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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. A researcher uses an anonymous survey to investigate the television-viewing habits of American adolescents. The entire group of American adolescents is an example of a \_\_\_\_\_\_\_\_\_.

|  |  |  |
| --- | --- | --- |
|   | a.  | sample |
|   | b.  | statistic |
|   | c.  | population |
|   | d.  | parameter |

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| *ANSWER:* | c |

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| 2. A researcher uses an anonymous survey to investigate the television-viewing habits of American adolescents. Based on the set of 356 surveys that were completed and returned, the researcher finds that these students spend an average of 3.1 hours each day watching television. For this study, the set of 356 students who returned surveys is an example of a \_\_\_\_\_\_\_.

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| --- | --- | --- |
|   | a.  | parameter |
|   | b.  | statistic |
|   | c.  | population |
|   | d.  | sample |

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| *ANSWER:* | d |

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| 3. A researcher uses an anonymous survey to investigate the television-viewing habits of American adolescents. The goal of the research is to determine the average number of hours each day that American adolescents spend watching television. The researcher is trying to determine a number that is an example of a \_\_\_\_\_.

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| --- | --- | --- |
|   | a.  | parameter |
|   | b.  | statistic |
|   | c.  | population |
|   | d.  | sample |

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| *ANSWER:* | a |

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| 4. A researcher is interested in the eating behavior of rats and selects a group of 25 rats to be tested in a research study. The group of 25 rats is an example of a  \_\_\_\_\_\_.

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|   | a.  | sample |
|   | b.  | statistic |
|   | c.  | population |
|   | d.  | parameter |

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| *ANSWER:* | a |

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| 5. A researcher is curious about the average monthly cell phone bill for high school students in the state of Florida. If this average could be obtained, it would be an example of a \_\_\_\_\_\_.

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| --- | --- | --- |
|   | a.  | sample |
|   | b.  | statistic |
|   | c.  | population |
|   | d.  | parameter |

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| *ANSWER:* | d |

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| 6. Although a research study is typically conducted with a relatively small group of participants known as a \_\_\_\_\_\_\_\_\_, most researchers hope to generalize their results to a much larger group known as a  \_\_\_\_\_\_\_\_\_.

|  |  |  |
| --- | --- | --- |
|   | a.  | sample; population |
|   | b.  | statistic; sample |
|   | c.  | population; sample |
|   | d.  | parameter; population |

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| *ANSWER:* | a |

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| 7. The relationship between a statistic and a parameter is the same as the relationship between \_\_\_\_\_\_.

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| --- | --- | --- |
|   | a.  | a sample and a population |
|   | b.  | a statistic and a parameter |
|   | c.  | a parameter and a population |
|   | d.  | descriptive statistics and inferential statistics |

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| *ANSWER:* | a |

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| 8. Organizing a set of scores in a table is an example of using \_\_\_\_\_\_\_.

|  |  |  |
| --- | --- | --- |
|   | a.  | parameters |
|   | b.  | statistics |
|   | c.  | descriptive statistics |
|   | d.  | inferential statistics |

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| --- | --- |
| *ANSWER:* | c |

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| 9. A characteristic, usually a numerical value, which describes a sample is called a \_\_\_\_\_\_\_.

|  |  |  |
| --- | --- | --- |
|   | a.  | parameter |
|   | b.  | statistic |
|   | c.  | variable |
|   | d.  | constant |

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| *ANSWER:* | b |

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| 10. A researcher records the change in weight (gained or lost) during the first semester of college for each individual in a group of 25 freshmen, then calculates the average change in weight.  The average is an example of a \_\_\_\_\_\_\_.

|  |  |  |
| --- | --- | --- |
|   | a.  | parameter |
|   | b.  | statistic |
|   | c.  | variable |
|   | d.  | constant |

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| --- | --- |
| *ANSWER:* | b |

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| 11. The average verbal SAT score for the entire class of entering freshmen is 530. However, if you select a sample of 20 freshmen and compute their average verbal SAT score you probably will not get exactly 530. What statistical concept is used to explain the natural difference that exists between a sample mean and the corresponding population mean?

|  |  |  |
| --- | --- | --- |
|   | a.  | Statistical error |
|   | b.  | Inferential error |
|   | c.  | Sampling error |
|   | d.  | Parametric error |

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| *ANSWER:* | c |

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| 12. A researcher conducts an experiment to determine whether moderate doses of St. John's Wort have any effect of memory for college students. For this study, what is the independent variable?

|  |  |  |
| --- | --- | --- |
|   | a.  | The amount of St. John’s Wort given to each participant |
|   | b.  | The memory score for each participant |
|   | c.  | The group of college students |
|   | d.  | Cannot answer without more information |

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| *ANSWER:* | a |

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| 13. A recent study reports that students who just finished playing a prosocial video game were more likely to help others than students who had played a neutral or antisocial game. For this study, what is the independent variable?

|  |  |  |
| --- | --- | --- |
|   | a.  | The students who were given the prosocial game |
|   | b.  | The students who were given the neutral or antisocial game |
|   | c.  | The kind of game given to the students |
|   | d.  | The helping behavior of the students |

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| *ANSWER:* | c |

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| 14. In a correlational study,

|  |  |  |
| --- | --- | --- |
|   | a.  | 1 variable is measured and 2 groups are compared. |
|   | b.  | 2 variables are measured and 2 groups are compared. |
|   | c.  | 1 variable is measured and there is only 1 group of participants. |
|   | d.  | 2 variables are measured and there is only 1 group of participants. |

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| *ANSWER:* | d |

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| 15. For a research study comparing attitude scores for males and females, participant gender is an example of what kind of variable?A quasi-independent variable

|  |  |  |
| --- | --- | --- |
|   | a.  | An independent variable |
|   | b.  | A dependent variable |
|   | c.  | A quasi-independent variable |
|   | d.  | A quasi-dependent variable |

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| *ANSWER:* | a |

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| 16. For an experiment comparing two methods of teaching social skills training to autistic children, the independent variable is \_\_\_\_\_\_\_ and the dependent variable is \_\_\_\_\_\_\_.

|  |  |  |
| --- | --- | --- |
|   | a.  | teaching methods; the autistic children |
|   | b.  | the autistic children; the social skills that are learned |
|   | c.  | the social skills that are learned; the autistic children |
|   | d.  | teaching methods; the social skills that are learned |

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| *ANSWER:* | d |

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| 17. Which of the following is an example of a discrete variable?

|  |  |  |
| --- | --- | --- |
|   | a.  | The age of each student in a psychology class |
|   | b.  | The gender of each student in a psychology class |
|   | c.  | The amount of time to solve a problem |
|   | d.  | The amount of weight gained for each freshman at a local college |

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| --- | --- |
| *ANSWER:* | b |

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| 18. Which of the following is an example of a continuous variable?

|  |  |  |
| --- | --- | --- |
|   | a.  | The gender of each student in a psychology class |
|   | b.  | The number of males in each class offered by the college |
|   | c.  | The amount of time to solve a problem |
|   | d.  | The number of children in a family |

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| *ANSWER:* | c |

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| 19. If it is impossible to divide the existing categories of a variable, then it is an example of a(n) \_\_\_\_\_ variable.

|  |  |  |
| --- | --- | --- |
|   | a.  | independent |
|   | b.  | dependent |
|   | c.  | discrete |
|   | d.  | continuous |

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| --- | --- |
| *ANSWER:* | c |

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| 20. What kind of variable requires the use of real limits?

|  |  |  |
| --- | --- | --- |
|   | a.  | Independent |
|   | b.  | Dependent |
|   | c.  | Discrete |
|   | d.  | Continuous |

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| --- | --- |
| *ANSWER:* | d |

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| 21. A doctor is measuring children’s heights to the nearest ½ inch and obtains scores such as 40.0, 40.5, 41.0, and so on. What are the real limits for a score of *X* = 42?

|  |  |  |
| --- | --- | --- |
|   | a.  | 41 and 43 |
|   | b.  | 41.5 and 42.5 |
|   | c.  | 41.75 and 42.25 |
|   | d.  | 41.25 and 42.75 |

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| *ANSWER:* | c |

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| 22. Students in an introductory art class are classified as art majors and non-art majors. What scale of measurement is being used to classify the students?

|  |  |  |
| --- | --- | --- |
|   | a.  | Nominal |
|   | b.  | Ordinal |
|   | c.  | Interval |
|   | d.  | Ratio |

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| *ANSWER:* | a |

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| 23. The participants in a research study are classified as high, medium, or low in self-esteem.  What measurement scale is being used to classify self-esteem?

|  |  |  |
| --- | --- | --- |
|   | a.  | Nominal |
|   | b.  | Ordinal |
|   | c.  | Interval |
|   | d.  | Ratio |

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| *ANSWER:* | b |

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| 24. Using letter grades (A, B, C, D, and F) to classify student performance on an exam is an example of measurement on a(n) \_\_\_\_\_\_\_ scale of measurement.

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| --- | --- | --- |
|   | a.  | nominal |
|   | b.  | ordinal |
|   | c.  | interval |
|   | d.  | ratio |

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| --- | --- |
| *ANSWER:* | b |

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| 25. Determining the class standing (1st, 2nd, and so on) for the graduating seniors at a high school would involve measurement on a(n) \_\_\_\_\_ scale of measurement.

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| --- | --- | --- |
|   | a.  | nominal |
|   | b.  | ordinal |
|   | c.  | interval |
|   | d.  | ratio |

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| *ANSWER:* | b |

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| 26. What additional information is obtained by measuring two individuals on an ordinal scale compared to a nominal scale?

|  |  |  |
| --- | --- | --- |
|   | a.  | Whether the measurements are the same or different |
|   | b.  | The direction of the difference |
|   | c.  | The size of the difference |
|   | d.  | None of the other options is correct |

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| *ANSWER:* | b |

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| 27. What additional information is obtained by measuring two individuals on an interval scale compared to an ordinal scale?

|  |  |  |
| --- | --- | --- |
|   | a.  | Whether the measurements are the same or different |
|   | b.  | The direction of the difference |
|   | c.  | The size of the difference |
|   | d.  | None of the other options is correct |

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| *ANSWER:* | c |

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| 28. What scale of measurement is being used when a teacher measures the number of correct answers on a quiz for each student?

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| --- | --- | --- |
|   | a.  | Nominal |
|   | b.  | Ordinal |
|   | c.  | Interval |
|   | d.  | Ratio |

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| *ANSWER:* | d |

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| 29. After measuring two individuals, a researcher can say that Tom’s score is 4 points higher than Bill’s. The measurements must come from a(n) \_\_\_\_\_\_\_ scale.

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| --- | --- | --- |
|   | a.  | nominal |
|   | b.  | ordinal |
|   | c.  | interval |
|   | d.  | interval or ratio |

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| --- | --- |
| *ANSWER:* | d |

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| 30. What kind of measurement scale is necessary to conclude that one score is twice as big as another?

|  |  |  |
| --- | --- | --- |
|   | a.  | Ordinal |
|   | b.  | Interval |
|   | c.  | Ratio |
|   | d.  | Interval or ratio |

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| *ANSWER:* | c |

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| 31. For statistical purposes, it usually is not important to differentiate between which two scales of measurement?

|  |  |  |
| --- | --- | --- |
|   | a.  | Nominal and ordinal |
|   | b.  | Ordinal and interval |
|   | c.  | Interval and ratio |
|   | d.  | Nominal and interval |

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| *ANSWER:* | c |

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| 32. What is the final step to be performed in the mathematical expression, (Σ*X*)2?

|  |  |  |
| --- | --- | --- |
|   | a.  | Square each score |
|   | b.  | Add the scores |
|   | c.  | Add the squared scores |
|   | d.  | Square the sum of the scores |

|  |  |
| --- | --- |
| *ANSWER:* | d |

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| 33. What is the first step to be performed in the following mathematical expression, Σ*X*2?

|  |  |  |
| --- | --- | --- |
|   | a.  | Square each score |
|   | b.  | Add the scores |
|   | c.  | Add the squared scores |
|   | d.  | Square the sum of the scores |

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| --- | --- |
| *ANSWER:* | a |

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| 34. What is the final step to be performed when computing Σ(*X* – 2)2?

|  |  |  |
| --- | --- | --- |
|   | a.  | Square each value |
|   | b.  | Subtract 2 points from each score |
|   | c.  | Sum the squared values |
|   | d.  | Subtract 22 from each X2 value |

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| --- | --- |
| *ANSWER:* | c |

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| 35. What is the first step to be performed when computing Σ(*X* + 2)2?

|  |  |  |
| --- | --- | --- |
|   | a.  | Square each value |
|   | b.  | Add 2 points to each score |
|   | c.  | Sum the squared values |
|   | d.  | Sum the (*X* + 2) values |

|  |  |
| --- | --- |
| *ANSWER:* | b |

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| 36. What is the value of (Σ*X*)2 for the scores 1, 5, 2?

|  |  |  |
| --- | --- | --- |
|   | a.  | 10 |
|   | b.  | 16 |
|   | c.  | 30 |
|   | d.  | 64 |

|  |  |
| --- | --- |
| *ANSWER:* | d |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 37. What is the value of Σ*X*2 for the scores 1, 0, 2, 4?

|  |  |  |
| --- | --- | --- |
|   | a.  | 14 |
|   | b.  | 21 |
|   | c.  | 28 |
|   | d.  | 49 |

|  |  |
| --- | --- |
| *ANSWER:* | b |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 38. What is the value of Σ*X* + 1 for the scores 1, 0, 2, 4?

|  |  |  |
| --- | --- | --- |
|   | a.  | 8 |
|   | b.  | 10 |
|   | c.  | 11 |
|   | d.  | 14 |

|  |  |
| --- | --- |
| *ANSWER:* | a |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 39. What is the value of Σ(*X* + 1) for the scores 1, 0, 1, 4?

|  |  |  |
| --- | --- | --- |
|   | a.  | 4 |
|   | b.  | 6 |
|   | c.  | 7 |
|   | d.  | 10 |

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| --- | --- |
| *ANSWER:* | d |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 40. What is the value of Σ(*X* – 1)2 for the scores 1, 2, 1, 4?

|  |  |  |
| --- | --- | --- |
|   | a.  | 10 |
|   | b.  | 16 |
|   | c.  | 36 |
|   | d.  | 49 |

|  |  |
| --- | --- |
| *ANSWER:* | a |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 41. What is the value of (Σ*X*)2 for the scores 1, 0, 2, 4?

|  |  |  |
| --- | --- | --- |
|   | a.  | 14 |
|   | b.  | 21 |
|   | c.  | 28 |
|   | d.  | 49 |

|  |  |
| --- | --- |
| *ANSWER:* | d |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 42. What is the value of Σ*X* + 1 for the scores 1, 6, 3?

|  |  |  |
| --- | --- | --- |
|   | a.  | 10 |
|   | b.  | 11 |
|   | c.  | 13 |
|   | d.  | 16 |

|  |  |
| --- | --- |
| *ANSWER:* | b |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 43. What is the value of Σ(*X* + 1) for the scores 2, 4, 7?

|  |  |  |
| --- | --- | --- |
|   | a.  | 10 |
|   | b.  | 11 |
|   | c.  | 13 |
|   | d.  | 16 |

|  |  |
| --- | --- |
| *ANSWER:* | d |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 44. What is the value of Σ(*X* – 2) for the scores 2, 3, 5?

|  |  |  |
| --- | --- | --- |
|   | a.  | 4 |
|   | b.  | 6 |
|   | c.  | 8 |
|   | d.  | 10 |

|  |  |
| --- | --- |
| *ANSWER:* | a |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 45. What is the value of Σ(*X* – 2)2 for the scores 2, 3, 5?

|  |  |  |
| --- | --- | --- |
|   | a.  | 8 |
|   | b.  | 10 |
|   | c.  | 16 |
|   | d.  | 36 |

|  |  |
| --- | --- |
| *ANSWER:* | b |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 46. You are instructed to subtract 4 points from each score and find the sum of the resulting values. How would this set of instructions be expressed in summation notation?

|  |  |  |
| --- | --- | --- |
|   | a.  | Σ*X* – 4 |
|   | b.  | Σ (*X* – 4) |
|   | c.  | 4 – Σ*X* |
|   | d.  | Σ(4 – *X*) |

|  |  |
| --- | --- |
| *ANSWER:* | b |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 47. You are instructed to subtract 4 points from each score, square the resulting value, and find the sum of the squared numbers. How would this set of instructions be expressed in summation notation?

|  |  |  |
| --- | --- | --- |
|   | a.  | Σ*X* – 42 |
|   | b.  | (Σ*X* – 4)2 |
|   | c.  | Σ(*X* – 4)2 |
|   | d.  | Σ*X*2 – 4 |

|  |  |
| --- | --- |
| *ANSWER:* | c |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 48. Which of the following is done last in the order of operations?

|  |  |  |
| --- | --- | --- |
|   | a.  | Squaring |
|   | b.  | Multiplication |
|   | c.  | Addition |
|   | d.  | Summation (S) |

|  |  |
| --- | --- |
| *ANSWER:* | c |

 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 49. Using the average score to describe a sample is an example of inferential statistics.​

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | False |

 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50. Using the election results from a sample of *n* = 100 voters to predict the results for the entire state is an example of inferential statistics.​

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |

 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 51. A researcher is interested in the average income for registered voters in the United States. The entire group of registered voters is an example of a population.​

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |

 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 52. A researcher interested in vocabulary development obtains a sample of 3-year-old children to participate in a research study. The average score for the group of children is an example of a parameter.​

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | False |

 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 53. The goal for an experiment is to demonstrate that changes in one variable are responsible for causing changes in a second variable.​

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |

 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 54. A correlational study typically uses only one group of participants but measures two different variables (two scores) for each individual.​

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |

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|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 55. A recent study found a correlation between gum disease and heart disease. This result indicates that gum disease causes people to develop heart disease.​

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | False |

 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 56. A correlational study is used to examine the relationship between two variables but cannot determine whether it is a cause-and-effect relationship.​

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |

 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 57. A recent report concluded that children with siblings have better social skills than children who grow up as an only child. This is an example of an experimental study.​

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | False |

 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 58. A recent report concluded that college graduates have higher life-satisfaction scores than individuals who do not receive college degrees. For this study, graduating versus not graduating is an example of a quasi-independent variable.​

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |

 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 59. A discrete variable must be measured on a nominal or an ordinal scale.​

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | False |

 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 60. ​Classifying people into two groups on the basis of gender is an example of measurement on an ordinal scale.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | False |

 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 61. To determine how much difference there is between two individuals, you must use either an interval or a ratio scale of measurement.​

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |

 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 62. If a researcher measures two individuals on a nominal scale, it is impossible to determine which individual has the larger score.​

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | False |

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|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 63. If a researcher measures two individuals on an ordinal scale, it is impossible to determine how much difference exists between the two people.​

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |

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|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 64. For statistical purposes, there usually is not much reason to differentiate between interval and ratio scales.​

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |

 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 65. Recording the number of text messages you receive each day would be an example of measuring a discrete variable.​

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |

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|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 66. A high school gym teacher records how much time each student requires to complete a one-mile run. This is an example of measuring a continuous variable.​

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |

 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 67. In an introductory theater class, the professor records each student’s favorite movie from the previous year. The teacher is measuring a discrete variable.​

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |

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|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 68. A data set is described as consisting of *n* = 15 scores. Based on the notation being used, the data set is a sample.​

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |

 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 69. ​To compute Σ*X*2, you first add the scores, then square the total.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | False |

 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 70. The first step in computing Σ(*X* + 1) is to add 1 point to each score.​

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |

 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 71. The final step in computing Σ(*X* + 1)2 is to square the sum of the (*X* + 1) values.​

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | False |

 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 72. For the following scores, S*X*2 = (S*X*)2.       Scores:  1, 1, 1, 1​

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | False |

 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 73. For the following scores, Σ(*X* + 1) = 9.            Scores: 1, 3, 0, 1​

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |

 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 74. For the following scores, Σ(*X* + 1)2 = 81.     Scores: 1, 3, 0, 1​

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | False |

 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 75. For the following scores, Σ*X*2 = 35.     Scores:  1, 3, 5​

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |

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|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 76. For the following scores, Σ*X*2 = 49.     Scores: 1, 4, 2, 0​

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | False |

 |

|  |  |  |
| --- | --- | --- |
| 77. Statistical techniques are classified into two major categories: descriptive and inferential. Describe the general purpose of each category.

|  |  |
| --- | --- |
| *ANSWER:* | The purpose of descriptive statistics is to summarize and simplify the organization and presentation of data. The purpose of inferential statistics is to use the limited data from a sample as the basis for making general conclusions about the population. |

 |

|  |  |  |
| --- | --- | --- |
| 78. Define the concept of “sampling error.”  Note: your definition should include the concepts of sample, population, statistic, and parameter.

|  |  |
| --- | --- |
| *ANSWER:* | A *parameter* is a value that is obtained from a *population* of scores and is used to describe the population. A *statistic* is a value obtained from a *sample* and used to describe the sample. Typically, it is impossible to obtain measurements for an entire population, so researchers must rely on information from samples; that is, researchers use statistics to obtain information about unknown parameters. However, samples provide only limited information about their populations. Thus, sample statistics are usually not identical to their corresponding population parameters. The error or discrepancy between a statistic and the corresponding parameter is called *sampling error*. |

 |

|  |  |  |
| --- | --- | --- |
| 79. Describe the sequence of mathematical operations that would be used to evaluate each of the following expressions:            a.  Σ*X*2            b.  (Σ*X*)2            c.  Σ*X* – 2            d.  Σ(*X* – 2)            e.  Σ(*X* – 2)2​

|  |  |
| --- | --- |
| *ANSWER:* | a. Square each score, then sum the squared values.b. Sum the scores, then square the sum.c. Sum the scores, then subtract 2 from the sum.d. Subtract 2 from each score, then sum the resulting values. e. First, subtract 2 from each score, then square the resulting values, then sum the squared numbers.​ |

 |

|  |  |  |
| --- | --- | --- |
| 80. Calculate each value requested for the following set of scores.     Scores:  2, 3, 0, 5                      a.   Σ*X*            b.   Σ*X*2            c.   (Σ*X*)2​

|  |  |
| --- | --- |
| *ANSWER:* | a.  10b. 38c. (10)2 = 100 |

 |

|  |  |  |
| --- | --- | --- |
| 81. Calculate each value requested for the following set of scores.  Scores:  3, 4, 2, 6            a.   Σ*X* – 2            b.   Σ(*X* – 2)            c.   Σ(*X* – 2)2​

|  |  |
| --- | --- |
| *ANSWER:* | a.  13b.  7c. 21​ |

 |

|  |  |  |
| --- | --- | --- |
| 82. Calculate each value requested for the following set of scores.                  a.    Σ*X*                                   *X*     *Y*             b.    Σ*Y*                                     1     5            c.    Σ*X*Σ*Y*                                3     1            d.    Σ*XY*                                  0   –2                                                            2   –4​

|  |  |
| --- | --- |
| *ANSWER:* | a.         6b.         0c.         0d.         0​ |

 |