

Name: _____

Chapter 1: Review Questions

1. A researcher is interested in the sleeping habits of American college students. A group of 50 students is interviewed and the researcher finds that these students sleep an average of 6.7 hours per day. For this study, the average of 6.7 hours is an example of a(n) _____.

- a. sample
 - b. population
 - c. statistic
 - d. parameter
-
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2. Although research questions typically concern a _____, a research study typically examines a _____.

- a. parameter, population
 - b. population, sample
 - c. statistic, sample
 - d. sample, population
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3. Statistical methods that use sample data to answer general questions about a population are called _____.

- a. statistics
 - b. descriptive statistics
 - c. parameters
 - d. inferential statistics
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4. Although samples are usually representative of the populations from which they are selected, you should not expect a sample statistic to be exactly equal to the corresponding population parameter. The natural differences that exist between statistics and their parameters are known as _____.

- a. sampling error
 - b. statistical error
 - c. parametric error
 - d. inferential error
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5. In an experiment, the researcher manipulates the _____ variable and measures changes in the _____ variable.

- a. dependent, independent
 - b. independent, dependent
 - c. population, sample
 - d. sample, population
-
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6. Which of the following is *not* a continuous variable?

- a. temperature
 - b. time to solve a problem
 - c. height
 - d. number of children in a family
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7. Using letter grades (A, B, C, D, and E) to classify student performance on an exam is an example of measurement on a(n) _____ scale of measurement.

- a. ratio
 - b. nominal
 - c. ordinal
 - d. interval
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8. What is the first step to be performed in the following mathematical expression? $\sum(X + 2)^2$

- a. Sum the squared values.
 - b. Add 2 points to each value.
 - c. Square each value.
 - d. Square the sum of the values.
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9. For the following scores, what is $\sum(X + 1)^2$? Scores: 3, 0, 5, 2

- a. $(14)^2 = 196$
 - b. $11^2 = 121$
 - c. 62
 - d. 61
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10. How would the following mathematical operation be expressed in summation notation? "Subtract one point from each score and find the sum of the resulting values."

- a. $\sum (1 - X)$
- b. $\sum X - 1$
- c. $1 - \sum X$
- d. $\sum (X - 1)$

Chapter 2: Review Questions

1. In a grouped frequency distribution one interval is listed as 50-54. What is the width of this interval?

- a. 4 points
 - b. 54 points
 - c. 3 points
 - d. 5 points
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2. A researcher observes aggressive behavior for a sample of $n = 15$ boys and classifies each boy as high, medium, or low in terms of aggression. If the frequency distribution for these scores is presented in a graph, what kind of graph would be appropriate?

- a. a polygon
 - b. a bar graph
 - c. all of these choices
 - d. a histogram
-

3. A professor recorded the academic major for each student in an introductory psychology class. If the data are presented in a frequency distribution graph, what type of graph should be used?

- a. a polygon
 - b. a bar graph
 - c. either a histogram or a polygon
 - d. a histogram
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4. The width of the bars in a histogram is determined by:

- a. cumulative frequency.
 - b. the frequency of a score.
 - c. the apparent limits of a score or interval.
 - d. the real limits of a score or class interval.
-
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5. In a frequency distribution graph, frequencies are presented on the _____ and the scores (categories) are listed on the _____.

- a. Y axis/X axis
 - b. X axis/Y axis
 - c. horizontal line/vertical line
 - d. class interval/horizontal line
-
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6. A distribution of $N = 3$ scores consists of 5, 7, and 50. The best way to present these data would be to:

- a. use a regular frequency distribution table.
 - b. use a grouped frequency distribution table.
 - c. sketch a histogram or polygon.
 - d. simply list the three scores.
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7. What is the shape of the distribution for the following set of data?

Scores: 1, 1, 1, 2, 3, 3, 3

- a. negatively skewed
 - b. rectangular
 - c. positively skewed
 - d. symmetrical
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8. For the following distribution, the cumulative frequency (cf) for $X = 4$ is:

- a. 5
- b. 9
- c. 3
- d. 11

9. For the following distribution, the percentile rank for $X = 3.5$ is:

- a. 58%
- b. 50%
- c. 90%
- d. 75%

Chapter 3: Review Questions

1. What is the value of the mean for the following set of scores?

Scores: 1, 3, 5, 0, 1

- a. 5
- b. 2.5
- c. 2
- d. 10

2. A sample of $n = 5$ scores has a mean of $M = 9$. What is $\sum X$ for this sample?

- a. $5/9 = 0.555$
- b. $5(9) = 45$
- c. $9/5 = 1.80$
- d. Cannot be determined from the information given.

3. After 5 points are added to every score in a distribution, the mean is calculated and found to be $\mu = 30$. What was the value of the mean for the original distribution?

- a. 30
 - b. 35
 - c. 25
 - d. Cannot be determined from the information given.
-
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4. Which of the following actions will *always* change the value of the mean?

- a. Adding a new score to the distribution.
 - b. Removing a score from the distribution.
 - c. All 3 of the other choices are correct.
 - d. Changing the value of one score.
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5. A sample has a mean of $M = 25$. If a new score with a value of $X = 25$ is added to the sample, what effect will it have on the sample mean?

- a. Cannot be determined from the information given.
 - b. The sample mean will decrease.
 - c. The sample mean will increase.
 - d. The sample mean will remain the same.
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6. A sample of $n = 5$ scores has a mean of $M = 8$. If one new score with a value of $X = 2$ is added to the sample, what will be the value for the new mean?

- a. $M = 8$
 - b. $M = 7$
 - c. $M = 8.4$
 - d. Cannot be determined with the information provided.
-
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7. What is the value of the median for the following set of scores?

Scores: 1, 3, 3, 5, 6, 7, 8, 23

- a. 5.5
 - b. 6
 - c. $54/8 = 7$
 - d. 5
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8. A teacher gave a reading test to a class of 5th-grade students and computed the mean, median, and mode for the test scores. Which of the following statements *cannot* be an accurate description of the scores?

- a. All of the other options are false statements.
 - b. The majority of the students had scores above the mode.
 - c. The majority of the students had scores above the mean.
 - d. The majority of the students had scores above the median.
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9. For a negatively skewed distribution with a mode of $X = 25$ and a mean of $M = 20$, the median is probably _____.

- a. between 20 and 25
 - b. less than 20
 - c. greater than 25
 - d. Cannot be determined from the information given.
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10. For an extremely skewed distribution of scores, the best measure of central tendency would be _____.

- a. the mode
- b. the median
- c. Central tendency cannot be determined for a skewed distribution.
- d. the mean

Chapter 4: Review Questions

1. In a population of $N = 10$ scores, the smallest score is $X = 8$ and the largest score is $X = 20$. The range for the population is _____.

- a. 13
 - b. 11
 - c. 12
 - d. Cannot be determined without more information.
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2. In a population with a mean of $\mu = 50$, a score of $X = 45$ would have a deviation score of _____.

- a. 45
 - b. -5
 - c. Cannot be determined without more information.
 - d. 5
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3. A population of $N = 5$ scores has $SS = 40$. What is the variance for this population?

- a. $40/5 = 8$
 - b. $40/4 = 10$
 - c. $4(40) = 160$
 - d. $5(40) = 200$
-

4. A sample of $n = 5$ scores has $SS = 40$. What is the variance for this sample?

- a. $4(40) = 160$
 - b. $40/5 = 8$
 - c. $40/4 = 10$
 - d. $5(40) = 200$
-

5. In general, what is the relationship between the standard deviation and variance?

- a. Standard deviation equals the squared variance.
 - b. These two measures are unrelated.
 - c. Variance is the square root of standard deviation.
 - d. Standard deviation is the square root of variance.
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6. What does it mean to say that the sample variance is an *unbiased statistic*?

- a. No sample will have a variance that is exactly equal to the population variance.
 - b. If many different samples are selected, the average of the sample variances will be equal to the population variance.
 - c. Each sample will have a variance that is equal to the population variance.
 - d. If many different samples are selected, the sample variances will consistently underestimate the population variance.
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7. A population of scores has $\mu = 50$ and $\sigma = 10$. If 5 points are added to every score in the population, then the new mean and standard deviation would be:

- a. $\mu = 55$ and $\sigma = 10$
 - b. $\mu = 50$ and $\sigma = 15$
 - c. $\mu = 55$ and $\sigma = 15$
 - d. $\mu = 50$ and $\sigma = 10$
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8. What is the value of SS for the following sample?

Scores: 1, 3, 5

- a. $SS = 8$
 - b. $SS = 8/3$
 - c. $SS = (8)^2$
 - d. $SS = 8/2$
-

9. If a sample has a variance of 16, then the sample standard deviation will be:

- a. 4
 - b. 8
 - c. $16^2 = 256$
 - d. $16/(n - 1)$
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10. On an exam with a mean of $\mu = 70$, you have a score of $X = 75$. Which of the following values for the standard deviation would give you the highest position within the class?

- a. $\sigma = 5$
- b. Cannot determine from the information given.
- c. $\sigma = 10$
- d. $\sigma = 1$