

Exam

Name _____

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

Identify the sampling technique used.

- 1) To avoid working late, the quality control manager inspects the last 10 items produced that day. 1) _____

A) cluster
B) systematic
C) random
D) convenience
E) stratified

Answer: D

Diff: 0 Type: BI

Identify the data set's level of measurement.

- 2) the ratings of a movie ranging from "poor" to "good" to "excellent" 2) _____

A) ratio B) ordinal C) nominal D) interval

Answer: B

Diff: 0 Type: BI

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

Determine whether the numerical value is a parameter or a statistic. Explain your reasoning.

- 3) A survey of 1208 students was taken from a university with 20,000 students. 3) _____

Answer: It describes a statistic because the number 1208 is based on a subset of the population.

Diff: 0 Type: SA

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

Identify the data set's level of measurement.

- 4) the final grades (A, B, C, D, and F) for students in a statistics class 4) _____

A) ratio B) interval C) nominal D) ordinal

Answer: D

Diff: 0 Type: BI

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

Provide an appropriate response.

- 5) Explain what bias there is in a study done entirely online. 5) _____

Answer: The study may be biased because it is limited to people with computers.

Diff: 0 Type: SA

- 6) If you had to do a statistical study, would you use a sample or a population? Why? 6) _____

Answer: A sample would be used. It is usually impractical to obtain all the population data.

Diff: 0 Type: SA

7) Explain the difference between a sample and a population. 7) _____

Answer: A population is the collection of *all* outcomes, responses, measurements, or counts that are of interest.. A sample is a subset of a population.

Diff: 0 Type: SA

8) A local newspaper ran a survey by asking, "Do you support the deployment of a weapon that could kill millions of innocent people?" Determine whether the survey question is biased. 8) _____

Answer: The wording of the question is biased, as it tends to encourage negative responses.

Diff: 0 Type: SA

Determine whether the numerical value is a parameter or a statistic. Explain your reasoning.

9) A recent survey by the alumni of a major university indicated that the average salary of 7500 of its 200,000 graduates was \$95,000. 9) _____

Answer: It describes a statistic because the number \$95,000 is based on a subset of the population.

Diff: 0 Type: SA

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

Identify the sampling technique used.

10) A researcher randomly selects and interviews fifty male and fifty female teachers. 10) _____

- A) stratified
- B) systematic
- C) convenience
- D) random
- E) cluster

Answer: A

Diff: 0 Type: BI

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

Identify the population and the sample.

11) A survey of 1782 American households found that 80% of the households own a computer. 11) _____

Answer: population: collection of all American households; sample: collection of 1782 American households surveyed

Diff: 0 Type: SA

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

Identify the data set's level of measurement.

12) the years the summer Olympics were held in the United States 12) _____

- A) nominal
- B) ratio
- C) ordinal
- D) interval

Answer: D

Diff: 0 Type: BI

Identify whether the statement describes inferential statistics or descriptive statistics.

13) The average age of the students in a statistics class is 22 years. 13) _____

- A) descriptive statistics
- B) inferential statistics

Answer: A

Diff: 0 Type: BI

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

Provide an appropriate response.

- 14) Explain why data expressed with the Celsius temperature scale is at the interval level of measurement rather than the ratio level. 14) _____

Answer: Such data is at the interval level rather than the ratio level because the temperature of 0°C does not represent a condition where no heat is present, so it is not an inherent zero as required by the ratio level. Also, ratios of two temperatures cannot be formed so that one data value is expressed as a multiple of the other. The temperature 2°C is not twice as warm as 1°C.

Diff: 0 Type: SA

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

Identify the data set's level of measurement.

- 15) list of zip codes for Chicago 15) _____
A) interval B) ratio C) ordinal D) nominal

Answer: D

Diff: 0 Type: BI

Determine whether you would take a census or use a sampling. If you would use a sampling, decide what sampling technique you would use.

- 16) The average age of the 80 residents of an assisted living center. 16) _____
A) census B) cluster sampling
C) stratified sampling D) random sampling

Answer: A

Diff: 0 Type: BI

Determine whether the study is an observational study or an experiment.

- 17) A researcher obtained a random sample of 100 smokers and a random sample of 100 nonsmokers. After interviewing all 200 participants in the study, the researcher compared the rate of depression among the smokers with the rate of depression among nonsmokers. 17) _____
A) observational study B) experiment

Answer: A

Diff: 0 Type: BI

Identify the sampling technique used.

- 18) Every fifth person boarding a plane is searched thoroughly. 18) _____
A) random
B) stratified
C) cluster
D) convenience
E) systematic

Answer: E

Diff: 0 Type: BI

Identify the data set's level of measurement.

- 19) the annual salaries for all teachers in California 19) _____
A) interval B) ordinal C) ratio D) nominal

Answer: C

Diff: 0 Type: BI

Identify whether the statement describes inferential statistics or descriptive statistics.

- 20) There is a relationship between smoking cigarettes and getting emphysema.
A) descriptive statistics B) inferential statistics

20) _____

Answer: B

Diff: 0 Type: BI

Determine whether the study is an observational study or an experiment.

- 21) The personnel director at a large company would like to determine whether the company cafeteria is widely used by employees. She calls each employee and asks them whether they usually bring their own lunch, eat at the company cafeteria, or go out for lunch.
A) experiment B) observational study

21) _____

Answer: B

Diff: 0 Type: BI

Identify the sampling technique used.

- 22) At a local community college, five statistics classes are randomly selected out of 20 and all of the students from each class are interviewed.
A) systematic
B) convenience
C) cluster
D) stratified
E) random

22) _____

Answer: C

Diff: 0 Type: BI

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

Identify the population and the sample.

- 23) When 1886 American households were surveyed, it was found that 85% of them owned two cars.

23) _____

Answer: population: collection of all American households; sample: collection of 1886 American households surveyed

Diff: 0 Type: SA

Provide an appropriate response.

- 24) There are 750 incoming freshmen attending a university this fall. A researcher wishes to send questionnaires to a sample of 30 of them to complete regarding their drinking habits. Select the numbers of the first five freshmen who belong to the simple random sample.

24) _____

16348 76938 90169 51392 55887 71015 09209 79157

Answer: 163, 487, 693, 169, 513

Diff: 0 Type: SA

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

Identify the sampling technique used.

25) A researcher for an airline interviews all of the passengers on five randomly selected flights. 25) _____

- A) convenience
- B) cluster
- C) stratified
- D) random
- E) systematic

Answer: B

Diff: 0 Type: BI

Determine whether the data are qualitative or quantitative.

26) the colors of automobiles on a used car lot 26) _____

- A) quantitative
- B) qualitative

Answer: B

Diff: 0 Type: BI

27) the number of complaint letters received by the United States Postal Service in a given day 27) _____

- A) quantitative
- B) qualitative

Answer: A

Diff: 0 Type: BI

Determine whether the study is an observational study or an experiment.

28) A pollster obtains a sample of students and asks them how they will vote on an upcoming referendum. 28) _____

- A) experiment
- B) observational study

Answer: B

Diff: 0 Type: BI

Identify the data set's level of measurement.

29) numbers of touchdowns scored by a major university in five randomly selected games 29) _____

4 2 4 3 4

- A) ordinal
- B) nominal
- C) ratio
- D) interval

Answer: C

Diff: 0 Type: BI

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

Provide an appropriate response.

30) Explain the differences between cluster sampling and stratified sampling. 30) _____

Answer: In stratified sampling, members of the population are divided into two or more subsets, or strata, that share a similar characteristic. A sample is then randomly selected from each of the strata. A stratified sample has members from each segment of the population. In cluster sampling, the population is divided into naturally occurring subgroups, each having similar characteristics. All of the members in one or more (but not all) of the clusters are then selected. In a cluster sample, care must be taken to ensure that all clusters have similar characteristics.

Diff: 0 Type: SA

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

Identify whether the statement describes inferential statistics or descriptive statistics.

- 31) The chances of winning the California Lottery are one chance in twenty-two million.

31) _____

A) descriptive statistics

B) inferential statistics

Answer: B

Diff: 0 Type: BI

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

Provide an appropriate response.

- 32) A report sponsored by the California Citrus Commission stated that cholesterol levels can be lowered by drinking at least one glass of a citrus product each day. Determine if the report is biased.

32) _____

Answer: A report sponsored by the citrus industry is much more likely to reach conclusions favorable to the industry.

Diff: 0 Type: SA

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

Identify the sampling technique used.

- 33) A community college student interviews everyone in a statistics class to determine the percentage of students that own a car.

33) _____

A) random

B) systematic

C) stratified

D) convenience

E) cluster

Answer: D

Diff: 0 Type: BI

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

Identify the population and the sample.

- 34) A survey of 2625 elementary school children found that 28% of the children could be classified as obese.

34) _____

Answer: population: elementary school children; sample: collection of 2625 elementary school children surveyed.

Diff: 0 Type: SA

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

Use the Venn diagram to identify the population and the sample.

35)

35) _____



- A) Population: Magazine subscribers; Sample: Magazine subscribers who renew their subscription
B) Population: Magazine subscribers who renew their subscription; Sample: Magazine subscribers

Answer: A

Diff: 0 Type: BI

Identify whether the statement describes inferential statistics or descriptive statistics.

- 36) From past figures, it is predicted that 41% of the registered voters in California will vote in the June primary.

36) _____

- A) inferential statistics B) descriptive statistics

Answer: A

Diff: 0 Type: BI

Identify the data set's level of measurement.

- 37) the lengths (in minutes) of the top ten movies with respect to ticket sales in 2007

37) _____

- A) nominal B) interval C) ordinal D) ratio

Answer: D

Diff: 0 Type: BI

- 38) numbers on the shirts of a girl's soccer team

38) _____

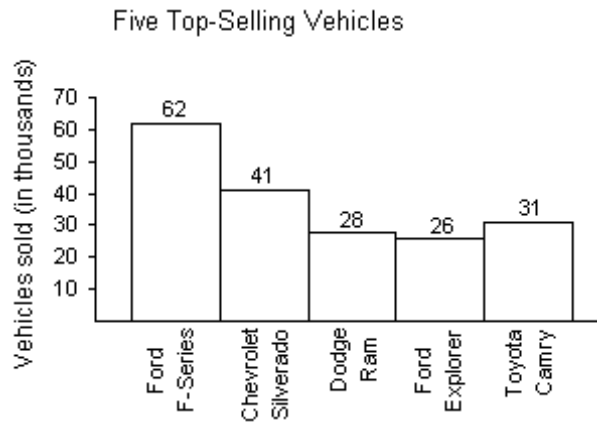
- A) ordinal B) nominal C) interval D) ratio

Answer: B

Diff: 0 Type: BI

39) the data listed on the horizontal axis in the graph

39) _____



A) interval

B) nominal

C) ratio

D) ordinal

Answer: B

Diff: 0 Type: BI

Determine whether the data set is a population or a sample.

40) The age of each employee at a local grocery store

40) _____

A) sample

B) population

Answer: B

Diff: 0 Type: BI

Identify the sampling technique used.

41) In a recent television survey, participants were asked to answer "yes" or "no" to the question "Are you in favor of the death penalty?" Six thousand five hundred responded "yes" while 5100 responded "no". There was a fifty-cent charge for the call.

41) _____

A) cluster

B) random

C) systematic

D) convenience

E) stratified

Answer: D

Diff: 0 Type: BI

Identify the data set's level of measurement.

42) hair color of women on a high school tennis team

42) _____

A) nominal

B) interval

C) ordinal

D) ratio

Answer: A

Diff: 0 Type: BI

43) number of pages in your statistics book

43) _____

A) nominal

B) ordinal

C) ratio

D) interval

Answer: C

Diff: 0 Type: BI

Determine whether the data are qualitative or quantitative.

44) the numbers on the shirts of a girl's soccer team

A) qualitative

B) quantitative

44) _____

Answer: A

Diff: 0 Type: BI

Determine whether the study is an observational study or an experiment.

45) A medical researcher obtains a sample of adults suffering from diabetes. She randomly assigns 67 people to a treatment group and 67 to a placebo group. The treatment group receives a medication over a period of three months and the placebo group receives a placebo over the same time frame. At the end of three months the patients' symptoms are evaluated.

A) observational study

B) experiment

45) _____

Answer: B

Diff: 0 Type: BI

Identify the data set's level of measurement.

46) manuscripts rated "acceptable" or "unacceptable"

A) ordinal

B) interval

C) ratio

D) nominal

46) _____

Answer: A

Diff: 0 Type: BI

Determine whether the study is an observational study or an experiment.

47) A scientist was studying the effects of a new fertilizer on crop yield. She randomly assigned half of the plots on a farm to group one and the remaining plots to group two. On the plots in group one, the new fertilizer was used for a year. On the plots in group two, the old fertilizer was used. At the end of the year the average crop yield for the plots in group one was compared with the average crop yield for the plots in group two.

A) observational study

B) experiment

47) _____

Answer: B

Diff: 0 Type: BI

Identify the data set's level of measurement.

48) number of milligrams of tar in 85 cigarettes

A) ratio

B) ordinal

C) nominal

D) interval

48) _____

Answer: A

Diff: 0 Type: BI

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

Provide an appropriate response.

49) Of the 5000 outpatients released from a local hospital in the past year, one hundred were contacted and asked their opinion on the care they received. Select the first five patients who belong to the simple random sample.

49) _____

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Answer: 1634, 3890, 1695, 1392, 1509

Diff: 0 Type: SA

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

Identify the data set's level of measurement.

50) the average daily temperatures (in degrees Fahrenheit) on five randomly selected days 50) _____

34 22 31 21 38

A) interval

B) ratio

C) nominal

D) ordinal

Answer: A

Diff: 0 Type: BI

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

Provide an appropriate response.

51) Explain the differences between the interval and ratio levels of measurement. 51) _____

Answer: Data at the ratio level are similar to data at the interval level, but with the added property that a zero entry is an inherent zero (implies "none"). Also, for data at the ratio level a ratio of two data values can be formed so that one data value can be expressed as a multiple of another.

Diff: 0 Type: SA

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

Identify the data set's level of measurement.

52) temperatures of 73 selected refrigerators 52) _____

A) nominal

B) ratio

C) ordinal

D) interval

Answer: D

Diff: 0 Type: BI

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

Provide an appropriate response.

53) Explain the difference between a census and a sampling and describe the advantages and disadvantages of each. 53) _____

Answer: A census is a count or measure of an entire population, while a sampling is a count or measure of part of a population. A census provides complete information but is often expensive, difficult, and time consuming to perform especially if the population is large. A sampling is less expensive and time consuming, however appropriate sampling techniques must be used to ensure that unbiased data are collected and that the sample is representative of the population. Even with the best sampling methods, sampling error can occur.

Diff: 0 Type: SA

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

Identify the data set's level of measurement.

54) list of 1239 social security numbers 54) _____

A) ratio

B) nominal

C) interval

D) ordinal

Answer: B

Diff: 0 Type: BI

55) the amounts of fat (in grams) in 29 cookies

A) ratio

B) interval

C) ordinal

D) nominal

55) _____

Answer: A

Diff: 0 Type: BI

Identify whether the statement describes inferential statistics or descriptive statistics.

56) Based on previous clients, a marriage counselor concludes that the majority of marriages that begin with cohabitation before marriage will result in divorce.

56) _____

A) inferential statistics

B) descriptive statistics

Answer: A

Diff: 0 Type: BI

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

Provide an appropriate response.

57) After a hurricane, a disaster area is divided into 200 equal grids. Thirty of the grids are selected and every occupied household in the grid is interviewed to help focus relief efforts. Select the numbers of the first five grids that belong to the cluster sample.

57) _____

16348 76938 90169 51392 55887 71015 09209 79157

Answer: 163, 169, 15, 92, 97

Diff: 0 Type: SA

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

Identify the sampling technique used.

58) The names of 70 contestants are written on 70 cards. The cards are placed in a bag, and three names are picked from the bag.

58) _____

A) stratified

B) systematic

C) cluster

D) random

E) convenience

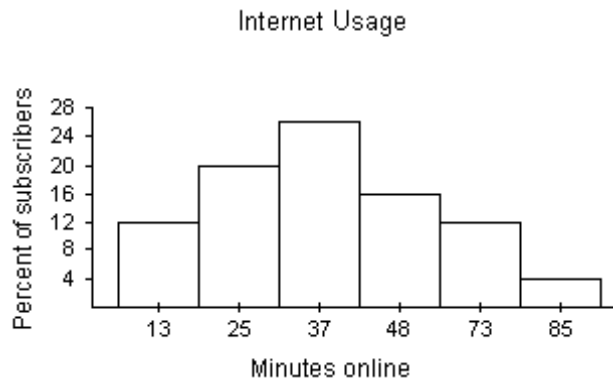
Answer: D

Diff: 0 Type: BI

Identify the data set's level of measurement.

59) the data listed on the horizontal axis in the graph

59) _____



A) interval

B) ordinal

C) ratio

D) nominal

Answer: C

Diff: 0 Type: BI

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

Provide an appropriate response.

60) A college employs 85 faculty members. Without replacement, select the numbers of the five members who will serve on the tenure committee next year.

60) _____

16348 76938 90169 51392 55887 71015 09209 79157

Answer: 16, 34, 69, 38, 13

Diff: 0 Type: SA

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

Identify the sampling technique used.

61) To ensure customer satisfaction, every 5th phone call received by customer service will be monitored.

61) _____

A) random

B) systematic

C) stratified

D) cluster

E) convenience

Answer: B

Diff: 0 Type: BI

- 62) A market researcher randomly selects 100 drivers under 45 years of age and 200 drivers over 45 years of age. 62) _____
- A) convenience
 - B) random
 - C) stratified
 - D) cluster
 - E) systematic

Answer: C

Diff: 0 Type: BI

Determine whether the data are qualitative or quantitative.

- 63) the number of seats in a movie theater 63) _____
- A) qualitative
 - B) quantitative

Answer: B

Diff: 0 Type: BI

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

Identify the experimental units and treatments used in the experiment.

- 64) A medical researcher center wants to test the effectiveness of a new diabetes medication. 64) _____
- The company identifies 82 adults suffering from a similar form of diabetes. The subjects are randomly assigned to two groups. One group is given a medication and the other is given a placebo that looks exactly like the medication. After three months, the subjects' symptoms are studied and compared.

Answer: The experimental units are the 82 adults in the study. The treatment is the new diabetes medication.

Diff: 0 Type: SA

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

Identify the sampling technique used.

- 65) A researcher randomly selected 50 of the nation's middle schools and interviewed all of the teachers at each school. 65) _____
- A) random
 - B) convenience
 - C) systematic
 - D) stratified
 - E) cluster

Answer: E

Diff: 0 Type: BI

Identify the data set's level of measurement.

- 66) ages of students in a statistic class 66) _____
- A) interval
 - B) nominal
 - C) ordinal
 - D) ratio

Answer: D

Diff: 0 Type: BI

Determine whether the study is an observational study or an experiment.

67) A poll is conducted in which professional musicians are asked their ages.

67) _____

A) experiment

B) observational study

Answer: B

Diff: 0 Type: BI

Identify the sampling technique used.

68) A lobbyist for a major airspace firm assigns a number to each legislator and then uses a computer to randomly generate ten numbers. The lobbyist contacts the legislators corresponding to these numbers.

68) _____

A) convenience

B) systematic

C) stratified

D) cluster

E) random

Answer: E

Diff: 0 Type: BI

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

Determine whether the numerical value is a parameter or a statistic. Explain your reasoning.

69) The average salary of all assembly-line employees at a certain car manufacturer is \$42,000.

69) _____

Answer: It describes a parameter because the \$42,000 is based on all the workers at the car manufacturer.

Diff: 0 Type: SA

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

Identify the sampling technique used.

70) Based on 11,000 responses from 48,000 questionnaires sent to its alumni, a major university estimated that the annual salary of its alumni was \$118,000 per year.

70) _____

A) convenience

B) random

C) stratified

D) cluster

E) systematic

Answer: B

Diff: 0 Type: BI

Identify the data set's level of measurement.

71) the nationalities listed in a recent survey (for example, Asian, European, or Hispanic).

71) _____

A) ratio

B) nominal

C) interval

D) ordinal

Answer: B

Diff: 0 Type: BI

Identify the sampling technique used.

- 72) Thirty-five sophomores, 24 juniors and 25 seniors are randomly selected from 388 sophomores, 418 juniors and 573 seniors at a certain high school. 72) _____

A) convenience
B) stratified
C) systematic
D) cluster
E) random

Answer: B

Diff: 0 Type: BI

Identify the data set's level of measurement.

- 73) marriage status (married, single, or divorced) of the faculty at the University of Colorado 73) _____
A) ratio B) interval C) ordinal D) nominal

Answer: D

Diff: 0 Type: BI

Determine whether the data set is a population or a sample.

- 74) The age of every fourth person entering a department store 74) _____
A) sample B) population

Answer: A

Diff: 0 Type: BI