STA2023
Practice 1. Chapter 1
SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Provide an appropriate response.

1) Define the terms population, sample, parameter and statistic. How does a census compare to a sample? 1) _____

2) Distinguish between categorical and quantitative data. Give an example for each. 2) _____

3) Define continuous and discrete data and give an example of each. 3) _____

4) Define observational study and experiment. Define the terms "treatment group" and "placebo group" as part of your answer. 4) _____

5) Define random sample. Explain why this is important in design of experiments. 5) _____

6) Define the terms "stratified sampling", "systematic sampling", "cluster sampling", and "convenience sampling". Give examples for each. 6) _____

7) A teacher was interested in knowing how much tax people pay in the United States. She selected a simple random sample of her friends and asked them about their taxes. Is this sample likely to be representative of all adults in the United States? 7) _____

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

Determine whether the given value is a statistic or a parameter.

8) A sample of 120 employees of a company is selected, and the average age is found to be 37 years. 8) _____
A) Parameter B) Statistic

9) After inspecting all of 55,000 kg of meat stored at the Wurst Sausage Company, it was found that 45,000 kg of the meat was spoiled. 9) _____
A) Parameter B) Statistic

10) A health and fitness club surveys 40 randomly selected members and found that the average weight of those questioned is 157 lb. 10) _____
A) Parameter B) Statistic

Determine whether the given value is from a discrete or continuous data set.

11) The number of freshmen entering college in a certain year is 621. 11) _____
A) Discrete B) Continuous

12) The temperature of a cup of coffee is 67.3°F. 12) _____
A) Continuous B) Discrete

13) The weight of Bill's pack as he sets off on a backpacking trip is 48.3 lb. 13) _____
A) Discrete B) Continuous

14) The number of limbs on a 2-year-old oak tree is 21. 14) _____
A) Discrete B) Continuous

Determine which of the four levels of measurement (nominal, ordinal, interval, ratio) is most appropriate.

15) The temperatures of eight different plastic spheres. 15) _____
A) Ratio B) Ordinal C) Interval D) Nominal

16) The sample of spheres categorized from softest to hardest. 16) _____
A) Ratio B) Nominal C) Ordinal D) Interval

17) Salaries of college professors. 17) _____
A) Interval B) Ratio C) Ordinal D) Nominal

18) Nationalities of survey respondents. 18) _____
A) Ratio B) Interval C) Nominal D) Ordinal

19) Student's grades, A, B, or C, on a test. 19) _____
A) Nominal B) Interval C) Ordinal D) Ratio

Identify which of these types of sampling is used: random, stratified, systematic, cluster, convenience.

20) 49, 34, and 48 students are selected from the Sophomore, Junior, and Senior classes with 496, 348, and 481 students respectively. 20) _____
A) Systematic
B) Cluster
C) Stratified
D) Random
E) Convenience

21) A sample consists of every 49th student from a group of 496 students. 21) _____
A) Random
B) Convenience
C) Systematic
D) Stratified
E) Cluster

22) A market researcher selects 500 drivers under 30 years of age and 500 drivers over 30 years of age. 22) _____
A) Convenience
B) Systematic
C) Random
D) Stratified
E) Cluster

23) A market researcher selects 500 people from each of 10 cities. 23) _____
A) Systematic
B) Stratified
C) Random
D) Cluster
E) Convenience

24) A tax auditor selects every 1000th income tax return that is received. 24) _____
A) Stratified
B) Convenience
C) Random
D) Cluster
E) Systematic

25) To avoid working late, a quality control analyst simply inspects the first 100 items produced in a day. 25) _____
A) Random
B) Cluster
C) Convenience
D) Stratified
E) Systematic

Identify the type of observational study (cross-sectional, retrospective, prospective).

26) Researchers collect data by interviewing athletes who have won olympic gold medals from 1992 to 2008. 26) _____
A) Cross-sectional B) Prospective
C) Retrospective D) None of these

27) A researcher plans to obtain data by following those in cancer remission since January of 2016. 27) _____
A) Retrospective B) Cross-sectional C) Prospective D) None of these

28) A town obtains current employment data by polling 10,000 of its citizens this month. 28) _____
A) Retrospective B) Cross-sectional C) Prospective D) None of these