

MULTIPLE CHOICE. Choose the one that best completes the statement or answers the question.

- 1) Which of the following is the properly rounded mean for the given data? 1) \_\_\_\_\_  
7, 8, 13, 9, 10, 11  
A) 9 B) 9.7 C) 9.67 D) 10
- 2) Find the mean of the following data set? 2) \_\_\_\_\_  
10, 5, 8, 3, 14  
A) 7.0 B) 5.0 C) 8.0 D) 9.0
- 3) Find the mean for the following data set: 3) \_\_\_\_\_  
25 24 21 13 14 15  
A) 18 B) 12 C) 4.9 D) 18.7
- 4) What is the mode of the following data set? 4) \_\_\_\_\_  
5, 19, 17, 13, 17, 15, 12  
A) 17 B) 11 C) 13 D) 15
- 5) A student has an average of 78 on seven chapter tests. If the student's scores on six of the tests are 72, 82, 84, 66, 68, and 89, what was the score on the remaining test? 5) \_\_\_\_\_  
A) 85 B) 96 C) 77 D) 78
- 6) A data set has a median of 84, and six of the numbers in the data set are less than median. The data set contains a total of  $n$  numbers. 6) \_\_\_\_\_  
  
If  $n$  is odd, and exactly one number in the data set is equal to 84, what is the value of  $n$ ?  
A) 17 B) 15 C) 13 D) 16
- 7) A data set contains three unique values. Which of the following must be true? 7) \_\_\_\_\_  
A) mean = median B) none of these  
C) median = midrange D) mean = median = midrange
- 8) What is the midrange of the following data set? 8) \_\_\_\_\_  
5, 11, 10, 12, 4, 12, 18, 18, 18  
A) 12 B) 18 C) 11 D) 5
- 9) What is the median of the following data set? 9) \_\_\_\_\_  
6, 9, 13, 14, 18  
A) 16 B) 12 C) 13 D) 14

- 10) What is the median of the following set of values? 10) \_\_\_\_\_  
 2, 16, 14, 10, 14, 9, 10, 14  
 A) 12                      B) 10                      C) 14                      D) 8
- 11) Find the sample variance for the following data set: 11) \_\_\_\_\_  
 25 20 19 15 31  
 A) 6.2                      B) 38                      C) 16                      D) 30.4
- 12) Given that the mean of a set of data is 25 and the standard deviation is 3, what is the coefficient of variation? 12) \_\_\_\_\_  
 A) 8.33                      B) 833%                      C) 0.12                      D) 12%
- 13) The completion times for a certain marathon race was 3 hours with a standard deviation of 0.5 hours. What can you determine about these data by using Chebyshev's Inequality with  $K = 2$ ? 13) \_\_\_\_\_  
 A) At least 88.9% of the completion times are between 2 hours and 4 hours.  
 B) At most 88.9% of the completion times are between 2 hours and 4 hours.  
 C) At least 75% of the completion times are between 2 hours and 4 hours.  
 D) No more than 75% of the completion times are between 2 hours and 4 hours.
- 14) A population has a mean  $\mu = 21$  and standard deviation  $\sigma = 11$ . Find the  $z$ -score for a population value of 40. 14) \_\_\_\_\_  
 A) 1.7                      B) 0.6                      C) 19                      D) 3.6
- 15) Find the sample standard deviation for the following data set: 15) \_\_\_\_\_  
 25 13 31 33 20  
 A) 66.8                      B) 8.2                      C) 7.3                      D) 53.4
- 16) Indicate which student has the higher  $z$  score. 16) \_\_\_\_\_  
**Art Major**       $X = 46$        $\bar{X} = 50.5$        $s = 5.2$   
**Theater Major**       $X = 70$        $\bar{X} = 75.1$        $s = 7.3$   
 A) Both students have the same score.  
 B) Neither student received a positive score; therefore, the higher score cannot be determined.  
 C) The theater major has a higher score than the art major.  
 D) The art major has a higher score than the theater major.

- 17) The average weight of adult male bison in a particular federal wildlife preserve is 1450 pounds with a standard deviation of 240 pounds. Find the weight of an adult bull whose  $z$ -score is 1.5. 17) \_\_\_\_\_  
A) 1810 lb                      B) 1450 lb                      C) 1690 lb                      D) 1090 lb
- 18) A baseball player has a batting average of 0.325 each week of the season, with a standard deviation of 0.065. What is the  $z$  score when he bats 0.410 one week? 18) \_\_\_\_\_  
A) 1.308                      B) 0.325                      C) 1.275                      D) 0.410
- 19) According to Chebyshev's theorem, the maximum proportion of data values from a data set that are more than 1.5 standard deviations from the mean is \_\_\_\_\_. 19) \_\_\_\_\_  
A) 0.44                      B) 1.33                      C) 0.17                      D) 0.67
- 20) The average resident of Metro City produces 570 pounds of solid waste each year, and the standard deviation is approximately 70 pounds. Use Chebyshev's theorem to find the weight range that contains at least 75% of all residents' annual garbage weights. 20) \_\_\_\_\_  
A) Between 500 and 640 pounds                      B) Between 430 and 710 pounds  
C) Between 290 and 850 pounds                      D) Between 360 and 780 pounds
- 21) The range of a data set is the difference between the highest value and the lowest value. 21) \_\_\_\_\_  
A) False                      B) True
- 22) Determine the range for the following data set. 22) \_\_\_\_\_  
4, 7, 3, 16, 5, 22, 8  
A) 4                      B) 14                      C) 19                      D) 3
- 23) The coefficient of variation for a data set is the mean divided by the standard deviation, expressed as a percentage. 23) \_\_\_\_\_  
A) False                      B) True
- 24) Chebyshev's theorem can be used to find the minimum percentage of the values in a data set that will fall within a certain distance of the mean. 24) \_\_\_\_\_  
A) False                      B) True
- 25) The variance of a data set is the square root of the standard deviation. 25) \_\_\_\_\_  
A) True                      B) False