Chapter 01

|  |  |
| --- | --- |
| 1. | A knowledge of statistics provides the necessary tools to differentiate between sound and questionable conclusions.    True    False |

|  |  |
| --- | --- |
| 2. | Statistics is the methodology of extracting unnecessary information from a data set.    True    False |

|  |  |
| --- | --- |
| 3. | The branch of statistical studies called *descriptive statistics* summarizes important aspects of a data set.    True    False |

|  |  |
| --- | --- |
| 4. | The branch of statistical studies called *inferential statistics* refers to drawing conclusions about sample data by analyzing the corresponding population.    True    False |

|  |  |
| --- | --- |
| 5. | A population is a larger data set than its corresponding sample.    True    False |

|  |  |
| --- | --- |
| 6. | Population parameters are used to estimate corresponding sample statistics.    True    False |

|  |  |
| --- | --- |
| 7. | Typically, it is possible to examine every member of the population.    True    False |

|  |  |
| --- | --- |
| 8. | Cross-sectional data contain values of a characteristic of one subject collected over time.    True    False |

|  |  |
| --- | --- |
| 9. | Time series data contain values of a characteristic of a subject over time.    True    False |

|  |  |
| --- | --- |
| 10. | Sampling is often necessary due to the potential cost and time of gathering population data.    True    False |

|  |  |
| --- | --- |
| 11. | Sampling allows researchers to draw conclusions about the population.    True    False |

|  |  |
| --- | --- |
| 12. | A qualitative variable assumes meaningful numerical values.    True    False |

|  |  |
| --- | --- |
| 13. | Both discrete and continuous variables may assume an uncountable number of values.    True    False |

|  |  |
| --- | --- |
| 14. | A discrete variable cannot assume an infinite number of values.    True    False |

|  |  |
| --- | --- |
| 15. | A continuous variable assumes any value from an interval (or collection of intervals).    True    False |

|  |  |
| --- | --- |
| 16. | A professor's gender (male, female) as well as rank (assistant, associate, full) represent ordinal data.    True    False |

|  |  |
| --- | --- |
| 17. | A professor's rank (assistant, associate, and full), as well as salary, represent ordinal data.    True    False |

|  |  |
| --- | --- |
| 18. | Many people believe that statistics has no use in real life.    True    False |

|  |  |
| --- | --- |
| 19. | The weather forecast cannot be based on only the weather for the last three days.    True    False |

|  |  |
| --- | --- |
| 20. | Data and data interpretation do not show up in every facet of life.    True    False |

|  |  |
| --- | --- |
| 21. | A population is defined as all possible subjects of a specific group.    True    False |

|  |  |
| --- | --- |
| 22. | Researchers use sample results in an attempt to estimate an unknown population statistic.    True    False |

|  |  |
| --- | --- |
| 23. | The recorded body temperature of patients in the group of patients under research study is an example of time series data.    True    False |

|  |  |
| --- | --- |
| 24. | Body weight is an example of a discrete variable.    True    False |

|  |  |
| --- | --- |
| 25. | The mathematical operation of addition can be performed on nominal data.    True    False |

|  |  |
| --- | --- |
| 26. | A ZIP code is an example of quantitative data.    True    False |

|  |  |
| --- | --- |
| 27. | Ordinal scale reflects a stronger level of measurement than the nominal scale.    True    False |

|  |  |
| --- | --- |
| 28. | All mathematical operations can be performed on ratio-scaled data.    True    False |

|  |  |
| --- | --- |
| 29. | A respondent to a survey indicates that she drives a Nissan Pathfinder. This is an example of qualitative data.    True    False |

|  |  |
| --- | --- |
| 30. | The zero point of an interval scale reflects a complete absence of what is being measured.    True    False |

|  |  |
| --- | --- |
| 31. | Nominal and interval scales are used for qualitative variables.    True    False |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 32. | The study of statistics can be defined as      |  |  | | --- | --- | | A. | the language of data. |  |  |  | | --- | --- | | B. | the art and science of getting information from data. |  |  |  | | --- | --- | | C. | the study of collecting, analyzing, presenting, and interpreting data. |  |  |  | | --- | --- | | D. | All of these choices are correct. | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 33. | When reading published statistics (numerical facts), you should      |  |  | | --- | --- | | A. | never believe what you read, becauseall statistics are lies. |  |  |  | | --- | --- | | B. | only believe those statistics that are adequately supported. |  |  |  | | --- | --- | | C. | believe what you read, becausethey wouldn’t be published if they weren’t correct. |  |  |  | | --- | --- | | D. | only believe those statistics that are presented in so-called quality publications. | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 34. | The two branches of the study of statistics are generally referred to as      |  |  | | --- | --- | | A. | descriptive and inferential statistics. |  |  |  | | --- | --- | | B. | inferential and differential statistics. |  |  |  | | --- | --- | | C. | descriptive and referential statistics. |  |  |  | | --- | --- | | D. | differential and descriptive statistics. | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 35. | Population parameters are difficult to calculate due to      |  |  | | --- | --- | | A. | cost prohibitions on data collection. |  |  |  | | --- | --- | | B. | the infeasibility of collecting data on the entire population. |  |  |  | | --- | --- | | C. | the fact that samples are difficult to draw due to the nature of the data. |  |  |  | | --- | --- | | D. | both cost prohibitions on data collection and the infeasibility of collecting data on the entire population. | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 36. | The teachers’ union in California wants to know the average salary for high school teachers throughout the country. What is the teachers’ union presumably planning to calculate?      |  |  | | --- | --- | | A. | Sample statistic |  |  |  | | --- | --- | | B. | Sample parameter |  |  |  | | --- | --- | | C. | Population statistic |  |  |  | | --- | --- | | D. | Population parameter | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 37. | A population consists of      |  |  | | --- | --- | | A. | all items of interest in a sample. |  |  |  | | --- | --- | | B. | a subject of interest in a sample. |  |  |  | | --- | --- | | C. | all items of interest in a statistical problem. |  |  |  | | --- | --- | | D. | a subject of interest in a statistical problem. | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 38. | In inferential statistics, we calculate statistics of sample data to      |  |  | | --- | --- | | A. | estimate unknown population parameters. |  |  |  | | --- | --- | | B. | conduct tests about unknown population parameters. |  |  |  | | --- | --- | | C. | Both of these choices are correct. |  |  |  | | --- | --- | | D. | Neither of these choices is correct. | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 39. | Which of the following represents a population and a sample from that population?      |  |  | | --- | --- | | A. | Residents of Albany, New York, and registered voters in Albany, New York |  |  |  | | --- | --- | | B. | Teachers of a high school and members of the parent-teacher group |  |  |  | | --- | --- | | C. | Fans at a concert who purchase T-shirts, and fans at a concert who purchase soda |  |  |  | | --- | --- | | D. | Freshmen at St. Joseph’s University and basketball players at St. Joseph’s University | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 40. | Which of the following is an example of cross-sectional data?      |  |  | | --- | --- | | A. | GDP of the United States from 1990-2010 |  |  |  | | --- | --- | | B. | Daily price of DuPont stock during the first quarter |  |  |  | | --- | --- | | C. | Quarterly housing starts collected over the last 60 years |  |  |  | | --- | --- | | D. | Results of market research testing consumer preferences for soda | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 41. | Which of the following is an example of time series data?      |  |  | | --- | --- | | A. | The sale prices of townhouses sold last year |  |  |  | | --- | --- | | B. | Quarterly housing starts collected over the last 60 years |  |  |  | | --- | --- | | C. | Results of market research testing consumer preferences for soda |  |  |  | | --- | --- | | D. | Starting salaries of recent business graduates at Penn State University | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 42. | The estimation of which of the following requires sampling?      |  |  | | --- | --- | | A. | U.S. unemployment rate |  |  |  | | --- | --- | | B. | Total rainfall in Phoenix, Arizona, in 2010 |  |  |  | | --- | --- | | C. | The Cleveland Indians’ hitting percentage in 2010 |  |  |  | | --- | --- | | D. | The average SAT score of incoming freshmen at a university | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 43. | A company wants to estimate the mean price of oil over the past 10 years. What kind of data does the company need?      |  |  | | --- | --- | | A. | Time series data |  |  |  | | --- | --- | | B. | Inferential statistics |  |  |  | | --- | --- | | C. | Cross-sectional data |  |  |  | | --- | --- | | D. | Descriptive statistics | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 44. | For which of the following population parameters is sampling not necessary?      |  |  | | --- | --- | | A. | The average height of NBA players |  |  |  | | --- | --- | | B. | The average life of light bulbs produced by a manufacturer |  |  |  | | --- | --- | | C. | The average content of cereal boxes produced by a manufacturer |  |  |  | | --- | --- | | D. | The percentage of the U.S. public school teachers who support Democrats | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 45. | Sampling is used heavily in manufacturing and service settings to ensure high-quality products. In which of the following areas would sampling be inappropriate?      |  |  | | --- | --- | | A. | Computer assembly |  |  |  | | --- | --- | | B. | Custom cabinet making |  |  |  | | --- | --- | | C. | Cell phone manufacturing |  |  |  | | --- | --- | | D. | Technical support by phone | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 46. | Which of the following are examples of cross-sectional data?      |  |  | | --- | --- | | A. | The test scores of students in a class |  |  |  | | --- | --- | | B. | The current average prices of regular gasoline in different states |  |  |  | | --- | --- | | C. | The sales prices of single-family homes sold last month in California |  |  |  | | --- | --- | | D. | All of these choices are correct. | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 47. | An analyst studies a data set of the 2011 year-end book value per share for all companies listed on the New York Stock Exchange. This data set is *best* described as      |  |  | | --- | --- | | A. | timeseries data. |  |  |  | | --- | --- | | B. | cross-sectional data. |  |  |  | | --- | --- | | C. | neither timeseries nor cross-sectional data. |  |  |  | | --- | --- | | D. | a combination of timeseries and cross-sectional data. | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 48. | Which type of data, cross-sectional versus time series, is more important to research?      |  |  | | --- | --- | | A. | Neither type of data is important. |  |  |  | | --- | --- | | B. | Cross-sectional data is more important than time series data. |  |  |  | | --- | --- | | C. | Time series data is more important than cross-sectional data. |  |  |  | | --- | --- | | D. | Time series data and cross-sectional data are equally as valuable in different types of research. | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 49. | Which of the following variables is qualitative?      |  |  | | --- | --- | | A. | Height |  |  |  | | --- | --- | | B. | Gender |  |  |  | | --- | --- | | C. | Weight |  |  |  | | --- | --- | | D. | Temperature | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50. | Which of the following variables is quantitative?      |  |  | | --- | --- | | A. | Gender |  |  |  | | --- | --- | | B. | Temperature |  |  |  | | --- | --- | | C. | Marital status |  |  |  | | --- | --- | | D. | Religious affiliation | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 51. | Which of the following is a quantitative variable?      |  |  | | --- | --- | | A. | House age |  |  |  | | --- | --- | | B. | House size |  |  |  | | --- | --- | | C. | House price |  |  |  | | --- | --- | | D. | All of these choices are correct. | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 52. | San Francisco 49ers’ linebacker Patrick Willis won the Defensive Rookie of the Year Award in 2007 with a total of 174 tackles. Tackles are measured on what kind of a scale? Is a variable measuring the number of tackles considered continuous or discrete?      |  |  | | --- | --- | | A. | Ratio scale; discrete |  |  |  | | --- | --- | | B. | Interval scale; discrete |  |  |  | | --- | --- | | C. | Ratio scale; continuous |  |  |  | | --- | --- | | D. | Interval scale; continuous | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 53. | Which of the following variables is not continuous?      |  |  | | --- | --- | | A. | Height of NBA players |  |  |  | | --- | --- | | B. | Time of a flight between Atlanta and Chicago |  |  |  | | --- | --- | | C. | Average temperature in the month of July in Orlando |  |  |  | | --- | --- | | D. | The number of obtained heads when a fair coin is tossed 20 times | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 54. | The ordinal scale of data measurement is      |  |  | | --- | --- | | A. | less sophisticated than the nominal scale. |  |  |  | | --- | --- | | B. | more sophisticated than the interval scale. |  |  |  | | --- | --- | | C. | more sophisticated than the nominal scale. |  |  |  | | --- | --- | | D. | as equally sophisticated as the nominal scale. | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 55. | The interval scale of data measurement is      |  |  | | --- | --- | | A. | less sophisticated than the ratio scale. |  |  |  | | --- | --- | | B. | more sophisticated than the ratio scale. |  |  |  | | --- | --- | | C. | less sophisticated than the ordinal scale. |  |  |  | | --- | --- | | D. | equally sophisticated as the ratio scale because both are appropriate for quantitative data. | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 56. | A recent survey of 200 small firms (annual revenue less than $10 million) asked whether an increase in the minimum wage would cause the firm to decrease capital spending. Possible responses to the survey question were: "Yes," "No," or "Don’t Know." This data is *best* classified as      |  |  | | --- | --- | | A. | ratio scale. |  |  |  | | --- | --- | | B. | ordinal scale. |  |  |  | | --- | --- | | C. | interval scale. |  |  |  | | --- | --- | | D. | nominal scale. | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 57. | Which scale of data measurement is appropriate for the names of companies listed on the Dow Jones Industrial Average?      |  |  | | --- | --- | | A. | Ratio scale |  |  |  | | --- | --- | | B. | Ordinal scale |  |  |  | | --- | --- | | C. | Interval scale |  |  |  | | --- | --- | | D. | Nominal scale | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 58. | An analyst collects data on the weekly closing price of gold throughout a year. The scale of this data is      |  |  | | --- | --- | | A. | ratio scale. |  |  |  | | --- | --- | | B. | ordinal scale. |  |  |  | | --- | --- | | C. | interval scale. |  |  |  | | --- | --- | | D. | nominal scale. | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 59. | An undergraduate student’s status (freshman, sophomore, junior, or senior) is an example of which scale of measurement?      |  |  | | --- | --- | | A. | Ratio scale |  |  |  | | --- | --- | | B. | Ordinal scale |  |  |  | | --- | --- | | C. | Interval scale |  |  |  | | --- | --- | | D. | Nominal scale | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 60. | The Fahrenheit scale for measuring temperature would be classified as a(n)      |  |  | | --- | --- | | A. | ratio scale. |  |  |  | | --- | --- | | B. | ordinal scale. |  |  |  | | --- | --- | | C. | interval scale. |  |  |  | | --- | --- | | D. | nominal scale. | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 61. | At the end of a semester college students evaluate their instructors by assigning them to one of the following categories: Excellent, Good, Average, Below Average, and Poor. The measurement scale is a(n)      |  |  | | --- | --- | | A. | ratio scale. |  |  |  | | --- | --- | | B. | ordinal scale. |  |  |  | | --- | --- | | C. | interval scale. |  |  |  | | --- | --- | | D. | nominal scale. | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 62. | What is the scale of measurement of the distance between any two locations?      |  |  | | --- | --- | | A. | Ratio scale |  |  |  | | --- | --- | | B. | Ordinal scale |  |  |  | | --- | --- | | C. | Interval scale |  |  |  | | --- | --- | | D. | Nominal scale | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 63. | Which scales of data measurement are associated with quantitative data?      |  |  | | --- | --- | | A. | Interval and ratio |  |  |  | | --- | --- | | B. | Ratio and nominal |  |  |  | | --- | --- | | C. | Ordinal and interval |  |  |  | | --- | --- | | D. | Nominal and ordinal | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 64. | Which data scales of measurement are associated with qualitative data?      |  |  | | --- | --- | | A. | Interval and ratio |  |  |  | | --- | --- | | B. | Ratio and nominal |  |  |  | | --- | --- | | C. | Ordinal and interval |  |  |  | | --- | --- | | D. | Nominal and ordinal | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 65. | The data represents the stock price for Google at the end of the past four quarters. Which of the following types of data best describe these values?      |  |  | | --- | --- | | A. | Cross-sectional |  |  |  | | --- | --- | | B. | Nominal |  |  |  | | --- | --- | | C. | Time series |  |  |  | | --- | --- | | D. | Ordinal | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 66. | Your business statistics class had a test last week. The average score for the class is an example of      |  |  | | --- | --- | | A. | secondary data |  |  |  | | --- | --- | | B. | qualitative data |  |  |  | | --- | --- | | C. | descriptive statistics |  |  |  | | --- | --- | | D. | inferential statistics | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 67. | A sample statistic is an estimate of      |  |  | | --- | --- | | A. | population parameter. |  |  |  | | --- | --- | | B. | population statistic. |  |  |  | | --- | --- | | C. | sample parameter. |  |  |  | | --- | --- | | D. | descriptive statistic. | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 68. | A \_\_\_\_\_\_\_\_\_\_\_ represents all possible subjects of interest.      |  |  | | --- | --- | | A. | sample |  |  |  | | --- | --- | | B. | population |  |  |  | | --- | --- | | C. | statistic |  |  |  | | --- | --- | | D. | parameter | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 69. | A major portion of \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is concerned with the problem of estimating population parameters or testing hypothesis about such parameters.      |  |  | | --- | --- | | A. | descriptive statistics |  |  |  | | --- | --- | | B. | population statistics |  |  |  | | --- | --- | | C. | inferential statistics |  |  |  | | --- | --- | | D. | business statistics | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 70. | Data that describe a characteristic about a sample is known as a      |  |  | | --- | --- | | A. | population. |  |  |  | | --- | --- | | B. | survey. |  |  |  | | --- | --- | | C. | parameter. |  |  |  | | --- | --- | | D. | statistic. | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 71. | When a characteristic of interest differs among various observations, then it can be termed a      |  |  | | --- | --- | | A. | parameter. |  |  |  | | --- | --- | | B. | variable. |  |  |  | | --- | --- | | C. | data. |  |  |  | | --- | --- | | D. | information. | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 72. | A(n) \_\_\_\_\_\_\_\_\_\_\_\_ variable is characterized by infinitely uncountable values and can take any value within interval.      |  |  | | --- | --- | | A. | discrete |  |  |  | | --- | --- | | B. | infinite |  |  |  | | --- | --- | | C. | continuous |  |  |  | | --- | --- | | D. | quantitative | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 73. | Differences between categories are meaningless with \_\_\_\_\_\_\_\_\_ data.      |  |  | | --- | --- | | A. | ordinal |  |  |  | | --- | --- | | B. | interval |  |  |  | | --- | --- | | C. | ratio |  |  |  | | --- | --- | | D. | continuous | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 74. | Which of the following scales represents the strongest level of measurement?      |  |  | | --- | --- | | A. | Ordinal |  |  |  | | --- | --- | | B. | Nominal |  |  |  | | --- | --- | | C. | Ratio |  |  |  | | --- | --- | | D. | Interval | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 75. | Which of the following scales represents the less sophisticated level of measurement?      |  |  | | --- | --- | | A. | Ordinal |  |  |  | | --- | --- | | B. | Nominal |  |  |  | | --- | --- | | C. | Ratio |  |  |  | | --- | --- | | D. | Interval | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 76. | The values of data on a(n) \_\_\_\_\_\_\_\_\_\_ scale can be categorized and ranked.      |  |  | | --- | --- | | A. | ordinal |  |  |  | | --- | --- | | B. | nominal |  |  |  | | --- | --- | | C. | ratio |  |  |  | | --- | --- | | D. | interval | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 77. | Which of the following characteristicsdoes the interval scale not have?      |  |  | | --- | --- | | A. | Values can be categorized. |  |  |  | | --- | --- | | B. | Values can be ranked. |  |  |  | | --- | --- | | C. | There is a true zero point. |  |  |  | | --- | --- | | D. | The differences between values are valid. | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 78. | Which of the following is an example of quantitative data?      |  |  | | --- | --- | | A. | The ZIP code of your home address |  |  |  | | --- | --- | | B. | Google’s closing stock price today |  |  |  | | --- | --- | | C. | Your gender |  |  |  | | --- | --- | | D. | Your Social Security number | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 79. | Which of the following is an example of qualitative data?      |  |  | | --- | --- | | A. | Today’s high temperature |  |  |  | | --- | --- | | B. | The class average of last test |  |  |  | | --- | --- | | C. | The amount of time you spent for your homework |  |  |  | | --- | --- | | D. | Your last name | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 80. | A respondent of a survey is asked whether the Philadelphia Flyers’ performance in the last game was excellent, good, fair, or poor. The person indicates that the performance was "good." This is an example of      |  |  | | --- | --- | | A. | nominal data |  |  |  | | --- | --- | | B. | ordinal data |  |  |  | | --- | --- | | C. | interval data |  |  |  | | --- | --- | | D. | ratio data | |

|  |  |
| --- | --- |
| 81. | Philadelphia experienced a record amount of rainfall in August of 2011. During the last week of the month, the city received additional rain from a hurricane. Becauseglobal warming is thought to cause extreme weather patterns, one conclusion that could be drawn is that these patterns are evidence of global warming. What is wrong with this conclusion? |

|  |  |
| --- | --- |
| 82. | Administrators have concluded that the SAT exam results for 2011 show a distinct change in student capabilities when compared with the year 1991. In 1991 the SAT exam included only multiple choice sections and was later redesigned. What is wrong with this conclusion? |

|  |  |
| --- | --- |
| 83. | A university is interested in tracking the success of its graduates by measuring the length of each graduate’s job search before getting a position in his or her chosen field. How would you define the appropriate population? |

|  |  |
| --- | --- |
| 84. | We would like to determine whether there is a difference between the height of a college team of basketball players at the Ohio State University and the height of the overall student body. Identify the two populations in this study. |

|  |  |
| --- | --- |
| 85. | In each of the following statements, determine whether the branch of statistics is best classified as descriptive statistics or inferential statistics. The average of a data set is equal to 35.7. The minimum value of a data set is 78, and the maximum value is 146. Because the average age in a sample is 23, it is likely that the average age in the population is about 23. Because the values in the sample are so widely dispersed, the spread of the population must be high. |

|  |  |
| --- | --- |
| 86. | A car company wants to know the average age of cars of their brand that are still on the road. How would you define the appropriate population? Will the car company calculate a population parameter or a sample statistic? Why? |

|  |  |
| --- | --- |
| 87. | What are the primary reasons that sampling is necessary? |

|  |  |
| --- | --- |
| 88. | An investor wants to know today’s average closing price of the stocks listed on the Standard and Poor’s 500 Index. Will the investor calculate a population parameter or sample statistic? Why? |

|  |  |
| --- | --- |
| 89. | We would like to determine the average height of a college team of basketball players at Ohio State University. Is it necessary to take a sample of basketball players? Explain. |

|  |  |
| --- | --- |
| 90. | We would like to determine the average height of the overall student body at Ohio State University. Does it seem necessary to take a sample from the overall student body? |

|  |  |
| --- | --- |
| 91. | Researchers are interested in completing a study examining trends in the sale of foods in the U.S. They have decided to examine the quantity of organic vegetables sold by supermarkets. Will researchers be able to gather population data? |

|  |  |
| --- | --- |
| 92. | Every 10 years, a census is taken in the U.S. by the Census Bureau. Despite the intent of gathering data on the population of the United States, issues exist that make true population data impossible to gather. Identify at least two issues in collecting these data. |

|  |  |
| --- | --- |
| 93. | Social networking sites support themselves in large part by selling advertising space. The hit rate on these ads is a critical measure when trying to solicit advertising. The hit rate is used as a measure of success for ads. How would you recommend a social networking site use sampling to evaluate its existing ads? |

|  |  |
| --- | --- |
| 94. | The following table includes the number of white women over the age of 20 in the civilian labor force. Because it is time series data, what would the entries of the first column refer to?        Source: http://data.bls.gov |

|  |  |
| --- | --- |
| 95. | A study of teen smoking is planned. Researchers are interested in collecting cross-sectional data, which allow them to draw conclusions about the likelihood, frequency, and longevity of teen smoking. You have been asked to design this study and will collect no more than five pieces of data. What information will you collect? |

|  |  |
| --- | --- |
| 96. | Define the measurement scale of a car’s fuel efficiency (measured in miles per gallon). Is a car’s fuel efficiency discrete or continuous? |

|  |  |
| --- | --- |
| 97. | A study of teen smoking is planned. Researchers are interested in collecting data which allow them to draw conclusions about the likelihood, frequency, and longevity of teen smoking. The questions asked include: “What is your gender?”, “What is your age?”, “Do you smoke (yes or no)?”, “How many cigarettes per day do you smoke?”, “For how long have you smoked (in years)?” What is the measurement scale for each variable? |

|  |  |
| --- | --- |
| 98. | The following data represent a sample of property sales in Cape May County during the year 2000. Identify the qualitative and quantitative variables. What are the natural categories for Town and Class? Identify the measurement scales for all variables. |

|  |  |
| --- | --- |
| 99. | The following data represent a sample of non-elementary mathematics teachers in Bergen County, New Jersey. Identify the qualitative and quantitative variables, the categories associated with each qualitative variable, and the measurement scales for all variables.        Source: http://php.app.com/edstaff/results2.php?county=BERGEN&district=%25&school=%25&lname=&fname=&job1=Math+Non-Elementary&Submit=Submit |

|  |  |
| --- | --- |
| 100. | The following data concern a sample of employees of the U.S. Marshalls in the state of New York. Identify the qualitative and quantitative variables, the categories associated with each qualitative variable, and the measurement scales for all variables.        Source: http://php.app.com/fed\_employees10/results.php?fullname=&agency\_name=U.S.+MARSHALS+SERVICE&statename=New+York&countyname=%25&Submit=Search |

Chapter 01 Key

|  |  |
| --- | --- |
| 1. | A knowledge of statistics provides the necessary tools to differentiate between sound and questionable conclusions.    **TRUE**  To make intelligent decisions we all have to understand statistics – the language of data. |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Remember Difficulty: 1 Easy Jaggia - Chapter 01 #1 Learning Objective: 01-01 Describe the importance of statistics. Topic: The Relevance of Statistics* |

|  |  |
| --- | --- |
| 2. | Statistics is the methodology of extracting unnecessary information from a data set.    **FALSE**  Statistics is the methodology of extracting useful information from a data set. |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Remember Difficulty: 1 Easy Jaggia - Chapter 01 #2 Learning Objective: 01-01 Describe the importance of statistics. Topic: The Relevance of Statistics* |

|  |  |
| --- | --- |
| 3. | The branch of statistical studies called *descriptive statistics* summarizes important aspects of a data set.    **TRUE**  Descriptive statistics refers to the summary of important aspects of a data set. |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Remember Difficulty: 1 Easy Jaggia - Chapter 01 #3 Learning Objective: 01-02 Differentiate between descriptive statistics and inferential statistics. Topic: What Is Statistics?* |

|  |  |
| --- | --- |
| 4. | The branch of statistical studies called *inferential statistics* refers to drawing conclusions about sample data by analyzing the corresponding population.    **FALSE**  Inferential statistics refers to drawing conclusions about a population from analyzing sample data. |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Remember Difficulty: 1 Easy Jaggia - Chapter 01 #4 Learning Objective: 01-02 Differentiate between descriptive statistics and inferential statistics. Topic: What Is Statistics?* |

|  |  |
| --- | --- |
| 5. | A population is a larger data set than its corresponding sample.    **TRUE**  A population is defined as all members of a specified group. |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Remember Difficulty: 1 Easy Jaggia - Chapter 01 #5 Learning Objective: 01-03 Explain the need for sampling and discuss various data types. Topic: What Is Statistics?* |

|  |  |
| --- | --- |
| 6. | Population parameters are used to estimate corresponding sample statistics.    **FALSE**  Sample statistics are used to estimate corresponding population parameters. |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #6 Learning Objective: 01-03 Explain the need for sampling and discuss various data types. Topic: What Is Statistics?* |

|  |  |
| --- | --- |
| 7. | Typically, it is possible to examine every member of the population.    **FALSE**  Typically, it is too expensive, too time-consuming, or even impossible to examine every member of the population. |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #7 Learning Objective: 01-03 Explain the need for sampling and discuss various data types. Topic: What Is Statistics?* |

|  |  |
| --- | --- |
| 8. | Cross-sectional data contain values of a characteristic of one subject collected over time.    **FALSE**  Cross-sectional data contain values of a characteristic of many subjects collected at the same or similar point of time. |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #8 Learning Objective: 01-03 Explain the need for sampling and discuss various data types. Topic: What Is Statistics?* |

|  |  |
| --- | --- |
| 9. | Time series data contain values of a characteristic of a subject over time.    **TRUE**  Time series can include daily, weekly, monthly, quarterly, and annual observations. |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #9 Learning Objective: 01-03 Explain the need for sampling and discuss various data types. Topic: What Is Statistics?* |

|  |  |
| --- | --- |
| 10. | Sampling is often necessary due to the potential cost and time of gathering population data.    **TRUE**  Obtaining information on entire population is expensive. |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Remember Difficulty: 1 Easy Jaggia - Chapter 01 #10 Learning Objective: 01-03 Explain the need for sampling and discuss various data types. Topic: What Is Statistics?* |

|  |  |
| --- | --- |
| 11. | Sampling allows researchers to draw conclusions about the population.    **TRUE**  Sampling is used to get an estimate of population parameters. |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Apply Difficulty: 3 Hard Jaggia - Chapter 01 #11 Learning Objective: 01-03 Explain the need for sampling and discuss various data types. Topic: What Is Statistics?* |

|  |  |
| --- | --- |
| 12. | A qualitative variable assumes meaningful numerical values.    **FALSE**  A quantitative variable assumes meaningful numerical values, while values of a qualitative variable are typically described in words. |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Remember Difficulty: 1 Easy Jaggia - Chapter 01 #12 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |
| --- | --- |
| 13. | Both discrete and continuous variables may assume an uncountable number of values.    **FALSE**  A discrete variable assumes a countable number of values because these values can be put in a sequence *x*1, *x*2, *x*3, and so on. Even if this sequence is infinite, its values can be counted as the first, the second, the third one, and so on. On the other hand, a continuous variable assumes any value from an interval, and such values cannot be counted (there are too many of them). |

|  |
| --- |
| *AACSB: Analytical Thinking Blooms: Apply Difficulty: 3 Hard Jaggia - Chapter 01 #13 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |
| --- | --- |
| 14. | A discrete variable cannot assume an infinite number of values.    **FALSE**  The number of obtained heads when a fair coin is tossed an infinite number of times may potentially assume any distinct integer value. An upper bound on this number does not exist. |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #14 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |
| --- | --- |
| 15. | A continuous variable assumes any value from an interval (or collection of intervals).    **TRUE**  A continuous variable is characterized by infinitely uncountable values and can take any value within an interval. |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #15 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |
| --- | --- |
| 16. | A professor's gender (male, female) as well as rank (assistant, associate, full) represent ordinal data.    **FALSE**  Professor's gender is nominal and rank is ordinal. The categories for nominal data do not have any natural ordering, while such an ordering exists for ordinal data. |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #16 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |
| --- | --- |
| 17. | A professor's rank (assistant, associate, and full), as well as salary, represent ordinal data.    **FALSE**  Professor's rank is ordinal but the salary is ratio. A quantitative data with ratio scale of measurement has a meaningful zero point, and hence all ratio values are naturally interpretable. |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #17 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |
| --- | --- |
| 18. | Many people believe that statistics has no use in real life.    **FALSE**  Statistics used to make intelligent decisions, and we all have to understand it. |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Remember Difficulty: 1 Easy Jaggia - Chapter 01 #18 Learning Objective: 01-01 Describe the importance of statistics. Topic: The Relevance of Statistics* |

|  |  |
| --- | --- |
| 19. | The weather forecast cannot be based on only the weather for the last three days.    **TRUE**  Weather forecast is based on a lot of data collected over years. |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #19 Learning Objective: 01-01 Describe the importance of statistics. Topic: The Relevance of Statistics* |

|  |  |
| --- | --- |
| 20. | Data and data interpretation do not show up in every facet of life.    **FALSE**  Data and data interpretation show up in virtually every facet of life. |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Remember Difficulty: 1 Easy Jaggia - Chapter 01 #20 Learning Objective: 01-01 Describe the importance of statistics. Topic: The Relevance of Statistics* |

|  |  |
| --- | --- |
| 21. | A population is defined as all possible subjects of a specific group.    **TRUE**  A population is defined as all members of a specific group (not necessarily people). |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #21 Learning Objective: 01-02 Differentiate between descriptive statistics and inferential statistics. Topic: What Is Statistics?* |

|  |  |
| --- | --- |
| 22. | Researchers use sample results in an attempt to estimate an unknown population statistic.    **FALSE**  Researchers use sample results in an attempt to estimate an unknown population parameter. |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #22 Learning Objective: 01-01 Describe the importance of statistics. Topic: What Is Statistics?* |

|  |  |
| --- | --- |
| 23. | The recorded body temperature of patients in the group of patients under research study is an example of time series data.    **FALSE**  The recorded body temperature of patients in the group of patients under research study is an example of cross-sectional data. |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #23 Learning Objective: 01-03 Explain the need for sampling and discuss various data types. Topic: What Is Statistics?* |

|  |  |
| --- | --- |
| 24. | Body weight is an example of a discrete variable.    **FALSE**  Body weight is a continuous variable. |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #24 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |
| --- | --- |
| 25. | The mathematical operation of addition can be performed on nominal data.    **FALSE**  The only thing we can do with nominal data is to categorize or group them. |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #25 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |
| --- | --- |
| 26. | A ZIP code is an example of quantitative data.    **FALSE**  ZIP code is an example of qualitative data. |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #26 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |
| --- | --- |
| 27. | Ordinal scale reflects a stronger level of measurement than the nominal scale.    **TRUE**  With ordinal data we are able both to categorize and rank the data with respect to some characteristic. |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Remember Difficulty: 1 Easy Jaggia - Chapter 01 #27 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |
| --- | --- |
| 28. | All mathematical operations can be performed on ratio-scaled data.    **TRUE**  Arithmetic operations are valid on ratio-scaled data. |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #28 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |
| --- | --- |
| 29. | A respondent to a survey indicates that she drives a Nissan Pathfinder. This is an example of qualitative data.    **TRUE**  The car’s model can only be categorized. |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #29 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |
| --- | --- |
| 30. | The zero point of an interval scale reflects a complete absence of what is being measured.    **FALSE**  The zero point of an interval scale does not reflect a complete absence of what is being measured; the value of zero is arbitrary chosen. |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #30 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |
| --- | --- |
| 31. | Nominal and interval scales are used for qualitative variables.    **FALSE**  An interval scale is used for quantitative variables, and the nominal scale is used for qualitative variables. |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Remember Difficulty: 1 Easy Jaggia - Chapter 01 #31 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 32. | The study of statistics can be defined as      |  |  | | --- | --- | | A. | the language of data. |  |  |  | | --- | --- | | B. | the art and science of getting information from data. |  |  |  | | --- | --- | | C. | the study of collecting, analyzing, presenting, and interpreting data. |  |  |  | | --- | --- | | **D.** | All of these choices are correct. | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #32 Learning Objective: 01-01 Describe the importance of statistics. Topic: The Relevance of Statistics* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 33. | When reading published statistics (numerical facts), you should      |  |  | | --- | --- | | A. | never believe what you read, becauseall statistics are lies. |  |  |  | | --- | --- | | **B.** | only believe those statistics that are adequately supported. |  |  |  | | --- | --- | | C. | believe what you read, becausethey wouldn’t be published if they weren’t correct. |  |  |  | | --- | --- | | D. | only believe those statistics that are presented in so-called quality publications. | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #33 Learning Objective: 01-01 Describe the importance of statistics. Topic: The Relevance of Statistics* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 34. | The two branches of the study of statistics are generally referred to as      |  |  | | --- | --- | | **A.** | descriptive and inferential statistics. |  |  |  | | --- | --- | | B. | inferential and differential statistics. |  |  |  | | --- | --- | | C. | descriptive and referential statistics. |  |  |  | | --- | --- | | D. | differential and descriptive statistics. | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #34 Learning Objective: 01-02 Differentiate between descriptive statistics and inferential statistics. Topic: What Is Statistics?* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 35. | Population parameters are difficult to calculate due to      |  |  | | --- | --- | | A. | cost prohibitions on data collection. |  |  |  | | --- | --- | | B. | the infeasibility of collecting data on the entire population. |  |  |  | | --- | --- | | C. | the fact that samples are difficult to draw due to the nature of the data. |  |  |  | | --- | --- | | **D.** | both cost prohibitions on data collection and the infeasibility of collecting data on the entire population. | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #35 Learning Objective: 01-02 Differentiate between descriptive statistics and inferential statistics. Topic: What Is Statistics?* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 36. | The teachers’ union in California wants to know the average salary for high school teachers throughout the country. What is the teachers’ union presumably planning to calculate?      |  |  | | --- | --- | | **A.** | Sample statistic |  |  |  | | --- | --- | | B. | Sample parameter |  |  |  | | --- | --- | | C. | Population statistic |  |  |  | | --- | --- | | D. | Population parameter | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Remember Difficulty: 1 Easy Jaggia - Chapter 01 #36 Learning Objective: 01-02 Differentiate between descriptive statistics and inferential statistics. Topic: What Is Statistics?* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 37. | A population consists of      |  |  | | --- | --- | | A. | all items of interest in a sample. |  |  |  | | --- | --- | | B. | a subject of interest in a sample. |  |  |  | | --- | --- | | **C.** | all items of interest in a statistical problem. |  |  |  | | --- | --- | | D. | a subject of interest in a statistical problem. | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Remember Difficulty: 1 Easy Jaggia - Chapter 01 #37 Learning Objective: 01-02 Differentiate between descriptive statistics and inferential statistics. Topic: What Is Statistics?* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 38. | In inferential statistics, we calculate statistics of sample data to      |  |  | | --- | --- | | A. | estimate unknown population parameters. |  |  |  | | --- | --- | | B. | conduct tests about unknown population parameters. |  |  |  | | --- | --- | | **C.** | Both of these choices are correct. |  |  |  | | --- | --- | | D. | Neither of these choices is correct. | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #38 Learning Objective: 01-02 Differentiate between descriptive statistics and inferential statistics. Topic: What Is Statistics?* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 39. | Which of the following represents a population and a sample from that population?      |  |  | | --- | --- | | **A.** | Residents of Albany, New York, and registered voters in Albany, New York |  |  |  | | --- | --- | | B. | Teachers of a high school and members of the parent-teacher group |  |  |  | | --- | --- | | C. | Fans at a concert who purchase T-shirts, and fans at a concert who purchase soda |  |  |  | | --- | --- | | D. | Freshmen at St. Joseph’s University and basketball players at St. Joseph’s University | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #39 Learning Objective: 01-02 Differentiate between descriptive statistics and inferential statistics. Topic: What Is Statistics?* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 40. | Which of the following is an example of cross-sectional data?      |  |  | | --- | --- | | A. | GDP of the United States from 1990-2010 |  |  |  | | --- | --- | | B. | Daily price of DuPont stock during the first quarter |  |  |  | | --- | --- | | C. | Quarterly housing starts collected over the last 60 years |  |  |  | | --- | --- | | **D.** | Results of market research testing consumer preferences for soda | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #40 Learning Objective: 01-03 Explain the need for sampling and discuss various data types. Topic: What Is Statistics?* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 41. | Which of the following is an example of time series data?      |  |  | | --- | --- | | A. | The sale prices of townhouses sold last year |  |  |  | | --- | --- | | **B.** | Quarterly housing starts collected over the last 60 years |  |  |  | | --- | --- | | C. | Results of market research testing consumer preferences for soda |  |  |  | | --- | --- | | D. | Starting salaries of recent business graduates at Penn State University | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #41 Learning Objective: 01-03 Explain the need for sampling and discuss various data types. Topic: What Is Statistics?* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 42. | The estimation of which of the following requires sampling?      |  |  | | --- | --- | | **A.** | U.S. unemployment rate |  |  |  | | --- | --- | | B. | Total rainfall in Phoenix, Arizona, in 2010 |  |  |  | | --- | --- | | C. | The Cleveland Indians’ hitting percentage in 2010 |  |  |  | | --- | --- | | D. | The average SAT score of incoming freshmen at a university | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Apply Difficulty: 3 Hard Jaggia - Chapter 01 #42 Learning Objective: 01-03 Explain the need for sampling and discuss various data types. Topic: What Is Statistics?* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 43. | A company wants to estimate the mean price of oil over the past 10 years. What kind of data does the company need?      |  |  | | --- | --- | | **A.** | Time series data |  |  |  | | --- | --- | | B. | Inferential statistics |  |  |  | | --- | --- | | C. | Cross-sectional data |  |  |  | | --- | --- | | D. | Descriptive statistics | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Remember Difficulty: 1 Easy Jaggia - Chapter 01 #43 Learning Objective: 01-03 Explain the need for sampling and discuss various data types. Topic: What Is Statistics?* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 44. | For which of the following population parameters is sampling not necessary?      |  |  | | --- | --- | | **A.** | The average height of NBA players |  |  |  | | --- | --- | | B. | The average life of light bulbs produced by a manufacturer |  |  |  | | --- | --- | | C. | The average content of cereal boxes produced by a manufacturer |  |  |  | | --- | --- | | D. | The percentage of the U.S. public school teachers who support Democrats | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Apply Difficulty: 3 Hard Jaggia - Chapter 01 #44 Learning Objective: 01-03 Explain the need for sampling and discuss various data types. Topic: What Is Statistics?* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 45. | Sampling is used heavily in manufacturing and service settings to ensure high-quality products. In which of the following areas would sampling be inappropriate?      |  |  | | --- | --- | | A. | Computer assembly |  |  |  | | --- | --- | | **B.** | Custom cabinet making |  |  |  | | --- | --- | | C. | Cell phone manufacturing |  |  |  | | --- | --- | | D. | Technical support by phone | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Apply Difficulty: 3 Hard Jaggia - Chapter 01 #45 Learning Objective: 01-03 Explain the need for sampling and discuss various data types. Topic: What Is Statistics?* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 46. | Which of the following are examples of cross-sectional data?      |  |  | | --- | --- | | A. | The test scores of students in a class |  |  |  | | --- | --- | | B. | The current average prices of regular gasoline in different states |  |  |  | | --- | --- | | C. | The sales prices of single-family homes sold last month in California |  |  |  | | --- | --- | | **D.** | All of these choices are correct. | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Remember Difficulty: 1 Easy Jaggia - Chapter 01 #46 Learning Objective: 01-03 Explain the need for sampling and discuss various data types. Topic: What Is Statistics?* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 47. | An analyst studies a data set of the 2011 year-end book value per share for all companies listed on the New York Stock Exchange. This data set is *best* described as      |  |  | | --- | --- | | A. | timeseries data. |  |  |  | | --- | --- | | **B.** | cross-sectional data. |  |  |  | | --- | --- | | C. | neither timeseries nor cross-sectional data. |  |  |  | | --- | --- | | D. | a combination of timeseries and cross-sectional data. | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Apply Difficulty: 3 Hard Jaggia - Chapter 01 #47 Learning Objective: 01-03 Explain the need for sampling and discuss various data types. Topic: What Is Statistics?* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 48. | Which type of data, cross-sectional versus time series, is more important to research?      |  |  | | --- | --- | | A. | Neither type of data is important. |  |  |  | | --- | --- | | B. | Cross-sectional data is more important than time series data. |  |  |  | | --- | --- | | C. | Time series data is more important than cross-sectional data. |  |  |  | | --- | --- | | **D.** | Time series data and cross-sectional data are equally as valuable in different types of research. | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #48 Learning Objective: 01-03 Explain the need for sampling and discuss various data types. Topic: What Is Statistics?* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 49. | Which of the following variables is qualitative?      |  |  | | --- | --- | | A. | Height |  |  |  | | --- | --- | | **B.** | Gender |  |  |  | | --- | --- | | C. | Weight |  |  |  | | --- | --- | | D. | Temperature | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Remember Difficulty: 1 Easy Jaggia - Chapter 01 #49 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50. | Which of the following variables is quantitative?      |  |  | | --- | --- | | A. | Gender |  |  |  | | --- | --- | | **B.** | Temperature |  |  |  | | --- | --- | | C. | Marital status |  |  |  | | --- | --- | | D. | Religious affiliation | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Remember Difficulty: 1 Easy Jaggia - Chapter 01 #50 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 51. | Which of the following is a quantitative variable?      |  |  | | --- | --- | | A. | House age |  |  |  | | --- | --- | | B. | House size |  |  |  | | --- | --- | | C. | House price |  |  |  | | --- | --- | | **D.** | All of these choices are correct. | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Remember Difficulty: 1 Easy Jaggia - Chapter 01 #51 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 52. | San Francisco 49ers’ linebacker Patrick Willis won the Defensive Rookie of the Year Award in 2007 with a total of 174 tackles. Tackles are measured on what kind of a scale? Is a variable measuring the number of tackles considered continuous or discrete?      |  |  | | --- | --- | | **A.** | Ratio scale; discrete |  |  |  | | --- | --- | | B. | Interval scale; discrete |  |  |  | | --- | --- | | C. | Ratio scale; continuous |  |  |  | | --- | --- | | D. | Interval scale; continuous | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #52 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 53. | Which of the following variables is not continuous?      |  |  | | --- | --- | | A. | Height of NBA players |  |  |  | | --- | --- | | B. | Time of a flight between Atlanta and Chicago |  |  |  | | --- | --- | | C. | Average temperature in the month of July in Orlando |  |  |  | | --- | --- | | **D.** | The number of obtained heads when a fair coin is tossed 20 times | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #53 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 54. | The ordinal scale of data measurement is      |  |  | | --- | --- | | A. | less sophisticated than the nominal scale. |  |  |  | | --- | --- | | B. | more sophisticated than the interval scale. |  |  |  | | --- | --- | | **C.** | more sophisticated than the nominal scale. |  |  |  | | --- | --- | | D. | as equally sophisticated as the nominal scale. | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Remember Difficulty: 1 Easy Jaggia - Chapter 01 #54 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 55. | The interval scale of data measurement is      |  |  | | --- | --- | | **A.** | less sophisticated than the ratio scale. |  |  |  | | --- | --- | | B. | more sophisticated than the ratio scale. |  |  |  | | --- | --- | | C. | less sophisticated than the ordinal scale. |  |  |  | | --- | --- | | D. | equally sophisticated as the ratio scale because both are appropriate for quantitative data. | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Remember Difficulty: 1 Easy Jaggia - Chapter 01 #55 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 56. | A recent survey of 200 small firms (annual revenue less than $10 million) asked whether an increase in the minimum wage would cause the firm to decrease capital spending. Possible responses to the survey question were: "Yes," "No," or "Don’t Know." This data is *best* classified as      |  |  | | --- | --- | | A. | ratio scale. |  |  |  | | --- | --- | | B. | ordinal scale. |  |  |  | | --- | --- | | C. | interval scale. |  |  |  | | --- | --- | | **D.** | nominal scale. | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #56 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 57. | Which scale of data measurement is appropriate for the names of companies listed on the Dow Jones Industrial Average?      |  |  | | --- | --- | | A. | Ratio scale |  |  |  | | --- | --- | | B. | Ordinal scale |  |  |  | | --- | --- | | C. | Interval scale |  |  |  | | --- | --- | | **D.** | Nominal scale | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #57 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 58. | An analyst collects data on the weekly closing price of gold throughout a year. The scale of this data is      |  |  | | --- | --- | | **A.** | ratio scale. |  |  |  | | --- | --- | | B. | ordinal scale. |  |  |  | | --- | --- | | C. | interval scale. |  |  |  | | --- | --- | | D. | nominal scale. | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #58 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 59. | An undergraduate student’s status (freshman, sophomore, junior, or senior) is an example of which scale of measurement?      |  |  | | --- | --- | | A. | Ratio scale |  |  |  | | --- | --- | | **B.** | Ordinal scale |  |  |  | | --- | --- | | C. | Interval scale |  |  |  | | --- | --- | | D. | Nominal scale | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #59 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 60. | The Fahrenheit scale for measuring temperature would be classified as a(n)      |  |  | | --- | --- | | A. | ratio scale. |  |  |  | | --- | --- | | B. | ordinal scale. |  |  |  | | --- | --- | | **C.** | interval scale. |  |  |  | | --- | --- | | D. | nominal scale. | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #60 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 61. | At the end of a semester college students evaluate their instructors by assigning them to one of the following categories: Excellent, Good, Average, Below Average, and Poor. The measurement scale is a(n)      |  |  | | --- | --- | | A. | ratio scale. |  |  |  | | --- | --- | | **B.** | ordinal scale. |  |  |  | | --- | --- | | C. | interval scale. |  |  |  | | --- | --- | | D. | nominal scale. | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #61 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 62. | What is the scale of measurement of the distance between any two locations?      |  |  | | --- | --- | | **A.** | Ratio scale |  |  |  | | --- | --- | | B. | Ordinal scale |  |  |  | | --- | --- | | C. | Interval scale |  |  |  | | --- | --- | | D. | Nominal scale | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #62 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 63. | Which scales of data measurement are associated with quantitative data?      |  |  | | --- | --- | | **A.** | Interval and ratio |  |  |  | | --- | --- | | B. | Ratio and nominal |  |  |  | | --- | --- | | C. | Ordinal and interval |  |  |  | | --- | --- | | D. | Nominal and ordinal | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Remember Difficulty: 1 Easy Jaggia - Chapter 01 #63 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 64. | Which data scales of measurement are associated with qualitative data?      |  |  | | --- | --- | | A. | Interval and ratio |  |  |  | | --- | --- | | B. | Ratio and nominal |  |  |  | | --- | --- | | C. | Ordinal and interval |  |  |  | | --- | --- | | **D.** | Nominal and ordinal | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Remember Difficulty: 1 Easy Jaggia - Chapter 01 #64 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 65. | The data represents the stock price for Google at the end of the past four quarters. Which of the following types of data best describe these values?      |  |  | | --- | --- | | A. | Cross-sectional |  |  |  | | --- | --- | | B. | Nominal |  |  |  | | --- | --- | | **C.** | Time series |  |  |  | | --- | --- | | D. | Ordinal | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #65 Learning Objective: 01-03 Explain the need for sampling and discuss various data types. Topic: What Is Statistics?* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 66. | Your business statistics class had a test last week. The average score for the class is an example of      |  |  | | --- | --- | | A. | secondary data |  |  |  | | --- | --- | | B. | qualitative data |  |  |  | | --- | --- | | **C.** | descriptive statistics |  |  |  | | --- | --- | | D. | inferential statistics | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #66 Learning Objective: 01-02 Differentiate between descriptive statistics and inferential statistics. Topic: What Is Statistics?* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 67. | A sample statistic is an estimate of      |  |  | | --- | --- | | **A.** | population parameter. |  |  |  | | --- | --- | | B. | population statistic. |  |  |  | | --- | --- | | C. | sample parameter. |  |  |  | | --- | --- | | D. | descriptive statistic. | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #67 Learning Objective: 01-02 Differentiate between descriptive statistics and inferential statistics. Topic: What Is Statistics?* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 68. | A \_\_\_\_\_\_\_\_\_\_\_ represents all possible subjects of interest.      |  |  | | --- | --- | | A. | sample |  |  |  | | --- | --- | | **B.** | population |  |  |  | | --- | --- | | C. | statistic |  |  |  | | --- | --- | | D. | parameter | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Remember Difficulty: 1 Easy Jaggia - Chapter 01 #68 Learning Objective: 01-02 Differentiate between descriptive statistics and inferential statistics. Topic: What Is Statistics?* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 69. | A major portion of \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is concerned with the problem of estimating population parameters or testing hypothesis about such parameters.      |  |  | | --- | --- | | A. | descriptive statistics |  |  |  | | --- | --- | | B. | population statistics |  |  |  | | --- | --- | | **C.** | inferential statistics |  |  |  | | --- | --- | | D. | business statistics | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Remember Difficulty: 1 Easy Jaggia - Chapter 01 #69 Learning Objective: 01-02 Differentiate between descriptive statistics and inferential statistics. Topic: What Is Statistics?* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 70. | Data that describe a characteristic about a sample is known as a      |  |  | | --- | --- | | A. | population. |  |  |  | | --- | --- | | B. | survey. |  |  |  | | --- | --- | | C. | parameter. |  |  |  | | --- | --- | | **D.** | statistic. | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Remember Difficulty: 1 Easy Jaggia - Chapter 01 #70 Learning Objective: 01-02 Differentiate between descriptive statistics and inferential statistics. Topic: What Is Statistics?* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 71. | When a characteristic of interest differs among various observations, then it can be termed a      |  |  | | --- | --- | | A. | parameter. |  |  |  | | --- | --- | | **B.** | variable. |  |  |  | | --- | --- | | C. | data. |  |  |  | | --- | --- | | D. | information. | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #71 Learning Objective: 01-03 Explain the need for sampling and discuss various data types. Topic: Variables and Scales of Measurement* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 72. | A(n) \_\_\_\_\_\_\_\_\_\_\_\_ variable is characterized by infinitely uncountable values and can take any value within interval.      |  |  | | --- | --- | | A. | discrete |  |  |  | | --- | --- | | B. | infinite |  |  |  | | --- | --- | | **C.** | continuous |  |  |  | | --- | --- | | D. | quantitative | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #72 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 73. | Differences between categories are meaningless with \_\_\_\_\_\_\_\_\_ data.      |  |  | | --- | --- | | **A.** | ordinal |  |  |  | | --- | --- | | B. | interval |  |  |  | | --- | --- | | C. | ratio |  |  |  | | --- | --- | | D. | continuous | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #73 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 74. | Which of the following scales represents the strongest level of measurement?      |  |  | | --- | --- | | A. | Ordinal |  |  |  | | --- | --- | | B. | Nominal |  |  |  | | --- | --- | | **C.** | Ratio |  |  |  | | --- | --- | | D. | Interval | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #74 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 75. | Which of the following scales represents the less sophisticated level of measurement?      |  |  | | --- | --- | | A. | Ordinal |  |  |  | | --- | --- | | **B.** | Nominal |  |  |  | | --- | --- | | C. | Ratio |  |  |  | | --- | --- | | D. | Interval | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #75 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 76. | The values of data on a(n) \_\_\_\_\_\_\_\_\_\_ scale can be categorized and ranked.      |  |  | | --- | --- | | **A.** | ordinal |  |  |  | | --- | --- | | B. | nominal |  |  |  | | --- | --- | | C. | ratio |  |  |  | | --- | --- | | D. | interval | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #76 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 77. | Which of the following characteristicsdoes the interval scale not have?      |  |  | | --- | --- | | A. | Values can be categorized. |  |  |  | | --- | --- | | B. | Values can be ranked. |  |  |  | | --- | --- | | **C.** | There is a true zero point. |  |  |  | | --- | --- | | D. | The differences between values are valid. | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #77 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 78. | Which of the following is an example of quantitative data?      |  |  | | --- | --- | | A. | The ZIP code of your home address |  |  |  | | --- | --- | | **B.** | Google’s closing stock price today |  |  |  | | --- | --- | | C. | Your gender |  |  |  | | --- | --- | | D. | Your Social Security number | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #78 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 79. | Which of the following is an example of qualitative data?      |  |  | | --- | --- | | A. | Today’s high temperature |  |  |  | | --- | --- | | B. | The class average of last test |  |  |  | | --- | --- | | C. | The amount of time you spent for your homework |  |  |  | | --- | --- | | **D.** | Your last name | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #79 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 80. | A respondent of a survey is asked whether the Philadelphia Flyers’ performance in the last game was excellent, good, fair, or poor. The person indicates that the performance was "good." This is an example of      |  |  | | --- | --- | | A. | nominal data |  |  |  | | --- | --- | | **B.** | ordinal data |  |  |  | | --- | --- | | C. | interval data |  |  |  | | --- | --- | | D. | ratio data | |

|  |
| --- |
| *AACSB: Analytical Thinking Accessibility: Keyboard Navigation Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #80 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |
| --- | --- |
| 81. | Philadelphia experienced a record amount of rainfall in August of 2011. During the last week of the month, the city received additional rain from a hurricane. Becauseglobal warming is thought to cause extreme weather patterns, one conclusion that could be drawn is that these patterns are evidence of global warming. What is wrong with this conclusion?     A knowledge of statistics provides the necessary tools to differentiate between sound statistical conclusions and questionable conclusions drawn from an insufficient number ofdata points. |

|  |
| --- |
| *AACSB: Analytical Thinking Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #81 Learning Objective: 01-01 Describe the importance of statistics. Topic: The Relevance of Statistics* |

|  |  |
| --- | --- |
| 82. | Administrators have concluded that the SAT exam results for 2011 show a distinct change in student capabilities when compared with the year 1991. In 1991 the SAT exam included only multiple choice sections and was later redesigned. What is wrong with this conclusion?     A knowledge of statistics provides the necessary tools to differentiate between sound statistical conclusions and questionable conclusions drawn from an insufficient number ofdata points, "bad" data points, incomplete data points, etc. |

|  |
| --- |
| *AACSB: Analytical Thinking Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #82 Learning Objective: 01-01 Describe the importance of statistics. Topic: The Relevance of Statistics* |

|  |  |
| --- | --- |
| 83. | A university is interested in tracking the success of its graduates by measuring the length of each graduate’s job search before getting a position in his or her chosen field. How would you define the appropriate population?     A population consists of the complete collection of items with the characteristic we want to understand. |

|  |
| --- |
| *AACSB: Analytical Thinking Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #83 Learning Objective: 01-02 Differentiate between descriptive statistics and inferential statistics. Topic: What Is Statistics?* |

|  |  |
| --- | --- |
| 84. | We would like to determine whether there is a difference between the height of a college team of basketball players at the Ohio State University and the height of the overall student body. Identify the two populations in this study.     A population consists of the complete collection of items with the characteristic we want to understand. |

|  |
| --- |
| *AACSB: Analytical Thinking Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #84 Learning Objective: 01-02 Differentiate between descriptive statistics and inferential statistics. Topic: What Is Statistics?* |

|  |  |
| --- | --- |
| 85. | In each of the following statements, determine whether the branch of statistics is best classified as descriptive statistics or inferential statistics. The average of a data set is equal to 35.7. The minimum value of a data set is 78, and the maximum value is 146. Because the average age in a sample is 23, it is likely that the average age in the population is about 23. Because the values in the sample are so widely dispersed, the spread of the population must be high.     Descriptive statistics refers to the summary of a data set, and inferential statistics refers to drawing conclusions about a population based on a sample. |

|  |
| --- |
| *AACSB: Analytical Thinking Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #85 Learning Objective: 01-02 Differentiate between descriptive statistics and inferential statistics. Topic: What Is Statistics?* |

|  |  |
| --- | --- |
| 86. | A car company wants to know the average age of cars of their brand that are still on the road. How would you define the appropriate population? Will the car company calculate a population parameter or a sample statistic? Why?     Obtaining information on the entire population is expensive. |

|  |
| --- |
| *AACSB: Analytical Thinking Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #86 Learning Objective: 01-03 Explain the need for sampling and discuss various data types. Topic: What Is Statistics?* |

|  |  |
| --- | --- |
| 87. | What are the primary reasons that sampling is necessary?     We are unable to use population data for two main reasons: It is impossible to examine every member of the population and obtaining information on the entire population is expensive. |

|  |
| --- |
| *AACSB: Analytical Thinking Blooms: Remember Difficulty: 1 Easy Jaggia - Chapter 01 #87 Learning Objective: 01-03 Explain the need for sampling and discuss various data types. Topic: What Is Statistics?* |

|  |  |
| --- | --- |
| 88. | An investor wants to know today’s average closing price of the stocks listed on the Standard and Poor’s 500 Index. Will the investor calculate a population parameter or sample statistic? Why?     If the population under study is completely known then all data can be used to obtain the population parameter. |

|  |
| --- |
| *AACSB: Analytical Thinking Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #88 Learning Objective: 01-03 Explain the need for sampling and discuss various data types. Topic: What Is Statistics?* |

|  |  |
| --- | --- |
| 89. | We would like to determine the average height of a college team of basketball players at Ohio State University. Is it necessary to take a sample of basketball players? Explain.     If the population under study is small, we can use the entire population to obtain the desired parameter. |

|  |
| --- |
| *AACSB: Analytical Thinking Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #89 Learning Objective: 01-03 Explain the need for sampling and discuss various data types. Topic: What Is Statistics?* |

|  |  |
| --- | --- |
| 90. | We would like to determine the average height of the overall student body at Ohio State University. Does it seem necessary to take a sample from the overall student body?     Obtaining information on the entire population is expensive. |

|  |
| --- |
| *AACSB: Analytical Thinking Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #90 Learning Objective: 01-03 Explain the need for sampling and discuss various data types. Topic: What Is Statistics?* |

|  |  |
| --- | --- |
| 91. | Researchers are interested in completing a study examining trends in the sale of foods in the U.S. They have decided to examine the quantity of organic vegetables sold by supermarkets. Will researchers be able to gather population data?     Obtaining information on the entire population is expensive. |

|  |
| --- |
| *AACSB: Analytical Thinking Blooms: Understand Difficulty: 2 Medium Jaggia - Chapter 01 #91 Learning Objective: 01-03 Explain the need for sampling and discuss various data types. Topic: What Is Statistics?* |

|  |  |
| --- | --- |
| 92. | Every 10 years, a census is taken in the U.S. by the Census Bureau. Despite the intent of gathering data on the population of the United States, issues exist that make true population data impossible to gather. Identify at least two issues in collecting these data.     Obtaining information on the entire population is expensive. |

|  |
| --- |
| *AACSB: Analytical Thinking Blooms: Apply Difficulty: 3 Hard Jaggia - Chapter 01 #92 Learning Objective: 01-03 Explain the need for sampling and discuss various data types. Topic: What Is Statistics?* |

|  |  |
| --- | --- |
| 93. | Social networking sites support themselves in large part by selling advertising space. The hit rate on these ads is a critical measure when trying to solicit advertising. The hit rate is used as a measure of success for ads. How would you recommend a social networking site use sampling to evaluate its existing ads?     We use sample data rather than population data to draw a conclusion about a population. |

|  |
| --- |
| *AACSB: Analytical Thinking Blooms: Apply Difficulty: 3 Hard Jaggia - Chapter 01 #93 Learning Objective: 01-03 Explain the need for sampling and discuss various data types. Topic: What Is Statistics?* |

|  |  |
| --- | --- |
| 94. | The following table includes the number of white women over the age of 20 in the civilian labor force. Because it is time series data, what would the entries of the first column refer to?        Source: http://data.bls.gov     Time series data refer to data collected by recording a characteristic of a subject over several time periods. |

|  |
| --- |
| *AACSB: Analytical Thinking Blooms: Apply Difficulty: 3 Hard Jaggia - Chapter 01 #94 Learning Objective: 01-03 Explain the need for sampling and discuss various data types. Topic: What Is Statistics?* |

|  |  |
| --- | --- |
| 95. | A study of teen smoking is planned. Researchers are interested in collecting cross-sectional data, which allow them to draw conclusions about the likelihood, frequency, and longevity of teen smoking. You have been asked to design this study and will collect no more than five pieces of data. What information will you collect?     Cross-sectional data refer to data collected by recording characteristics at the same point in time. |

|  |
| --- |
| *AACSB: Analytical Thinking Blooms: Apply Difficulty: 3 Hard Jaggia - Chapter 01 #95 Learning Objective: 01-03 Explain the need for sampling and discuss various data types. Topic: What Is Statistics?* |

|  |  |
| --- | --- |
| 96. | Define the measurement scale of a car’s fuel efficiency (measured in miles per gallon). Is a car’s fuel efficiency discrete or continuous?     A continuous variable can take on any value within an interval. Ratio scale is the strongest level of measurement and it has a true zero point. |

|  |
| --- |
| *AACSB: Analytical Thinking Blooms: Apply Difficulty: 3 Hard Jaggia - Chapter 01 #96 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |
| --- | --- |
| 97. | A study of teen smoking is planned. Researchers are interested in collecting data which allow them to draw conclusions about the likelihood, frequency, and longevity of teen smoking. The questions asked include: “What is your gender?”, “What is your age?”, “Do you smoke (yes or no)?”, “How many cigarettes per day do you smoke?”, “For how long have you smoked (in years)?” What is the measurement scale for each variable?     If we are presented with nominal data, all we can do is categorize or group the data. The values in the data set differ merely by name or label. With ordinal data, we are able to both categorize and rank the data with respect to some characteristic or trait. With data on an interval scale, not only can we categorize and rank the data, but we are also assured that the differences between scale values are meaningful. Ratio-scaled data have all the characteristics of interval-scaled data as well as a meaningful zero point, which allows us to interpret the ratios of values. |

|  |
| --- |
| *AACSB: Analytical Thinking Blooms: Apply Difficulty: 3 Hard Jaggia - Chapter 01 #97 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |
| --- | --- |
| 98. | The following data represent a sample of property sales in Cape May County during the year 2000. Identify the qualitative and quantitative variables. What are the natural categories for Town and Class? Identify the measurement scales for all variables.         A variable whose values are described verbally is qualitative, while a variable that assumes meaningful numerical values is quantitative. The categories for qualitative nominal data do not have any natural ordering, while such an ordering is visible for qualitative ordinal data. A quantitative data with a ratio scale of measurement has a meaningful zero point, and hence all ratio values are naturally interpretable. |

|  |
| --- |
| *AACSB: Analytical Thinking Blooms: Apply Difficulty: 3 Hard Jaggia - Chapter 01 #98 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |
| --- | --- |
| 99. | The following data represent a sample of non-elementary mathematics teachers in Bergen County, New Jersey. Identify the qualitative and quantitative variables, the categories associated with each qualitative variable, and the measurement scales for all variables.        Source: http://php.app.com/edstaff/results2.php?county=BERGEN&district=%25&school=%25&lname=&fname=&job1=Math+Non-Elementary&Submit=Submit     A variable whose values are described verbally is qualitative, while a variable that assumes meaningful numerical values is quantitative. The categories for nominal data do not have any natural ordering, while such an ordering is visible for ordinal data. A quantitative data with a ratio scale of measurement has a meaningful zero point, and hence all ratio values are naturally interpretable. |

|  |
| --- |
| *AACSB: Analytical Thinking Blooms: Apply Difficulty: 3 Hard Jaggia - Chapter 01 #99 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

|  |  |
| --- | --- |
| 100. | The following data concern a sample of employees of the U.S. Marshalls in the state of New York. Identify the qualitative and quantitative variables, the categories associated with each qualitative variable, and the measurement scales for all variables.        Source: http://php.app.com/fed\_employees10/results.php?fullname=&agency\_name=U.S.+MARSHALS+SERVICE&statename=New+York&countyname=%25&Submit=Search     A variable whose values are described verbally is qualitative, while a variable that assumes meaningful numerical values is quantitative. The categories for nominal data do not have any natural ordering, while such an ordering is visible for ordinal data. A quantitative data with a ratio scale of measurement has a meaningful zero point, and hence all ratio values are naturally interpretable. |

|  |
| --- |
| *AACSB: Analytical Thinking Blooms: Apply Difficulty: 3 Hard Jaggia - Chapter 01 #100 Learning Objective: 01-04 Describe variables and various types of measurement scales. Topic: Variables and Scales of Measurement* |

Chapter 01 Summary

|  |  |
| --- | --- |
| *Category* | *# of Questions* |
| AACSB: Analytical Thinking | 100 |
| Accessibility: Keyboard Navigation | 79 |
| Blooms: Apply | 15 |
| Blooms: Remember | 26 |
| Blooms: Understand | 59 |
| Difficulty: 1 Easy | 26 |
| Difficulty: 2 Medium | 59 |
| Difficulty: 3 Hard | 15 |
| Jaggia - Chapter 01 | 100 |
| Learning Objective: 01-01 Describe the importance of statistics. | 10 |
| Learning Objective: 01-02 Differentiate between descriptive statistics and inferential statistics. | 17 |
| Learning Objective: 01-03 Explain the need for sampling and discuss various data types. | 29 |
| Learning Objective: 01-04 Describe variables and various types of measurement scales. | 44 |
| Topic: The Relevance of Statistics | 9 |
| Topic: Variables and Scales of Measurement | 45 |
| Topic: What Is Statistics? | 46 |