Chapter 1 Review for test

Name_____

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.

1) A researcher determines that of all 25 year old women in her city, 37% are married.
A) Parameter B) Statistic

2) A sample of 50 patients is selected from among the patients admitted to the emergency room at a hospital, an it is found that 28% have no health insurance.
A) Parameter B) Statistic

3) A researcher determines that 42.7% of all downtown office buildings have ventilation problems.
A) Statistic B) Parameter

Identify the number as either continuous or discrete.

4) The temperature in Manhattan at 1 p.m. on New Year's Day was 34.1°F.
A) Discrete B) Continuous

5) The number of stories in a Manhattan building is 22.
A) Continuous B) Discrete

6) An athlete runs 1 mile in 5.3 seconds.
A) Continuous B) Discrete

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

7) Temperatures of the ocean at various depths.
A) Interval B) Nominal C) Ordinal D) Ratio

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

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

10) Amount of fat (in grams) in cookies.
A) Nominal B) Interval C) Ratio D) Ordinal

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Provide an appropriate response.

11) Marion said "In the year 1000 AD, the Earth was twice as old as in the year 500 AD." Do you agree with this statement? Explain your thinking. In your explanation be sure to state which of the four levels of measurement is involved.

12) A researcher surveys 100 employees of a company and asks them how they usually commute to work. She codes the responses as follows: 0 for driving alone, 1 for carpooling, 2 for using public transportation, and 3 for walking or cycling. She is interested in the impact of each transportation method on the environment. Which of the four levels of measurement do you think she is using? Explain your thinking.

Identify the abuse of statistics.

13) "38% of adults in the United States regularly visit a doctor". This conclusion was reached by a college student after she had questioned 520 randomly selected members of her college. What is wrong with her survey?

14) "7 out of 10 dentists recommend Brand X toothpaste". This finding is based on the results of a survey of 10 randomly selected dentists. What is wrong with this survey?

15) A researcher published this survey result: "74% of people would be willing to spend 10 percent more for energy from a non-polluting source". The survey question was announced on a national radio show and 1,200 listeners responded by calling in. What is wrong with this survey?

Provide an appropriate response.

16) In an experiment to test the effectiveness of a new headache medication, a researcher divided the participants into three groups of 25 people each. The people in the first group (the control group) received no medication, those in the second group received a placebo, and those in the third group received the experimental drug. The researcher announed that the percentages of people in each of the groups noticing an improvement were 10%, 34%, and 42% respectively. Why might you be suspicious of the researcher's methods?

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

Is the study experimental or observational?

17) 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.

A) Observational B) Experimental

18) A clinic gives a drug to a group of ten patients and a placebo to another group of ten patients to find out if the drug has an effect on the patients' illness.

A) Observational B) Experimental

19) A sample of fish is taken from a lake to measure the effect of pollution from a nearby factory on the fish.

A) Observational B) Experimental

20) A T.V. show's executives commissioned a study to gauge the impact of the show's ratings on the sales of its advertisers.

A) Experimental B) Observational

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

21) 49, 34, and 48 students are selected from the Sophomore, Junior, and Senior classes with 496, 348, and 481 students respectively.

A) Random B) Cluster C) Convenience D) Systematic E) Stratified

22) A sample consists of every 49th student from a group of 496 students.

A) Stratified B) Systematic C) Cluster D) Convenience E) Random

23) A tax auditor selects every 1000th income tax return that is received.

A) Convenience B) Cluster C) Random D) Stratified E) Systematic

24) To avoid working late, a quality control analyst simply inspects the first 100 items produced in a day.

A) Convenience B) Stratified C) Random D) Systematic E) Cluster

25) An education researcher randomly selects 48 middle schools and interviews all the teachers at each school.

A) Convenience B) Cluster C) Random D) Systematic E) Stratified

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Provide an appropriate response.

26) A market researcher obtains a sample of 50 people by standing outside a store and asking every 20th person who enters the store to fill out a survey until she has 50 people. What sampling method is being used here? Will the resulting sample be a random sample? Will it be a simple random sample? Explain your thinking.

27) A researcher obtains a sample of high school teachers in his school district by randomly selecting 10 high schools and interviewing all the teachers at each of these 10 schools. What kind of sampling is being used here? Will the resulting sample be a simple random sample of the population of teachers in the school district? Explain your thinking.

28) Explain what is meant by the term "confounding" and give an example of an experiment in which confounding is likely to be a problem.