

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 variable of interest in the study.

A clinic gives a drug to a group of ten patients and a placebo to another group of ten patients to find out if the drug has an effect on the patients' illness.

- ☐ Whether the drug has an effect on the patients' illness
- ☐ The group of 10 patients
- ☐ Whether the placebo effects the patients' illness

Question 2

Is the study experimental or observational?

A marketing firm does a survey to find out how many people use a product. Of the one hundred people contacted, fifteen said they use the product.

- ☐ Observational
- ☐ Experimental

Question 3

Which of the following statements is not true about a sampling distribution?

- ☐ It tells us how often we can expect to see particular values of our estimator.
- ☐ It is the probability distribution of a statistic.
- ☐ It is used for making inferences about a population.
- ☐ All these statements are true.

Question 4

Solve the problem.

What method of data collection would you use to collect data for a study where a political pollster wishes to determine if his candidate is leading in the polls?

- ☐ observational study
- ☐ survey
- ☐ designed experiment
- ☐ published source

Question 5

Answer the question.

Which of the following describes the bias that can occur when members of a study's sample are volunteers?

- ☐ Participation bias
- ☐ Single-blind bias
- ☐ Selection bias
- ☐ Sample bias

Question 6

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?

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

Question 7

Identify the data set's level of measurement.

ages of students in a statistic class

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

Question 8

Fill in the blank to complete the statement.

Researchers are interested in learning more about the age of women when they marry for the first time so they survey 500 married or divorced women and ask them how old they were when they first married. The collection of the ages of the 500 women when they first married is a _____.

- ☐ Sample
- ☐ Population
- ☐ Statistic
- ☐ Parameter

Question 9

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?

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

Question 10

Identify the data set's level of measurement.

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

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

Question 11

Fill in the blank to complete the statement.

Suppose that the age of all the U. S. vice presidents when they took office was recorded. The collection of the ages of all the U. S. vice presidents when they took office is a _____.

- ☐ Population
- ☐ Statistic
- ☐ Sample
- ☐ Parameter

Question 12

Choose the best wording for the question in the study.

In a survey to assess attitudes toward genetically modified foods, which of the following survey questions will give the most accurate results?

- ☐ How do you feel about allowing untested genetically modified foods to be sold in stores?
- ☐ How do you feel about genetically modified foods?
- ☐ Do you agree with increasing the production of genetically modified foods which could be harmful to the environment?
- ☐ Do you agree with increasing the production of genetically modified foods to increase the world food supply?

Question 13

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.

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?

- ☐ qualitative data
- ☐ quantitative data

Question 15

Max is interested in whether there is community interest in having local musicians perform music in the park in the evenings during the summer. Max goes to the park for several evenings in a row and asks people visiting the park whether they would like to hear music in the evening. Out of the 200 people he surveys, 58% respond favorably. This scenario is describing what type of sampling bias?

- ☐ Voluntary response bias
- ☐ Survey bias
- ☐ Nonresponse bias
- ☐ Measurement bias