Samples, bias and drawing conclusions worksheet – Grade 8

Grade 8 · Mixed level · 20 questions · **Version X9122**

Name: _____ Date: _____ Score: ___ / 20

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1. In which kind of sample does you ask whoever is easiest to reach?
   A. Random **B.** Systematic **C.** Convenience **D.** Voluntary

2. In which kind of sample does people choose for themselves whether to reply?
   A. Random **B.** Systematic **C.** Convenience **D.** Voluntary

3. Maya surveys teenagers at one skate park to learn about the teenagers in a city. Is this sample biased?
   A. Yes **B.** No

4. Ravi surveys people at one political rally to learn about all the voters in a town. Is this sample biased?
   A. Yes **B.** No

5. Ethan surveys a random draw of teenagers from every school to learn about the teenagers in a city. Is this sample biased?
   A. Yes **B.** No

6. A survey must represent all the families in a district. Which sample is best?
   A. families who reply to an online poll **B.** only the first person asked
   C. families drawn at random from the district list **D.** the surveyor's friends

7. What kind of sample is this: names drawn from a hat holding every name?
   A. Random **B.** Systematic **C.** Convenience **D.** Voluntary

8. Why is asking the first 20 students to arrive a poor way to learn about all the students in a school?
   A. Because the answers are numbers **B.** Because every person has the same chance
   C. Because the sample is too random
   D. Because early arrivals may live closer or travel differently

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9. What is the sample in this study: Ethan surveys customers picked at random through the whole week to learn about all the customers of a store?

   A. all the customers of a store **B.** customers picked at random through the whole week

10. Why is asking members at the gym at 6 a.m. a poor way to learn about all the members of a gym?

    A. Because every person has the same chance

    B. Because early members may have different habits

    C. Because the sample is too random **D.** Because the answers are numbers

11. Why is asking families who reply to an online poll a poor way to learn about all the families in a district?

    A. Because people who choose to reply may have strong views

    B. Because the sample is too random **C.** Because every person has the same chance

    D. Because the answers are numbers

12. Find the sample in this study: Hana surveys customers picked at random through the whole week to learn about all the customers of a store.

    A. all the customers of a store **B.** customers picked at random through the whole week

13. Why is asking people at one political rally a poor way to learn about all the voters in a town?

    A. Because the answers are numbers **B.** Because every person has the same chance

    C. Because people at a rally mostly share one view **D.** Because the sample is too random

14. Why is asking customers on Saturday morning only a poor way to learn about all the customers of a store?

    A. Because the sample is too random

    B. Because weekend shoppers may differ from others

    C. Because every person has the same chance **D.** Because the answers are numbers

15. In a random sample of 120 students, 24 play an instrument. Estimate how many of the 600 students in the district play one.

    Answer: _____

16. A poll says 40% support a plan, with a margin of error of 2%. What is the lowest likely value, as a percent?

    Answer: _____

17. A poll of 200 shows 50%, plus or minus 3%. Could the true value be 56%?

    A. Not likely **B.** Yes, it is very likely

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18. Ravi samples 200 items and finds 60 faulty. What percent is that?

    Answer: _____

19. A quality check finds 36 faulty items in a random sample of 120. About how many of 1200 items would be faulty?

    Answer: _____

20. In a random sample of 200, 80 support a plan. Estimate the number who support it among 4000 people.

    Answer: _____

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Answer key · Version X9122

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1. **C (Convenience)**
2. **D (Voluntary)**
3. **A (Yes)**
4. **A (Yes)**
5. **B (No)**
6. **C (families drawn at random from the district list)**
7. **A (Random)**
8. **D (Because early arrivals may live closer or travel differently)**
9. **B (customers picked at random through the whole week)**
10. **B (Because early members may have different habits)**
11. **A (Because people who choose to reply may have strong views)**
12. **B (customers picked at random through the whole week)**
13. **C (Because people at a rally mostly share one view)**
14. **B (Because weekend shoppers may differ from others)**
15. **120**
16. **38%**
17. **A (Not likely)**
18. **30%**
19. **360**
20. **1600**

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