**STUDY QUESTIONS**

1. Statistical measures used to yield information about the center or middle part of a

group of numbers are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

2. The "average" is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

3. The value occurring most often in a group of numbers is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

4. In a set of 110 numbers arranged in order, the median is located at the

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ position.

5. If a set of data has an odd number of values arranged in ascending order, the median

is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ value.

Consider the data: 5, 4, 6, 6, 4, 5, 3, 2, 6, 4, 6, 3, 5

Answer questions 6-8 using this data.

6. The mode is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

7. The median is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

8. The mean is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

9. If a set of values is a population, then the mean is denoted by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

10. In computing a mean for grouped data, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is used to represent

all data in a given class interval.

11. The mean for the data given below is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Class Interval Frequency

50 - under 53 14

53 - under 56 17

56 - under 59 29

59 - under 62 31

62 - under 65 18

12. Measures of variability describe the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a set of data.

Use the following population data for Questions 13-17:

27 65 28 61 34 91 61 37 58 31

43 47 44 20 48 50 49 43 19 52

13. The range of the data is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

14. The value of *Q*1 is \_\_\_\_\_\_\_\_\_\_\_\_\_, *Q*2 is \_\_\_\_\_\_\_\_\_\_\_\_, and *Q*3 is \_\_\_\_\_\_\_\_\_\_\_\_.

15. The interquartile range is \_\_\_\_\_\_\_\_\_\_\_\_\_.

16. The value of the 34th percentile is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

17. The value of the Pearsonian coefficient of skewness for these data is

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

18. The Mean Absolute Deviation is computed by averaging the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of

deviations around the mean.

19. Subtracting each value of a set of data from the mean produces \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

from the mean.

20. The sum of the deviations from the mean is always \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

21. The variance is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the standard deviation.

22. The population variance is computed by using \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the

denominator. Whereas, the sample variance is computed by using

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the denominator.

23. If the sample standard deviation is 9, then the sample variance is

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Consider the data below and answer questions 24-26 using the data:

2, 3, 6, 12

24. The mean absolute deviation for this data is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

25. The sample variance for this data is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

26. The population standard deviation for this data is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

27. In estimating what proportion of values fall within so many standard deviations of

the mean, a researcher should use \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ if the shape of the distribution

of numbers is unknown.

28. Suppose a distribution of numbers is mound shaped with a mean of 150 and a

variance of 225. Approximately \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ percent of the values fall

between 120 and 180. Between \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ fall

99.7% of these values.

29. The shape of a distribution of numbers is unknown. The distribution has a mean of

275 and a standard deviation of 12. The value of *k* for 299 is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

At least \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ percent of the values fall between 251 and 299.

30. Suppose data are normally distributed with a mean of 36 and a standard deviation of

4.8. The *z* score for 30 is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The *z* score for 40 is

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

31. A normal distribution of values has a mean of 74 and a standard deviation of 21.

The coefficient of variation for this distribution is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_?

Consider the data below and use the data to answer questions 32-35.

Class Interval Frequency

2- 4 5

4- 6 12

6- 8 14

8-10 15

10-12 8

12-14 4

32. The sample variance for the data above is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

33. The population standard deviation for the data above is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

34. The mode of the data is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

35. The median of the data is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

36. If a unimodal distribution has a mean of 50, a median of 48, and a mode of 47, the

distribution is skewed \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

37. If the value of *Sk* is positive, then it may be said that the distribution is

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ skewed.

38. The peakedness of a distribution is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

39. If a distribution is flat and spread out, then it is referred to as

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; if it is "normal" in shape, then it is referred to as

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; if it is high and thin, then it is referred to as

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

40. In a box plot, the inner fences are computed by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The outer fences are computed by

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

41. Data values that lie outside the mainstream of values in a distribution are referred to

as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**ANSWERS TO STUDY QUESTIONS**

1. Measures of Central Tendency 22. *N*, *n* – 1

2. Mean 23. 81

3. Mode 24. 3.25

4. 55.5th 25. 20.25

5. Middle 26. 3.897

6. 6 27. Chebyshev’s Theorem

7. 5 28. 95, 105, and 195

8. 4.54 29. 2, 75

9. *μ* 30. –1.25, 0.83

10. Class Midpoint 31. 28.38%

11. 58.11 32. 7.54

12. Spread or Dispersion 33. 2.72

13. 72 34. 9

14. *Q*1 = 32.5, *Q*2 = 45.5, *Q*3 = 55 35. 7.7143

15. IQR = 22.5 36. Right

16. *P*34 = 37 37. Positively

17. *Sk* = -0.018 38. Kurtosis

18. Absolute Value 39. Platykurtic, Mesokurtic, Leptokurtic

19. Deviations 40. *Q*1 - 1.5 IQR and *Q*3 + 1.5 IQR *Q*1 - 3.0 IQR and *Q*3 + 3.0 IQR

20. Zero 41. Outliers

21. Square