

Name Key Fall 2016

Sampling and Bias HW

For each situation, identify the sampling technique used (simple random, cluster, stratified, convenience, voluntary response, or systematic).

1. Every fifth person boarding a plane is searched thoroughly.

systematic

2. At a local community college, five math classes are randomly selected out of 20 and all of the students from those classes are interviewed.

cluster

3. A researcher randomly selects and interviews fifty male and fifty female teachers.

stratified

4. A researcher for an airline interviews all of the passengers on five randomly selected flights.

cluster

5. Based on 12,500 responses from 42,000 surveys sent to its alumni, a major university estimated that the annual salary of its alumni was \$92,500.

voluntary response

6. A community college student interviews the first 100 students to enter the building to determine the percentage of students that own a car.

convenience

7. A market researcher randomly selects 200 drivers under 35 years of age and 100 drivers over 35 years of age.

stratified

8. All of the teachers from 85 randomly selected nation's middle schools were interviewed.

cluster

9. To avoid working late, the quality control manager inspects the most recent ten items produced that day.

convenience

10. The names of 70 contestants are written on 70 cards. The cards are placed in a bag, and three names are picked from the bag.

simple random

11. 32 sophomores, 35 juniors, and 49 seniors are randomly selected from 230 sophomores, 280 juniors, and 577 seniors at a certain high school.

stratified

12. To ensure customer satisfaction, every 35th phone call received by customer service will be monitored.

systematic

13. Calling randomly generated telephone numbers, a study asked 855 U.S. adults which medical conditions could be prevented by their diet.

simple random

4. A pregnancy study in Chicago randomly selected 25 communities from the metropolitan area and then interviewed all pregnant women in these communities.

cluster

For the following examples, determine whether the survey sample is biased or unbiased. Explain your answers.

15. Question – what is your favorite sport? Sample is chosen from people attending a soccer game.

Biased – people at a soccer game will probably like soccer

16. Question – should more money be put into athletic programs or music programs at school? Sample is chosen from students in the band program.

Biased – band students will probably choose music.

17. Question – what is your favorite vacation destination? Sample is chosen by asking every student in the class.

Can argue either way. Unbiased – a class will have many different students with different interests. Biased – students are all the same age/may

Tell whether the question is potentially biased. Explain your answer. If the question is potentially biased, rewrite it so that it is not. have similar interests.

18. Don't you agree that the voting age should be lowered to 16 because many 16-year olds are responsible and informed?

Biased "Should the voting age be lowered to 16?"

19. Do you think the city should risk an increase in pollution by allowing expansion of the Northern Industrial Park?

Biased "Do you think the city should expand Northern Industrial Park?"

20. Would you pay even higher concert ticket prices to finance a new arena?

Biased "Would you pay higher ticket prices to finance a new arena?"

21. Due to diminishing resources, should a law be made to require people to recycle?

Biased "Should a law be made to require people to recycle?"

You want to determine whether to serve hamburger or hotdogs at a soccer team party.

22. Write a survey question that would likely provide biased results.

"Would you rather have delicious hamburgers or disgusting hotdogs?"

23. Write a survey question that would likely produce unbiased results.

"Would you rather have hamburgers or hotdogs?"