

AP Statistics - Sampling Methods and Bias in Surveys - Quiz

Common Core AP STAT 3.1, AP STAT 3.2, AP STAT 3.3, HSS-IC.B.3 · maths-pdf.fr/en/

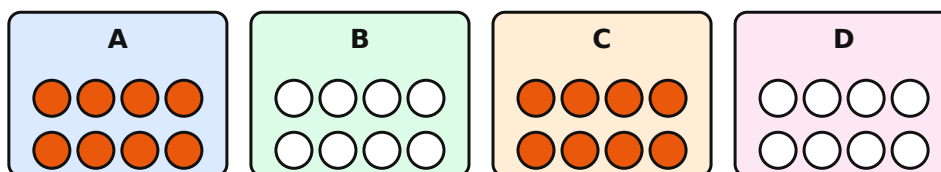
Name: _____ Class: _____ Date: ____/____/____

Ten multiple-choice questions check the names of sampling methods and the sources of bias. Read each explanation, since the choices are similar-sounding on purpose.

AP Statistics · Common Core State Standards: **AP STAT 3.1, AP STAT 3.2, AP STAT 3.3, HSS-IC.B.3**

Questions

Question 1

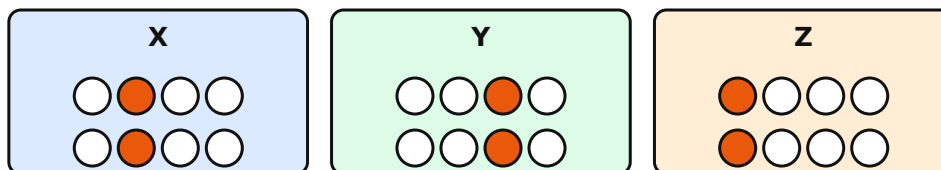


Selected groups.

The picture shows a:

- A. cluster sample
- B. stratified sample
- C. systematic sample
- D. convenience sample

Question 2



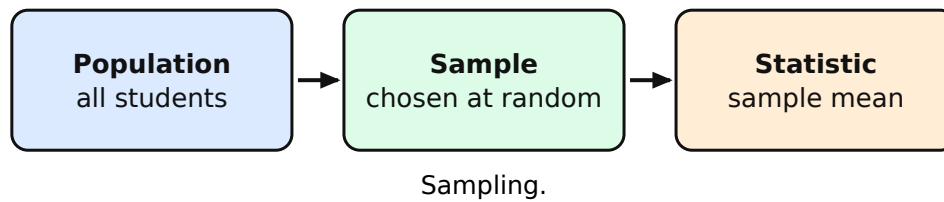
Selected dots.

The picture shows a:

- A. cluster sample
- B. stratified random sample
- C. voluntary response sample

D. census

Question 3



The sample mean is called a:

- A. statistic
- B. parameter
- C. population
- D. census

Question 4

Asking the first 20 students you meet in the hallway is a:

- A. simple random sample
- B. stratified sample
- C. cluster sample
- D. convenience sample

Question 5

A call-in poll is subject to:

- A. undercoverage only
- B. no bias
- C. voluntary response bias
- D. the law of large numbers

Question 6

Which would reduce bias?

- A. Taking a random sample of the population
- B. Doubling a convenience sample
- C. Using only volunteers
- D. Asking leading questions

Question 7

In an SRS of size n :

- A. every individual is from a different stratum
- B. every group of n individuals has an equal chance of selection

- C. the first n individuals are chosen
- D. only clusters are picked

Question 8

A survey question with loaded wording causes:

- A. undercoverage
- B. nonresponse
- C. response bias
- D. sampling variability

Question 9

A parameter is a number that describes:

- A. a sample
- B. a statistic
- C. a bias
- D. a population

Question 10

To take a systematic sample of 10 from 100 individuals, choose a random start from 1 to 10 and then:

- A. take every 2nd individual
- B. take every 10th individual
- C. take any 10 you like
- D. take all individuals after the start

Answers

1. **A** – Whole groups (A and C) were selected and everyone in them is included, which defines a cluster sample.
2. **B** – A random sample was taken from every group, which is stratified sampling.
3. **A** – A value computed from a sample is a statistic.
4. **D** – Students are chosen because they are easy to reach, not at random.
5. **C** – Only people with strong opinions tend to respond.
6. **A** – Random selection removes systematic favoritism. A larger biased sample is still biased.
7. **B** – That equal-chance property is the definition of an SRS.
8. **C** – Wording that pushes answers produces response bias.
9. **D** – Parameters describe populations and are usually unknown.
10. **B** – Every k th individual with $k = \text{population size} / \text{sample size} = 10$.

Remember

- Population vs sample; parameter vs statistic.
- SRS gives every group of n individuals an equal chance; stratified takes an SRS from every stratum; cluster surveys all members of randomly chosen clusters.
- Convenience and voluntary response samples are biased.
- Sources of bias: undercoverage, nonresponse, response bias, voluntary response.
- A larger random sample reduces sampling variability but never fixes bias.