

## Chapter 1 - The Nature of Probability and Statistics QUIZ

1. Statistics is the science of conducting studies to
  - A) solve a system of equations.
  - B) hypothesize, experiment, and form conclusions.
  - C) collect, organize, summarize, analyze, and draw conclusions from data.
  - D) monitor, study, and report on a subject.
2. How are statistics important in our everyday lives, and why do we need to understand them?
3. A \_\_\_\_\_ is a characteristic or attribute of a subject that can assume different values?
  - A) datum
  - B) variable
  - C) exponent
  - D) sample
4. Variables with values that are determined by chance are called \_\_\_\_\_.
  - A) specialized.
  - B) erratic variables.
  - C) random variables.
  - D) inconsistent variables.
5. Each value in a data set may be referred to as either a data value or a(n) \_\_\_\_\_.
  - A) subdata
  - B) datum
  - C) atom
  - D) point
6. If a weather center monitors and calculates the average number of tornadoes that pass through Topeka, Kansas each year, what type of variable would they be investigating?
  - A) random variable
  - B) controlled variable
  - C) isolated variable
  - D) hypothesis variable
7. Inferential statistics is based on probability.
8. Which of the following correctly describes the relationship between a sample and a population?
  - A) A sample is a group of populations that are subject to observation.
  - B) A population is a group of samples that may or may not be included in a study.
  - C) A sample is a group of subjects selected from a population to be studied.
  - D) A population and a sample are not related.

9. A \_\_\_\_\_ consists of all subjects that are being studied.  
Ans: population
10. \_\_\_\_\_ is a decision-making process for evaluating claims about a population, based on information obtained from samples.
11. Which branch of statistics would employ probability to predict how many miles one should be able to drive a 2000 Toyota Celica during its lifetime?  
A) time series statistics                      C) inferential statistics  
B) descriptive statistics                      D) differential statistics
12. In which branch of statistics would a researcher acquire twenty-five 2000 Toyota Celicas, drive them until they had a major mechanical failure, record the final mileage, and then write a report for *Car and Driver*?  
A) predictive statistics                      C) inferential statistics  
B) descriptive statistics                      D) differential statistics
13. Based on her electric bills from last year, Mrs. Smith expects she will be paying \$75/month this year. This is an example of descriptive statistics.
14. Explain the difference between qualitative, quantitative, discrete, and continuous variables.
15. A \_\_\_\_\_ variable assumes values that can be counted.
16. Quantitative data can be further classified as continuous or nonsequential.
17. What level of measurement would be applied when doing a survey on the average American's shoe size?
18. What level of measurement classifies data into mutually exclusive categories in which no order or ranking can be imposed on the data?  
A) nominal    B) ordinal    C) interval    D) ratio

19. What level of measurement allows for the ranking of data, a precise difference between units of measure, and also includes a true zero?  
A) nominal B) ordinal C) interval D) ratio
20. Classifying the fruit in a basket as apple, orange, or banana, is an example of the \_\_\_\_\_ level of measurement?  
A) nominal B) ordinal C) interval D) ratio
21. Rating a restaurant by a number of stars is an example of an ordinal level of measurement.
22. The \_\_\_\_\_ level of measurement classifies data into categories that can be ranked; however, precise differences between the ranks do not exist.
23. Determining the number of people from the state of Alaska who voted for a Republican in the last election is an example of \_\_\_\_\_ measurement.
24. A person's hair color would be an example of a quantitative variable.
25. The variable of height is an example of a quantitative variable.
26. The number of birds in a tree is an example of a continuous variable.
27. The amount of time needed to run the Boston marathon is an example of which type of variable?  
A) discrete B) qualitative C) continuous D) temporal
28. Give the boundaries of the given value.  
7.49  
A) 7.489-7.491 B) 7.485-7.495 C) 7.48-7.5 D) 6.49-8.49
29. The four basic methods used to obtain samples are: random, irregular, cluster, and stratified sampling.
30. In a research study, it is always preferable for the researcher to carefully choose his participants rather than randomly select them from a suitable group.