

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

- 1) A management survey for a company surveyed 235 employees. 44.7% of the employees surveyed were females. The number of males would be \_\_\_\_\_. 1) \_\_\_\_\_  
A) 13 B) 105  
C) 130 D) Unable to determine
- 2) The four levels of measurement that are commonly used for classifying data are ratio, \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_. 2) \_\_\_\_\_  
A) nominal; ordinal; categorical B) normal; ordinal; interval  
C) interval; normal; ordinary D) nominal; ordinal; interval
- 3) On a test, 74% of the questions are answered correctly. If 111 questions are correct, how many questions are on the test? 3) \_\_\_\_\_  
A) 37 questions B) 150 questions C) 67 questions D) 82 questions
- 4) A marijuana survey included 1610 responses from a list of approximately 241,500,000 adults in the United States from which every 150,000<sup>th</sup> name was surveyed. Identify which of these types of sampling is used: 4) \_\_\_\_\_  
A) Convenience  
B) Simple random  
C) Stratified  
D) Cluster  
E) Systematic
- 5) Identify the type of study used. A town obtains current employment data by polling 10,000 of its citizens this month. 5) \_\_\_\_\_  
A) Retrospective B) Cross-sectional C) Prospective D) None of these
- 6) Identify which type of sampling is used. A pollster uses a computer to generate 500 random numbers, then interviews the voters corresponding to those numbers. 6) \_\_\_\_\_  
A) Systematic  
B) Stratified  
C) Cluster  
D) Random  
E) Convenience
- 7) There are many potential pitfalls that can cause problems when analyzing data. Which of these choices are not classified as a potential pitfall? 7) \_\_\_\_\_  
A) Order of survey questions B) Measured data  
C) Self-reported data D) Nonresponse
- 8) Determine which of the four levels of measurement is most appropriate. Students' grades, A, B, or C, on a test. 8) \_\_\_\_\_  
A) Ratio B) Nominal C) Ordinal D) Interval

- 9) The good design of experiments includes blinding, \_\_\_\_\_, and \_\_\_\_\_. 9) \_\_\_\_\_  
 A) replication; randomization B) replication; voluntary response samples  
 C) replication; experimentation D) internalization; randomization
- 10) Determine whether the given value is from a discrete or continuous data set. The time it takes a 10) \_\_\_\_\_  
 computer to complete a task.  
 A) Discrete B) Continuous
- 11) A \_\_\_\_\_ is the collection of data from every member of the population. 11) \_\_\_\_\_  
 A) sample B) placebo C) statistic D) census
- 12) Determine whether the given description corresponds to an experiment or an observational study. 12) \_\_\_\_\_  
 A stock analyst selects a stock from a group of twenty for investment by choosing the stock with the  
 greatest earnings per share reported for the last quarter.  
 A) Observational study B) Experiment
- 13) Determine whether the given description corresponds to an observational study or an experiment. 13) \_\_\_\_\_  
 A doctor gives a new medication to half of his patients with the flu and a placebo to the other half  
 of his patients with the flu.  
 A) Observational study B) Experiment
- 14) Which of the following is an inappropriate way to deal with missing data? 14) \_\_\_\_\_  
 A) Ignore missing data B) Delete cases with missing data  
 C) Substitute missing values D) Determine if missing values are random
- 15) Researchers collect data by interviewing athletes who have won Olympic gold medals from 1992 to 15) \_\_\_\_\_  
 2016. Identify the type of study.  
 A) Cross-sectional B) Prospective C) Retrospective D) None of these
- 16) Identify the type of observational study used. A town obtains current employment data by polling 16) \_\_\_\_\_  
 10,000 of its citizens this month.  
 A) Cross-sectional B) Prospective C) Retrospective D) None of these
- 17) Determine which of the four levels of measurement is most appropriate. Level of satisfaction of 17) \_\_\_\_\_  
 survey respondents.  
 A) Ordinal B) Interval C) Ratio D) Nominal
- 18) Identify which type of sampling is used. A tax auditor selects every 1000th income tax return that is 18) \_\_\_\_\_  
 received.  
 A) Stratified  
 B) Random  
 C) Cluster  
 D) Convenience  
 E) Systematic
- 19) Determine whether the given description corresponds to an observational study or an experiment. 19) \_\_\_\_\_  
 A political pollster reports that his candidate has a 10% lead in the polls with 10% undecided.  
 A) Experiment B) Observational study

- 20) The similarity between an ordinal level of measurement and an interval level of measurement is that \_\_\_\_\_. 20) \_\_\_\_\_
- A) differences between data values can be determined and are meaningful
  - B) neither can be arranged in some order
  - C) both can be arranged in some order
  - D) differences between data values cannot be determined or are meaningless
- 21) A tax auditor selects every 1000th income tax return that is received. Identify which of these types of sampling is used. 21) \_\_\_\_\_
- A) Convenience
  - B) Systematic
  - C) Stratified
  - D) Simple Random
  - E) Cluster
- 22) Determine which level of measurement is appropriate. Salaries of college professors. 22) \_\_\_\_\_
- A) Ordinal
  - B) Interval
  - C) Ratio
  - D) Nominal
- 23) A gardener has 75 clients, 45% of whom are businesses. Find the number of business clients. 23) \_\_\_\_\_
- A) 41 clients
  - B) 36 clients
  - C) 34 clients
  - D) 73 clients
- 24) Determine which level of measurement is appropriate. A sample of children's balls are classified from softest to hardest. 24) \_\_\_\_\_
- A) Ratio
  - B) Interval
  - C) Ordinal
  - D) Nominal
- 25) A psychology student wishes to investigate differences in political opinions between business majors and political science majors at her college. She randomly selects 100 students from the 260 business majors and 100 students from the 180 political science majors. Does this sampling plan result in a random sample? Simple random sample? Explain. 25) \_\_\_\_\_
- A) Yes; yes. The sample is random because all students have the same chance of being selected. It is a simple random sample because all samples of size 200 have the same chance of being selected.
  - B) No; yes. The sample is not random because political science majors have a greater chance of being selected than business majors. It is a simple random sample because all samples of size 200 have the same chance of being selected.
  - C) Yes; no. The sample is random because all students have the same chance of being selected. It is not a simple random sample because some samples are not possible, such as a sample consisting of 50 business majors and 150 political science majors.
  - D) No; no. The sample is not random because political science majors have a greater chance of being selected than business majors. It is not a simple random sample because some samples are not possible, such as a sample consisting of 50 business majors and 150 political science majors.
- 26) In a cross-sectional study, data are \_\_\_\_\_. 26) \_\_\_\_\_
- A) observed, measure, and collected over a period of time
  - B) observed, measured, and collected at one point of time
  - C) collected from a past time period
  - D) collected in the future from groups that share common factors

- 27) Determine whether the given value is a statistic or a parameter. After taking the first exam, 15 of the students dropped the class. 27) \_\_\_\_\_  
 A) Statistic B) Parameter
- 28) What type of data values are quantitative and the number of values is finite or countable? 28) \_\_\_\_\_  
 A) Continuous B) Interval C) Discrete D) Categorical
- 29) Identify which type of sampling is used. The name of each contestant is written on a separate card, the cards are placed in a bag, and three names are picked from the bag. 29) \_\_\_\_\_  
 A) Systematic  
 B) Simple Random  
 C) Stratified  
 D) Cluster  
 E) Convenience
- 30) Correlation does not imply \_\_\_\_\_. 30) \_\_\_\_\_  
 A) bias B) significance C) causation D) linearity
- 31) A marketing firm does a survey to find out how many people use a product. Of the one hundred people contacted, fifteen said they use the product. Identify the type of study used. 31) \_\_\_\_\_  
 A) Experiment B) Observational study
- 32) An education expert is researching teaching methods and wishes to interview teachers from a particular school district. She randomly selects ten schools from the district and interviews all of the teachers at the selected schools. Does this sampling plan result in a random sample? Simple random sample? Explain. 32) \_\_\_\_\_  
 A) No; yes. The sample is not random because teachers in small schools are more likely to be selected than teachers in larger schools. It is a simple random sample because all samples have the same chance of being selected.  
 B) No; no. The sample is not random because teachers in small schools are more likely to be selected than teachers in larger schools. It is not a simple random sample because some samples are not possible, such as a sample that includes teachers from schools that were not selected.  
 C) Yes; no. The sample is random because all teachers have the same chance of being selected. It is not a simple random sample because some samples are not possible, such as a sample that includes teachers from schools that were not selected.  
 D) Yes; yes. The sample is random because all teachers have the same chance of being selected. It is a simple random sample because all samples have the same chance of being selected.
- 33) Which of the following does not apply to the ratio level of measurement? 33) \_\_\_\_\_  
 A) Cannot be arranged in order  
 B) There is a natural zero starting point  
 C) Can be arranged in order  
 D) Differences between data values can be found and are meaningful