BA 235 Business Statistics

What is Statistics Worksheet

Name Jordan Watkins Date 8/10/2020 Score_____

Directions: *Answer the following questions as True or False 2 pts ea.*

1. __T_____A summary measure that is computed from a sample is called a statistic.

2. ___T____In a sample of 350 students selected from a large college of business, 25% are found to be marketing majors.   The 25% is a statistic.

3. ___T__A statistic is typically a known quantity while a parameter is typically an unknown quantity.

4. ____T___Statistical inference is the process of making an estimate, prediction, or decision about a population based on sample data.

5. __T_____A descriptive measure of a sample is called a parameter.

Directions: *Answer the following multiple choice questions.* Questions 1-21 is 4 pts ea

1. A random sample of 50 football players is taken at Benedict College and it's found that their average GPA is 3.1. If this information is used to help estimate the average GPA for all football players at Benedict College, which branch of statistics was applied?
   a. Descriptive statistics
   b. Inferential statistics
   c. Sample statistics
   d. Population statistics

2. A descriptive measure that is computed from a sample is called a:
   a. parameter.
   b. statistic.
   c. sample.
   d. population.

3. Which of the following is a measure of the reliability of a statistical inference?
   a. A population parameter.
   b. A significance level.
   c. A descriptive statistic.
   d. A sample statistic.

4. A state representative who is running for the office of governor of a state with 2.3 million registered voters commissions a survey. In the survey, 37% of the 7,000 registered voters interviewed say they plan to vote for him. The population of interest is:
   a. the 2.3 million registered voters in the state.
   b. the 7,000 registered voters interviewed.
   c. the 37% who plan to vote for her.
   d. ALL the residents of the state.

5. The process of using sample statistics to draw conclusions about population parameters is called:
    a. finding the significance level.
    b. calculating descriptive statistics.
    c. doing inferential statistics.
    d. calculating the confidence level.

6. Which of the following represents a population, as opposed to a sample?
    a. 2,000 respondents to a magazine survey which has 600,000 subscribers.
    b. The first 15 students in your class completing a final exam.
    c. Every fourth student to arrive at the book store on your campus.
    d. All registered voters in the state of South Carolina.

7. A study is under way to determine the average height of all 37,000 adult pine trees in a certain national forest. The heights of 800 randomly selected adult pine trees are measured and analyzed. The parameter in the study is:
    a. the average height of the 800 randomly selected adult pine trees.
    b. the average height of all the adult pine trees in this forest.
    c. all the adult pine trees in this forest.
    d. the 800 adult pine trees selected at random from this forest.

8. How do confidence levels compare to significance levels?
    a. Confidence levels and significance levels are both typically small.
    b. Confidence levels and significance levels are both typically large.
    c. Confidence levels are typically small and significance levels are typically large.
    d. Confidence levels are typically large and significance levels are typically small.

9. The significance level of a statistical inference measures:
    a. the proportion of times a conclusion about a population will be correct in the long run.
    b. the proportion of times a conclusion about a population will be wrong in the long run.
    c. the proportion of times an estimation procedure will be correct in the long run.
    d. the proportion of times an estimation procedure will be wrong in the long run.

Directions: *Complete the following statements.*

10. A research of a large hospital wants to determine the percentage of all employees who favor a newly proposed benefits package. She selects 300 employees at random and finds that 85% approve the newly proposed package. The percentage of all employees of this company who favor the newly proposed package is a(n) ___parameter_____.

11. The Surgeon General wanted to study malpractice litigation in Chicago. A sample of 32,000 medical records was selected from all 3.5 million patients who were discharged during the year 2011. Using the information from the sample to make conclusions about malpractice litigation in Chicago is an example of doing _inferential_____ statistics.

12. Each of the following is a form of doing _____2_____ statistics: 1) presenting your data using a graph; 2) calculating the mean of your sample; and 3) organizing your data into a table.

13. The Commissioner of Health in the state of New York wanted to study malpractice litigation in Albany last year. She randomly selected 53,000 medical records from the population of 2.5 million patients in Albany last year. The proportion of malpractice claims filed from the 53,000 patients is an example of a(n) __statistic_____.

14. The Human Resources Director at Illinois State University wishes to develop an employee pension package. To get an idea of what components of a pension package are most important, he selects 525 employees at random and asks them for their opinions. The group of all employees at ISU is known as the _population_____.

[USE THIS INFORMATION TO ANSWER QUESTIONS 15-18]
At Midland Technical College, administrators want to determine the average commuting distance for their students who commute to school. They randomly select 250 students who commute and ask them the distance of their commute to campus. From this group a mean of 19.5 miles is computed.

15.	*Describe/find the parameter.* The mean commute distance for all commuting students at the college
16.	*Describe/find the statistic.* 19.5 miles
17.	*Describe the population.* All commuting students enrolled at the college
18.	*Describe the sample.* The 250 randomly selected commuting students

Briefly describe the difference between a population and a sample then give an example of EACH.

19.	*Describe the difference* A population is the group of all items of interest to a statistics practitioner, while a sample is a set of data drawn from a population
20.	*Example of a population and a sample* All the students at Benedict College is a population, while 150 is selected at randomly selected from Benedict College is a sample

Select the correct answer and write the appropriate letter in the space provided.

_____ **21**. The collection of all possible individuals, objects, or measurements is called

    a. a sample.
    b. a ratio measurement.
    c. an inference.
    d. a population

_____ **22**. Techniques used to organize, summarize, and present the data that have been collected are called

a. populations.
b. samples.
c. descriptive statistics.
d. inferential statistics.

_____ **23**. Quantitative variables

a always use the interval level of measurement.
b always use the ratio level of measurement.
c can not have "gaps" between values.
d are either discrete or continuous

_____ **24**. Techniques used to estimate something about a population, based on a sample, are called

a. descriptive statistics.
b. inferential statistics.
c. populations.
d. samples.

_____ **25**. Which of the following is ***not*** true of the interval scale?

a. the interval scale is used for ordered data
b. equal differences in the characteristic lead to equal differences in the measurement
c. the zero point on the interval scale represents the absence of the characteristic measured
d. the interval scale is not used for numeric data