Arithmetic mean and sample

1. In general, a .... is a number describing some aspect of a population.

- a. Sample.

- b. Parameter.

- c. Inference.

- d. Correction factor.

2. A sample quantity that serves to estimate an unknown parameter from a population is called:

- a. An equivalence.

- b. An estimator.

- c. An inference.

- d. A hypothesis test.

3. A sample may be drawn to:

- a. Save needless waste of time, money, and effort.

- b. Discover facts about a population.

- c. Make inferences about a parameter.

- d. All of the above.

4. Themeasure of central tendencywhich is sensitive to extreme scores on the higher or lower end of a distribution is the:

- a. again.

- b. mean.

- c. mode.

- d. all of the above

- e. none of the above

5. A large mass of data can best be summarized pictorially by means of:

- a. the range

- b. a histogram

- c. the frequency table

- d. the variance

6. Any characteristic of a population distribution may properly be referred to as a:

- a. standard deviation.

- b. raw score.

- c. standard score.

- d. standard error.

- e. parameter.

7. A distribution of 6 scores has a median of 21. If the highest score increases 3 points, the median will become _____.

- a. 21

- b. 21. 5

- c. 24

- d. Cannot be determined without additional information.

- e. none of these

8. A population is:

- a. number or measurement collected as a result ofobservation

- b. a subset of a population

- c. a characteristic of a population that is measurable

- d. a complete set of individuals, objects, or measurements having some common observable characteristics e. none of these

9. Which of the following describes a " statistical inference"?

- a. A true statement about a population made by measuring some sample of that population.
- b. Conjecture about a population made by measuring some sample of that population.
- c. A true statement about a sample made by measuring some population.
- d. Conjecture about a sample made by measuring some population.
- e. A true statement about a sample made by measuring the entire population.

10. If the mean, median, and mode of distribution are 5, 6, 7 respectively, then the distribution is:

- a. skewed negatively
- b. not skewed
- c. skewed positively
- d. symmetrical
- e. bimodal.

11. In a group of 12 scores, the largest score is increased by 36 points. What effect will this have on the mean of the scores?

- a. it will be increased by 12 points
- b. it will remain unchanged
- c. it will be increased by 3 points

- d. it will increase by 36 points

- e. there is no way of knowing exactly how many points the mean will be increased.

12. Let us define a new statistic as the distance between the 70th sample percentile and the 30th sample percentile. This new statistic would give us information concerning

- a. central tendency.

- b. variability.

- c. relative position.

- d. skewness.

- e. symmetry.

13. Increasing the frequencies in the tails of distribution will:

- a. reduce the standard deviation.

- b. not affect the standard deviation.

- c. increase the standard deviation.

- d. not affect the standard deviation as long as the increases are balanced on each side of the mean.

- e. none of the above

14. What is a synonym or example of a variable?

- a. constant

- b. the characteristic which takes on different values

- c. a number of ears on humans

- d. parameter

15. Complete this sentence: " The kth percentile of a given distribution is …
":

- a. the score at which k% of the cases fall.

- b. the score above which k% of the cases fall.

- c. the score below which k% of the cases fall.

- d. cannot answer without knowing the precise numerical value of k.

- e. more than one of the above is correct.

16. If a given score is at the 30th percentile for reference group A and the
60th percentile for reference group B, which of the following is most likely
true?

- a. Individuals in reference group B generally performed better on the
  test than those in group A.

- b. A person at the 15th percentile with group A will be at the 30th
  percentile with group B.

- c. A person at the 80th percentile with reference group B will be at the
  50th percentile with group A.

- d. Individuals in reference group B generally scored lower on the test
  than those in reference group A.

- e. None of the above.

17. If 40% of a group obtain scores below 70, the percentile rank of the score
is:

- a. 30

- b. 70

- c. 40

- d. 60 e. none of these

18. The following data are the number of hours worked per week by seven State College students: 3, 7, 4, 6, 2, 8, 19 Half (50%) of the values in a distribution are:

- a. included in the range
- b. between the mean and mode
- c. between Q(1) and Q(3)
- d. the mode and the highest value

19. Which of the following is a necessary condition for a sample to be random?

- a. Every person in the population has the same likelihood of being included in the sample.
- b. The choice of the method of selecting individuals from the population is governed entirely by chance.
- c. Proportions of various groups selected are equal to corresponding proportions in the population.
- d. The characteristics of the sample are the same as the characteristics of the population.
- e. None of the above is necessary.

20. The following set of scores is obtained on a test, X: 4, 8, 6, 8, 9, 11, 17, 13, 16, 24, 26, 24, 24, 26. The median is: (assume this is a population)

- a. 15
- b. 14. 5
- c. 16

- d. none of these

21. Using data from question 20, the variance and standard deviation respectively are:

- a. 64. 80 and 8. 05
- b. 81 and 9
- c. 60. 22 and 7. 76.
- d. none of these.

22. The standard deviation of a group of scores is 10. If 5 were subtracted from each score, the standard deviation of the new scores would be:

- a. 10/25
- b. 5
- c. 10

23. The summaries of data, which may be tabular, graphical, or numerical, are referred to as:

- a. inferential statistics
- b. statistical inference
- c. descriptive statistics
- d. report generation
- e. none of the above answers is correct.

24. Since the population size is always larger than the sample size, then the sample statistics

- a. can never be larger than the population parameter
- b. can never be equal to the population parameter

- c. can never be zero

- d. can never be smaller than the population parameter e. none of the above answers is correct.

25. The relative frequency of a class is computed by:

- a. dividing the midpoint of the class by the sample size

- b. dividing the frequency of the class by the midpoint

- c. dividing the sample size by the frequency of class

- d. dividing the frequency of the class by the sample size e. none of the above answers is correct.

26. The measure of location which is the most likely to be influenced by extreme values in the data set is the

- a. range

- b. median

- c. mode

- d. mean

- e. None of the above

27. The first quartile

- a. contains at least one-third of the data elements

- b. is the same as 25th percentile

- c. is the same as 50th percentile

- d. is the same as 75th percentile

- e. None of the above answers is correct.

28. If the correlation between the age of an auto and money spent on repairs is +. 90

- a. 81% of the variation in the money spent on repairs is explained by the age of the auto

- b. 81% of the money spent on repairs is unexplained by the age of the auto

- c. 90% of the money spent on repairs is explained by the age of the auto

- d. none of the above

29. The correlation coefficient for X and Y is known to be zero. We then can conclude that:

- a. X and Y have standard distributions

- b. there exists no linear relationship between X and Y

- c. the variances of X and Y are equal

- d. here exists no relationship between X and Y

- e. none of these

30. If the coefficient of correlation equals 0. 61, it indicates that the proportion of the variation in the dependent variable explained by the variation in the independent variable is

- a. 37%

- b. 61%

- c. 98%

- d. cannot be determined