

## Introduction to Statistics: Review Questions & Answers

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.

Answer:   d  

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.

Answer:   b  

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.

Answer:   d  

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.

Answer:   c

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.

Answer: **d**

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.

Answer: **b**

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.

Answer: **\$180**

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

Answers:

- a. 70 – 79
- b. 75
- c. 130.25
- d. 11.41

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.

Answer: b

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.

Answer: 79.3%

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

Answer: a

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.

Answer: d

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 \_\_\_\_\_

Answers:

- a. 59
- b. 38.718
- c. 6.222
- d. 60

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

- a.  $\sigma^2$
- b.  $\sigma$
- c.  $\mu$
- d.  $\bar{x}$

Answer: c