

Name: _____

Conditional Probability and Tables:

Please answer the following questions. Write the answers in a Word document and send to me via email. Questions involving multiple answers can be listed separated by a comma. Multiple choice answers, you may write the answer choices as A, B, C, and D. First answer choice is A, second is B, and so on...

Question 1

Identify the data set's level of measurement.

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

- ☐ interval
- ☐ ratio
- ☐ ordinal
- ☐ nominal

Question 2

Solve the problem.

Parking at a large university has become a very big problem. University administrators are interested in determining the average parking time (e.g. the time it takes a student to find a parking spot) of its students. An administrator inconspicuously followed 250 students and carefully recorded their parking times. What type of variable is the administration interested in collecting?

- ☐ quantitative data
- ☐ qualitative data

Question 3

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

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

- ☐ Random
- ☐ Systematic
- ☐ Convenience
- ☐ Cluster

Question 4

A company sponsoring a new Internet search engine wants to collect data on the ease of using it. Which is the best way to collect the data?

- ☐ simulation
- ☐ sample survey
- ☐ observational study
- ☐ experiment
- ☐ census

Question 5

Determine whether the statement is based on census data or sample data.

A researcher determines that 42.7% of all downtown office buildings have ventilation problems.

- ☐ Census data
- ☐ Sample data

Question 6

Identify the data set's level of measurement.

ages of students in a statistic class

- ☐ interval
- ☐ ratio
- ☐ ordinal
- ☐ nominal

Question 7

Identify the data set's level of measurement.

the years the summer Olympics were held in the United States

- ☐ interval
- ☐ nominal
- ☐ ratio
- ☐ ordinal

Question 8

Answer the question.

Which of the following describes a study in which the researchers do not attempt to change the characteristics of those being studied?

- ☐ Observational study
- ☐ Single-blind experiment
- ☐ Case-control study
- ☐ Double-blind experiment

Question 9

Answer the question.

Which of the following describes the bias that occurs when researchers select their sample in such a way that it is unlikely to be representative of the population?

- ☐ Participation bias
- ☐ Availability bias
- ☐ Selection bias
- ☐ Double-blind bias

Question 10

Solve the problem.

A watchdog group is investigating how people are treated during the foreclosure process. Surveys were mailed to a random sample of 300 people who had recently been threatened with foreclosure. 75 of the surveys were returned by the postal service because the intended recipients had moved and left no forwarding address. What type of problem has occurred?

- ☐ measurement error
- ☐ nonresponse bias
- ☐ selection bias

Question 11

Determine whether the statement is based on census data or sample data.

After inspecting all of 55,000 kg of meat stored at the Wurst Sausage Company, it was found that 45,000 kg of the meat was spoiled.

- ☐ Census data
- ☐ Sample data

Question 12

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

A market researcher selects 500 people from each of 10 cities.

- ☐ Stratified
- ☐ Convenience
- ☐ Systematic
- ☐ Cluster
- ☐ Random

Question 13

Which of the following statements is true about the confidence interval for a population proportion?

- ☐ It is equal to the sample proportion plus or minus a calculated amount called the margin of error.
- ☐ It is equal to the population proportion plus or minus a calculated amount called the standard error.
- ☐ The confidence interval for a proportion will always contain the true population proportion.
- ☐ The confidence interval for a proportion does not need a specified confidence level.

Question 14

Solve the problem.

A study in the state of Georgia was conducted to determine the percentage of all community college students who have taken at least one online class. 1500 community college students were contacted and asked if they had taken at least one online class during their time at their community college. These responses were then used to estimate the percentage of all community college students who have taken at least one online class. What type of variable is being collected?

- ☐ quantitative data
- ☐ qualitative data

Question 15

Determine whether a census is practical in the situation described. Explain your reasoning.

You want to determine the mean salary of all biology instructors at the University of Illinois.

- ☐ A census is practical. The number of biology instructors at the University of Illinois is not very large and it would probably be easy to obtain their salaries through a survey that promised anonymity.
- ☐ A census is not practical. The number of biology instructors at the University of Illinois is too large and it would probably be difficult to obtain their salaries because of privacy issues.