in group C is 2.13
The group with the most dispersion is:

a. Group A
b. Group B
c. Group C
d. They all have the same spread.

13. The following data shows the frequency distribution of a sample of science exam marks.

Marks	No. of Students
50	7
55	10
60	11
65	8
70	4

Calculate the following:
a. Mean is _____
b. Variance is_____, given to 3 decimal places
c. Standard deviation is_____, given to 3 decimal places
d. Mode is _____

14. Which of the following symbols represents the mean of the population?

a. σ^2
b. σ
c. μ
d. $\bar{x}$