

L8 HW

- Due Feb 10 at 11:59pm
- Points 17
- Questions 17
- Time Limit None
- Allowed Attempts 3

Instructions



You get two attempts on all homework quizzes.

In all quizzes and homeworks in this course, round your answers to **THREE DECIMAL** places unless otherwise indicated.

Take the Quiz Again

Attempt History

	Attempt	Time	Score
KEPT	Attempt 2	1 minute	17 out of 17
LATEST	Attempt 2	1 minute	17 out of 17
	Attempt 1	11 minutes	15 out of 17

⚠️ Answers will be shown after your last attempt

Score for this attempt: 17 out of 17

Submitted Feb 9 at 12:36pm

This attempt took 1 minute.



Question 1

1 / 1 pts

Which of the following variables is/are quantitative? (Mark all that apply)

- ☒ The number of people in a randomly selected classroom on campus
- ☐ The 3 most common brands of car found in the US

- ☐ The telephone number of a randomly selected business in town
- ☐ The grade of a student in a class (A, B, C...)



Question 2

1 / 1 pts

Which one of the following is a statistically valid reason for sampling randomly when choosing subjects for a study?

- ☒ Sampling randomly tends to reduce sampling bias or risk
- ☐ Sampling randomly (with a large sample) gives a perfect reflection of the population
- ☐ Sampling randomly is easier than sampling nonrandomly
- ☐ Actually, there is no statistically valid reason for sampling randomly



Question 3

1 / 1 pts

A study conducted by researchers from the Department of Education wanted to know the average debt of college students in the United States. In order to obtain a sample representative of all students, the researchers divided college students into the four classes (freshman, sophomore, junior, and senior) and then took a random sample of students from each class. Which sampling method did they use?

- ☒ Stratified random sampling
- ☐ Systematic random sampling
- ☐ Cluster sampling
- ☐ Simple random sampling



Question 4

1 / 1 pts

Students in an Introductory Statistics class at BYU-Idaho were studying prices of cold cereal at grocery stores in Rexburg. To get a sample of cold cereal prices, they went to Albertson's and rolled a die to decide which box from the left of the top shelf they would start on. They then recorded every 6th cereal after the first, moving from left to right down the shelves, recording the name, size, and price of each cereal in their sample. Which sampling method did they use?

- ☐ Stratified random sampling
- ☒ Systematic random sampling
- ☐ Cluster sampling
- ☐ Simple random sampling



Question 5

1 / 1 pts

Is the study described in the previous question an experiment or an observational study, and why?

- ☐ An experiment, because the students had control over which sampling method they used
- ☐ An experiment, because the students had control over which cereals would be selected for the study
- ☒ An observational study, because the students had no control over the price of the individual cereals
- ☐ An observational study, because the students had no control over which cereals were selected



Question 6

1 / 1 pts

Which of the following studies depicts an observational study?



A parent group examines 25 recently released PG-13 movies and records the number of sexual innuendos and curse words that occur in each.



A sample of 504 patients in early stages of Alzheimer's disease is divided into two groups. One group receives an experimental drug and the other a placebo. The advance of the disease is tracked at one-month intervals over the next year.

- ☐ None of them is observational because, in both cases, we are gathering information from each subject.



Question 7

1 / 1 pts

Each presidential election, many different groups want to know how popular each candidate is among the electorate. In the recent election, one marketing research firm was asked by a special interest group to help estimate the proportion of Americans who supported a particular candidate. From a list of all registered voters, 8000 names were randomly selected. An automated phone-call was made to each of the 8000 individuals selected asking them to answer a few questions indicating their voting preferences. The marketing firm received 2969 responses. The population for this study was:

- ☒ All registered voters in the US
- ☐ The 2969 people who answered the survey questions
- ☐ The 8000 people who received a phone call



Question 8

1 / 1 pts

Researchers would like to determine if reviewing material consistently within an hour after class helps students perform better on exams than if students wait to review material the day before the exam. To answer this question the researchers are trying to determine if an observational study or an experiment would be more appropriate. They are discussing who the population would be and how they will determine which sampling method will best represent the population. Which of the five steps of the statistical process are the researchers currently applying?

- ☒ Design the Study
- ☐ Collect Data

- ☐ Describe the Data
- ☐ Make Inferences
- ☐ Take Action



Question 9

1 / 1 pts

A researcher has collected the results of a survey where the participants were asked how many hours of T.V. they watch each day. The researcher tallies the frequencies for each category and computes mean number of hours watched. She then creates a histogram to help illustrate the overall distribution. Which of the five steps of the statistical process did the researcher apply?

- ☐ Design the Study
- ☐ Collect Data
- ☒ Describe the Data
- ☐ Make Inferences
- ☐ Take Action



Question 10

1 / 1 pts

Mumbai, India is a quickly growing city of importance in its own country as well as the global economy. A marketing research firm has been asked by a prominent fast food restaurant to help determine if the citizens of Mumbai would support this fast food business. From a list of all registered tax payers, 3000 names are randomly selected. Each individual on the list is mailed a brief questionnaire. The researchers receive 1049 responses. The population is:

- ☐ The 1049 people who respond.
- ☒ The citizens of Mumbai.
- ☐ Cannot be determined



Question 11

1 / 1 pts

Mumbai, India is a quickly growing city of importance in its own country as well as the global economy. A marketing research firm has been asked by a prominent fast food restaurant to help determine if the citizens of Mumbai would support this fast food business. From a list of all registered tax payers, 3000 names are randomly selected. Each individual on the list is mailed a brief questionnaire. The researchers receive 1049 responses. The sample is:

- ☒ The 1049 people who respond.
- ☐ The citizens of Mumbai.
- ☐ Cannot be determined.



Question 12

1 / 1 pts

Studies have shown that retention of classroom materials can drop as low as 58% within 15 minutes of class and within 44% after the first hour after class. This forgetting curve continues so that within six days only 25% is remembered. How can a student conquer this forgetting curve? The researchers in this study claim that constant review is important. Suppose your teacher wanted to test this and invited you to participate in a study where you were asked to review specific material 15 minutes after class for 10 minutes, an hour after class for ten minutes and then again two days after class for 10 minutes. Your teacher then gives you a short ten question quiz where your score out of ten is recorded. What type of data is your teacher collecting?

- ☒ Quantitative
- ☐ Categorical



Question 13

1 / 1 pts

Studies have shown that retention of classroom materials can drop as low as 58% within 15 minutes of class and within 44% after the first hour after class. This forgetting curve continues so that within six days only 25% is remembered. How can a student conquer this forgetting curve? The researchers in this study claim that constant review is important. Suppose your teacher wanted to test this and invited you to participate in a study where you were asked to review specific material 15 minutes after class for 10 minutes, an hour after class for ten minutes and then again two days after class for 10 minutes. After the sixth day, your teacher asks you if you feel confident that you have retained at least 50% of the material. He then records your response as Yes, No, Not Sure. What type of data is your teacher collecting?

- ☐ Quantitative
- ☒ Categorical



Question 14

1 / 1 pts

Which of the following would be considered an experimental design?

- ☐ A Telephone Poll asking people about whether or not they like a certain product.
- ☒

Randomly choosing 30 steel bars and applying one coating to them and applying a different coating on another randomly chosen 30 bars. Then comparing the results of durability.

- ☐ Measuring the time it takes machine A and machine B to pack boxes.
- ☐ A mailed survey asking people whether or not they have used a certain product



Question 15

1 / 1 pts

In a study to determine the average wage of working people in Mumbai, which of the following would be the best sample?

- ☐ every tenth worker that you meet as you travel the streets of Mumbai
- ☐ all of the workers in one working district of Mumbai
- ☒ many randomly selected workers in each of several working districts of Mumbai
- ☐ all the female workers



Question 16

1 / 1 pts

You want to construct a machine that uses a new radiation technique to cure cancer. You choose some children who have cancer to use your machine, and have the rest of them use the traditional methods. What (or who) are the experimental units or subjects?

- ☒ The children
- ☐ The parents
- ☐ The administrators
- ☐ the machines used



Question 17

1 / 1 pts

A certain process for manufacturing integrated circuits has been in use for a period of time, and it is known that 12% of the circuits it produces are defective. A new process that is supposed to reduce the proportion of defectives is being tested. In a simple random sample of circuits produced by the new process, 11% were defective. It is reasonable to conclude that the new process is better.

- ☐ True since 11% is different than 12%.
- ☐ False since 11% is only 1% lower than 12% and that is not significant.
- ☐ True since the data is a random sample and it represents the population.
- ☒ False since we need more information to determine that the new process is better.

Quiz Score: 17 out of 17