Assignment 2019FA-Assign01 due 09/16/2019 at 09:00pm EDT

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1. (1 point)
Ordinary arithmetic operations are meaningful:

- A. only with quantitative data
- B. either with quantitative or qualitative data
- C. only with qualitative data
- D. None of the above answers is correct

Qualitative data:

- A. must be nonnumeric
- B. may be either numeric or nonnumeric
- C. cannot be numeric
- D. must be numeric

Correct Answers:

- A
- B

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2. (1 point) You are doing a survey on UBC students. Participating students come from different majors and years. The participants are asked how much they pay for tuition this academic year. What is the variable of interest?

- A. Tuition fee paid by a student
- B. Major of a student
- C. UBC students
- D. Study year of a student

Correct Answers:

- A

What type of variable is "*monthly rainfall in Vancouver* "?

- A. quantitative
- B. categorical
- C. none of the above

Correct Answers:

- A

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4. (1 point)
A simple random sample of voters is taken in order to determine the chances of a certain candidate winning an election. This study includes a sample that is

- A. Representative
- B. Non-representative
- C. Cannot be determined

Correct Answers:

- A

Below is a list of numerical variables from an annual survey of university students. Numerical variables can be classified as discrete or continuous. Which variable is discrete?

- A. Annual tuition fees
- B. Monthly rent for student accommodation
- C. Number of textbooks purchased
- D. Commuting distance to university (in kilometres)
- E. Total cost of textbooks

Solution: The answer is number of textbooks purchased.
Correct Answers:

- C

Select True or False from each pull-down menu, depending on whether the corresponding statement is true or false.

[?] 1. The target population is the population about which we want to draw inferences and conclusions, while the sampled population is the actual population from which the sample has been taken.

[?] 2. A sampling error can be reduced by taking a larger sample.

[?] 3. Sampling error refers to the difference between the sample and the population that exists only because of the observations that happened to be selected for the sample.

[?] 4. Nonresponse error refers to error, or bias, introduced when responses are not obtained from some members of the sample. When this happens, the sample observations that are collected may not be representative of the target population, resulting in bias results.

Correct Answers:

- T
- T
- T
- T

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7. (1 point)
A researcher is conducting a study on Parkinson's disease. For the 100 patients he interviews, he records their gender, annual income, occupation and weight. He finds that 50% of the interviewed subjects who have Parkinson's disease work in the service industry, and concluded that working in the service industry causes ones chance of getting Parkinson's disease to increase. Which of the following statements is/are correct about the researcher's claim?

- A. The researcher cannot make such a claim since this is an observational study.
- B. The researcher cannot make such a claim since 50% is too small.
- C. Both (A) and (B).
- D. Neither (A) nor (B).

Correct Answers:

- Choice 1

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8. (1 point) A choral conductor has 1515 singers in her choir, some of them are professional singers. The conductor wants to estimate what percentage of singers are professional, but can't ask all 1515, so she instead asks 682 singers in front and finds 27 who are professionals.

(a) What specific type of bias does this scenario demonstrate?

- A. It is representative of the population.
- B. Voluntary response sampling
- C. Convenience Sampling
- D. None of the above.

(b) Identify the population

- A. 27/1515
- B. percentage of entire singers who are professional
- C. entire singers
- D. None of the above.

(c) Identify the parameter

- A. percentage of entire singers who are professional
- B. range of values in which 95% values fall
- C. 27
- D. None of the above.

(d) Identify the statistic.

- A. 1515
- B. 27/682
- C. entire choir members
- D. None of the above.

Correct Answers:

- C
- C
- A
- B

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9. (1 point)

A poll is sent out to 130 employees at a medical clinic. Only 35% bother to fill them out and return them. This an example of

- A. an insufficient sample size
- B. participation bias
- C. the placebo effect
- D. sampling bias
- E. sampling variability

Correct Answers:

- B

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10. (1 point)

Why is a sample often a better way to obtain information about a population than a census?

- A. A census is more costly than taking a sample
- B. A census is too time consuming
- C. A census is frequently impractical
- D. All of the above
- E. None of the above

Correct Answers:

- D

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11. (1 point)

In sampling, why is obtaining a representative sample important?

- A. Because representative samples guarantee that our results are reliable
- B. Because we are using the sample to draw conclusions about the entire population
- C. None of the above

Correct Answers:

- B

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12. (1 point)

Determine whether the follow descriptions correspond to an observational study (OS), a controlled experiment (CE), or a double blind experiment (DBE). Write the abbreviations above as your answers. (without the parenthesis)

(a) A new study examines the effects of regular exercise on child obesity by taking a survey of 500 children on their weight and exercise habits.
answer: _____

(b) A therapist compiles information on his/her patients who have survived child abuse to explain the effects of child abuse on adult survivors.
answer: _____

(c) A doctor gives half of his/her patients in a study a treatment and the other half a placebo, but the patients do not know which they received.
answer: _____

Correct Answers:

- OS
- OS
- CE

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13. (1 point)

Cholesterol levels of 28 year old adult women who exercised 4 or more times per week are compared to those of 28 year old adult women who exercised no more than once a week. This an example of

- A. an observational study
- B. a case- controlled study
- C. a comparative experiment
- D. an uncontrolled experiment

Correct Answers:

- A

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14. (1 point)

A medical study, in which a control group is compared to a treatment group,

is carried out to reduce the effect of

- A. variability
- B. the sample size
- C. voluntary response bias
- D. confounding factors

Correct Answers:

- D