

Homework #1

Name _____

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

Fill in the blank.

- 1) The information we gather with experiments and with surveys is collectively called _____ 1) _____
- 2) The three main aspects of statistics are _____, _____, and _____ 2) _____
- 3) The basis of _____ is that each subject in the population has the same chance of being in the sample. 3) _____
- 4) The _____ is the set of all subjects of interest; while the _____ is a subset of the entire set of interest. 4) _____
- 5) A _____ is a numerical summary of the population; while a _____ is a numerical summary of the sample. 5) _____

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

Select the most appropriate answer.

- 6) The following statement refers to which aspect of a statistical study: "Based on previous clients, a marriage counselor concludes that the majority of marriages that begin with cohabitation before marriage will result in divorce"? 6) _____
A) Inference B) Description C) Design
- 7) The following statement refers to which aspect of a statistical study: "The average age of the students in a statistics class is 25 years"? 7) _____
A) Design B) Description C) Inference

The owners of a coffee shop conducted a taste test to determine whether its customers preferred a new coffee brand to the current one sold by the shop. Customers who were willing to participate were given small samples of each of the two brands in random order and were asked to select which one they preferred without knowing the brand. Of the 100 participating customers, 90% chose the new brand. Based on these results, the owners determined that a majority of their customers preferred the new brand and therefore switched their coffee supplier.

- 8) Predicting the preference of all of the coffee shop customers based on the taste test results refers to which aspect of statistics? 8) _____
A) Investigation
B) None of these
C) Inference
D) Description
E) Design

9) Randomizing the order in which the samples of each brand were given to each customer refers to which aspect of statistics? 9) _____
A) Inference
B) Investigation
C) None of these
D) Design
E) Description

10) Stating that 90% of the taste testers preferred the new brand is an example of which type of statistics? 10) _____
A) None of these
B) Investigation
C) Description
D) Inference
E) Design

Select the most appropriate answer.

11) A summary measure that is computed from a sample to describe a characteristic of interest is called 11) _____
A) a poll
B) a data file
C) a variable
D) a parameter
E) a statistic

12) A numerical summary of the population is called 12) _____
A) a parameter
B) a data file
C) a statistic
D) a census
E) a variable

Determine whether the summary measure is better described as a parameter or a statistic.

13) The average height of NASCAR Nextel Cup Series drivers during the 2005 season. 13) _____
A) Statistic
B) Parameter

14) The average age of 25 congressional members who were selected at random from all U.S. Congressmen. 14) _____
A) Statistic
B) Parameter

15) The proportion of regional flights for United Airlines that were considered on-time during the month of December, 2007. 15) _____
A) Statistic
B) Parameter

16) The average weekly amount spent on groceries by a family of four based on a random sample of 100 families. 16) _____
A) Statistic
B) Parameter

Select the most appropriate answer.

- 17) In 2006, the General Social Survey asked "would you like to see more or less government spending on natural disasters?" Of the 1496 respondents, 723 responded "more" or "much more". The population of interest consists of 17) _____
- A) all American adults
 - B) the 1496 respondents
 - C) the 723 respondents who responded "more" or "much more"
 - D) the proportion of respondents who responded "more" or "much more"
 - E) the proportion of American adults who would respond "more" or "much more"
- 18) In 2006, the General Social Survey asked "would you like to see more or less government spending on natural disasters?" Of the 1496 respondents, 723 responded "more" or "much more". The sample consists of 18) _____
- A) the 723 respondents who responded "more" or "much more"
 - B) all American adults
 - C) the proportion of respondents who responded "more" or "much more"
 - D) the 1496 respondents
 - E) the proportion of American adults estimated to respond "more" or "much more"
- 19) In October of 2007, 71% of 1052 adults polled nationwide by The Harris Poll answered "Yes" to the question "Do you believe the theory that increased carbon dioxide and other gases released into the atmosphere will, if unchecked, lead to global warming and an increase in average temperatures?" (www.pollingreport.com/enviro.htm) The 71% responding "Yes" to the question is an example of 19) _____
- A) a parameter
 - B) the population
 - C) the sample
 - D) a statistic
 - E) random sampling
- 20) In October of 2007, 71% of 1052 adults polled nationwide by The Harris Poll answered "Yes" to the question "Do you believe the theory that increased carbon dioxide and other gases released into the atmosphere will, if unchecked, lead to global warming and an increase in average temperatures?" (www.pollingreport.com/enviro.htm) The predicted proportion of all American adults who would respond "Yes" to the question is an example of 20) _____
- A) the population
 - B) a parameter
 - C) a statistic
 - D) random sampling
 - E) the sample
- 21) A study published in 1990 attempted to estimate the proportion of Florida residents who were willing to spend more tax dollars on protecting the Florida beaches from environmental disasters. Twenty-four hundred Florida residents were surveyed. Which of the following is the population of interest in the study? 21) _____
- A) all residents of the United States
 - B) all Florida residents who were willing to spend more tax dollars on protecting the beaches from environmental disasters.
 - C) the 2400 Florida residents surveyed
 - D) all Florida residents
 - E) all Florida residents who lived along the beaches

- 22) A manufacturer of cellular phones has decided that an assembly line is operating satisfactorily if less than 6% of the phones manufactured per day are defective. To check the quality of a day's production, the company decides to randomly sample 30 phones from a day's production and test for defects. Define the sample of interest to the manufacturer. 22) _____
- A) all defective cellular phones manufactured by the company
 - B) the 30 responses: defective or not defective
 - C) all cellular phones manufactured during the day in question
 - D) the 30 cellular phones that were sampled and tested
 - E) the 6% of the cellular phones that were defective

Provide an appropriate response.

- 23) The average salary of all General Motors workers is \$42,000. Identify a subject of the study. 23) _____
- A) All U.S. automotive workers
 - B) The average salary of a General Motors worker
 - C) All General Motors wage workers
 - D) A General Motors worker
 - E) All General Motors salary workers

Answer true or false.

- 24) 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. This technique produces a random sample. 24) _____
- A) False
 - B) True

- 25) To estimate the percentage of defective items a machine is producing, a quality control analyst inspects the first 100 items produced in a day. This technique produces a random sample. 25) _____
- A) False
 - B) True

- 26) 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 3700 responded "no". There was a fifty-cent charge for the call. The sampling technique used produces a random sample. 26) _____
- A) False
 - B) True

- 27) Descriptive statistics refers to methods of making decisions or predictions about a population, based on data obtained from a sample of that population; while inferential statistics refers to methods for summarizing the data. 27) _____
- A) False
 - B) True

- 28) Inferential statistics are used when data are available only for a sample; however, descriptive statistics are used when data are available for either a sample or a population. 28) _____
- A) False
 - B) True

Select the most appropriate answer.

- 29) Using statistics to draw conclusions about parameters is called 29) _____
- A) designing a study.
 - B) sampling.
 - C) inferential statistics.
 - D) descriptive statistics.
 - E) deductive statistics.

Provide an appropriate response.

30) From past figures, it is predicted that 39% of the registered voters in California will vote in the June primary. Which type of statistics does this statement reflect: inferential statistics or descriptive statistics? 30) _____

A) Descriptive statistics

B) Inferential statistics