

Math 9 Unit 9 Probability and Statistics Practice Test**Multiple Choice**

Identify the choice that best completes the statement or answers the question.

- _____ 1. Leila arrives at the airport 3 hours before her flight to Chicago because each of the past 4 times she has travelled to the USA, it took her over 1.5 h to get through check-in and security.
Is her decision based on theoretical probability, experimental probability, or subjective judgment?
- Theoretical probability
 - A combination of theoretical probability and subjective judgment
 - Subjective judgment
 - Experimental probability
- _____ 2. Haley will not go on a cruise because the boat may sink even though cruise ships are very rarely involved in accidents.
Is her decision based on theoretical probability, experimental probability, or subjective judgment?
- Subjective judgment
 - A combination of theoretical and experimental probability
 - Experimental probability
 - Theoretical probability
- _____ 3. The chance of winning a prize in a lottery was 15%.
Claudia was having a lucky day, so she bought a ticket.
Was her decision based on theoretical probability, experimental probability, or subjective judgment?
- Experimental probability
 - Subjective judgment
 - Theoretical probability
 - A combination of experimental probability and subjective judgment
- _____ 4. A sports club is going to have a draw for a prize during its awards ceremony. Sasha did not enter the draw because she was not feeling lucky, and almost every club member had purchased a ticket.
Was her decision based on theoretical probability, experimental probability, or subjective judgment?
- Subjective judgment
 - Experimental probability
 - Theoretical probability
 - A combination of theoretical probability and subjective judgment
- _____ 5. In an anonymous survey, students were asked:
“Do you agree that everyone should become a vegetarian?”
In this survey, which of the following might be a problem?
- Cultural sensitivity
 - Ethics
 - Privacy
 - Use of Language
- a. i b. ii c. iii d. iv

- _____ 6. Marjorie wanted to collect information about the sports her classmates were interested in. She prepared a 10 min questionnaire which she gave to her classmates the day before the final math exam. In this survey, which of the following might be a problem with this question?
- i) Privacy
 - ii) Timing
 - iii) Cost
 - iv) Cultural sensitivity
- a. i b. ii c. iii d. iv
- _____ 7. Ms. Coplick interviewed her students and asked each one how much he or she was given each week as an allowance. In this survey, which of the following might be a problem?
- i) Privacy
 - ii) Timing
 - iii) Use of Language
 - iv) Cost
- a. i b. ii c. iii d. iv
- _____ 8. In late November Anita surveyed every student in her class to find out their favourite Christmas carols. Which of the following might be a problem?
- i) Timing
 - ii) Use of Language
 - iii) Cultural sensitivity
 - iv) Cost
- a. i b. ii c. iii d. iv
- _____ 9. Omar asked his classmates the following question.
“Don’t you think apartment buildings should allow residents to have cats?”
Which of the following might be a problem with his survey?
- i) Timing
 - ii) Bias
 - iii) Privacy
 - iv) Cost
- a. i b. ii c. iii d. iv
- _____ 10. Alec decided to survey all the library patrons in his city to see how often they downloaded e-books from the library’s Web site.
Which of the following might be a problem with his survey?
- i) Timing
 - ii) Bias
 - iii) Ethics
 - iv) Cost
- a. i b. ii c. iii d. iv
- _____ 11. A college wants to estimate the number of high school students who will enrol in September. Which data collection method would provide the most accurate information?
- i) Survey a sample of grade 12 students from one local high school
 - ii) Survey a sample of grade 12 students from all the local high schools
 - iii) Survey all grade 12 students from the local high schools
 - iv) Survey all grade 12 students from one local high school
- a. i b. ii c. iii d. iv

- _____ 12. A fashion designer offered to teach a class on clothing design for students in grades 11 and 12. Which data collection method would provide the most accurate information about how likely students would be to take the class?
- i) Survey a sample of grade 11 and 12 students
 - ii) Survey a sample of grade 11 and 12 girls
 - iii) Survey all grade 12 students
 - iv) Survey all grade 11 and 12 girls
- a. i b. ii c. iii d. iv
- _____ 13. To determine the favourite TV shows of grade 9 students at a school, which of the following data collection methods would provide the most accurate information?
- i) Survey a sample of students in one grade 9 class
 - ii) Survey all students in one grade 9 class
 - iii) Survey a sample of students from each grade 9 class
 - iv) Survey all students in each grade 9 class
- a. i b. ii c. iii d. iv
- _____ 14. A town council wants to know the public's opinion about increasing taxes to pay for more housing for the homeless. They hire people to conduct door-to-door interviews in randomly selected areas of town. Which sampling method did the town council use?
- a. Self-selected sampling
 - b. Simple random sampling
 - c. Systematic sampling
 - d. Cluster sampling
- _____ 15. A school's cafeteria manager wants to know whether changing the cafeteria menu will increase its the number of lunch specials it sells. On Wednesday, the manager surveys as many people in the cafeteria as he can to find out. Which sampling method did he use?
- a. Cluster sampling
 - b. Systematic sampling
 - c. Simple random sampling
 - d. Convenience sampling
- _____ 16. A local political party wants to know what people think about a new by-law banning certain types of dogs. It sends out a newsletter to everyone in the district. The newsletter contains a questionnaire and readers are asked to return their responses by mail or email. Which sampling method was used?
- a. Systematic Sampling
 - b. Simple random sampling
 - c. Self-selected sampling
 - d. Cluster sampling
- _____ 17. A company hires students to fill boxes with cartons of fruit juice. The quality control manager wants to ensure each box contains the same number of each type of juice. For each student, the manager randomly selects and checks a box that the student filled.
- a. Cluster sampling
 - b. Stratified random sampling
 - c. Convenience sampling
 - d. Systematic sampling

Short Answer

18. The owners of a chain of fast food restaurants want to know if customers are satisfied with the restaurant chain. They set up a Web site where customers can enter a code from their receipt and then rate the restaurant.
- Are the data collected from a sample or a population?

Name: _____

ID: A

19. A company produces boxes of breakfast cereal weighing 400 g. The quality control inspector wants to ensure that each box contains 395 g - 405 g of cereal. She selects a random sample of 10 boxes from each production line at noon each day. What is a potential problem with this sampling method?
20. A company that produces printer cartridges wants to know what fraction of the cartridges are faulty. The produce about 200 cartridges an hour and tests 1 randomly selected cartridge each hour. Will the selected sample represent the population?

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Answer Section

MULTIPLE CHOICE

1. ANS: D PTS: 1 DIF: Easy REF: 9.1 Probability in Society
LOC: 9.SP4 TOP: Statistics and Probability (Chance and Uncertainty)
KEY: Conceptual Understanding
2. ANS: A PTS: 1 DIF: Easy REF: 9.1 Probability in Society
LOC: 9.SP4 TOP: Statistics and Probability (Chance and Uncertainty)
KEY: Conceptual Understanding
3. ANS: B PTS: 1 DIF: Easy REF: 9.1 Probability in Society
LOC: 9.SP4 TOP: Statistics and Probability (Chance and Uncertainty)
KEY: Conceptual Understanding
4. ANS: D PTS: 1 DIF: Moderate REF: 9.1 Probability in Society
LOC: 9.SP4 TOP: Statistics and Probability (Chance and Uncertainty)
KEY: Conceptual Understanding
5. ANS: D PTS: 1 DIF: Easy
REF: 9.2 Potential Problems with Collecting Data LOC: 9.SP1
TOP: Statistics and Probability (Data Analysis) KEY: Conceptual Understanding
6. ANS: B PTS: 1 DIF: Easy
REF: 9.2 Potential Problems with Collecting Data LOC: 9.SP1
TOP: Statistics and Probability (Data Analysis) KEY: Conceptual Understanding
7. ANS: A PTS: 1 DIF: Easy
REF: 9.2 Potential Problems with Collecting Data LOC: 9.SP1
TOP: Statistics and Probability (Data Analysis) KEY: Conceptual Understanding
8. ANS: C PTS: 1 DIF: Easy
REF: 9.2 Potential Problems with Collecting Data LOC: 9.SP1
TOP: Statistics and Probability (Data Analysis) KEY: Conceptual Understanding
9. ANS: B PTS: 1 DIF: Easy
REF: 9.2 Potential Problems with Collecting Data LOC: 9.SP1
TOP: Statistics and Probability (Data Analysis) KEY: Conceptual Understanding
10. ANS: D PTS: 1 DIF: Easy
REF: 9.2 Potential Problems with Collecting Data LOC: 9.SP1
TOP: Statistics and Probability (Data Analysis) KEY: Conceptual Understanding
11. ANS: C PTS: 1 DIF: Easy
REF: 9.3 Using Samples and Populations to Collect Data LOC: 9.SP2
TOP: Statistics and Probability (Data Analysis) KEY: Conceptual Understanding
12. ANS: A PTS: 1 DIF: Easy
REF: 9.3 Using Samples and Populations to Collect Data LOC: 9.SP2
TOP: Statistics and Probability (Data Analysis) KEY: Conceptual Understanding
13. ANS: D PTS: 1 DIF: Easy
REF: 9.3 Using Samples and Populations to Collect Data LOC: 9.SP2
TOP: Statistics and Probability (Data Analysis) KEY: Conceptual Understanding
14. ANS: D PTS: 1 DIF: Easy REF: 9.4 Selecting a Sample
LOC: 9.SP2 TOP: Statistics and Probability (Data Analysis)
KEY: Conceptual Understanding

15. ANS: D PTS: 1 DIF: Easy REF: 9.4 Selecting a Sample
 LOC: 9.SP2 TOP: Statistics and Probability (Data Analysis)
 KEY: Conceptual Understanding
16. ANS: C PTS: 1 DIF: Easy REF: 9.4 Selecting a Sample
 LOC: 9.SP2 TOP: Statistics and Probability (Data Analysis)
 KEY: Conceptual Understanding
17. ANS: B PTS: 1 DIF: Easy REF: 9.4 Selecting a Sample
 LOC: 9.SP2 TOP: Statistics and Probability (Data Analysis)
 KEY: Conceptual Understanding

SHORT ANSWER

18. ANS:
 A sample
- PTS: 1 DIF: Easy REF: 9.3 Using Samples and Populations to Collect Data
 LOC: 9.SP2 TOP: Statistics and Probability (Data Analysis)
 KEY: Conceptual Understanding
19. ANS:
 The sample is not representative. Her testing does not ensure quality throughout the day.
- PTS: 1 DIF: Easy REF: 9.4 Selecting a Sample
 LOC: 9.SP2 TOP: Statistics and Probability (Data Analysis)
 KEY: Conceptual Understanding
20. ANS:
 Yes
- PTS: 1 DIF: Moderate REF: 9.4 Selecting a Sample
 LOC: 9.SP2 TOP: Statistics and Probability (Data Analysis)
 KEY: Conceptual Understanding