



FOURTH QUARTERLY ASSESSMENT

MATHEMATICS 7

Prepared by: Mr. Ravy G. Galopo

Name: _____ Score: _____/70

Grade and Section: _____ Date: _____

I. Identify whether they involve descriptive or inferential statistics.

- _____ 1. A teacher calculates the average test score for her class.
- _____ 2. A poll predicts the outcome of an election based on a sample of voters.
- _____ 3. A researcher creates a bar graph showing the distribution of eye colors in a population.
- _____ 4. A meteorologist uses historical weather data to forecast the probability of rain tomorrow.
- _____ 5. A scientist uses data from a small sample of animals to estimate the population of a species in a large forest.

II. Identify whether the following is a qualitative or quantitative variable.

- _____ 6. Color of cars in a parking lot.
- _____ 7. Number of students in a classroom.
- _____ 8. Temperature of a cup of coffee.
- _____ 9. Types of fruits sold at a market.
- _____ 10. Heights of trees in a forest.

III. Multiple Choice. Write the letter of the best answer for each question.

11. Which sampling method ensures that every member of the population has an equal chance of being selected?
 - a. Systematic sampling
 - b. Simple random sampling
 - c. Stratified sampling
 - d. Cluster sampling
12. In systematic sampling, individuals are chosen at:
 - a. Random intervals
 - b. Variable intervals
 - c. Regular intervals
 - d. Intervals based on subgroups
13. Cluster sampling involves:
 - a. Selecting individuals from each subgroup.
 - b. Selecting individuals at regular intervals.
 - c. Randomly selecting entire subgroups.
 - d. Giving every individual an equal chance.
14. Which method is easiest to conduct if a numbered list of the entire population is available?
 - a. Systematic sampling
 - b. Simple random sampling
 - c. Stratified sampling
 - d. Cluster sampling
15. If you want to ensure that all age groups are represented proportionally in your sample, which method would you use?
 - a. Systematic sampling
 - b. Simple random sampling
 - c. Stratified sampling
 - d. Cluster sampling

IV. Read the scenario and answer the question.

16-17. A national health organization wants to study the dietary habits of adults in a country. The country is vast and has diverse geographical regions (urban, rural, coastal). They decide to divide the country into these regions and then randomly select a certain number of households from each region to survey. Which sampling method are they using?

18-19. A software company wants to test a new user interface. They have a database of 5,000 customers. They assign each customer a number and then use a random number generator to select 500 customers to participate in the testing. Which sampling method are they using?

20-21. A university wants to assess student satisfaction with campus services. They have a list of all 10,000 students, ordered alphabetically. They decide to select every 20th student from the list to participate in a survey. Which sampling method are they using?

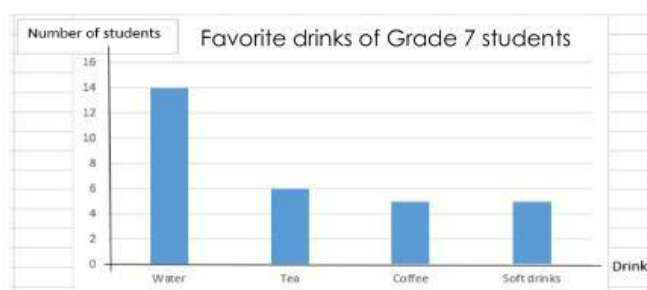
22-23. A market research firm wants to study consumer preferences for a new beverage in a large city. The city is divided into several districts, each with diverse socioeconomic backgrounds. The firm randomly selects a few districts and then surveys every household within those selected districts. Which sampling method are they using?

24-25. A school district wants to evaluate the effectiveness of a new teaching method. There are 20 elementary schools in the district. They randomly select 5 schools and then administer standardized tests to all students in those 5 schools. Which sampling method are they using?

V. Answer the following. Show your solution.

For numbers 26-35.

A survey was carried out in a Grade 7 class to find out the favorite drinks of the students. The results are illustrated on a bar chart shown below.



26-28. Construct a well-labelled pie chart to represent the information given on the bar chart. Hence, use your pie chart to answer the following questions:

29. What was the most favorite drink of the students?

30-32. Express the number of students who preferred water as a fraction of the total number of students in the class. Give your answer as a fraction reduced to its lowest term.

33-35. Express the number of students who preferred soft drinks as a percentage of the total number of pupils in the class.

For numbers 36-45.

The frequency table below shows the number of rainy days per month for the first six months of a given year

Months	Number of rainy days
January	15
February	12
March	10
April	12
May	16
June	7

36-38. Express the number of rainy days in February as a fraction of the total number of rainy days during the 1st 6 months of the year. Give your answer in its lowest terms

39-41. Express the number of rainy days in March and April as a percentage of the total number of rainy days during the 1st 6 months of the year.

42-45. Make a well-labelled line graph using the above frequency table.

VI. Find each probability. Write your answer in simplest form. Show your solution.

46-48. A bag holds 6 tiles: 2 lettered and 4 numbered. Without looking, you choose a tile. What is the probability of drawing a number?

49-51. The names Phil, Angelica, Yolanda, Mimi, and Ed are on slips of paper in a hat. A name is drawn without looking. What is the probability of **NOT** drawing Ed?

52-54. A standard deck of cards contains 13 of each suit: red hearts, red diamonds, black clubs, and black spades. What is the probability of drawing a red card without looking?

VII. Answer the following. Show your solution.

55-57. Given 7 flags of different colors, how many different signals can be generated if a signal requires the use of two flags, one below the other?

58-60. A person wants to buy one fountain pen, one ball pen and one pencil from a stationery shop. If there are 10 fountain pen varieties, 12 ball pen varieties and 5 pencil varieties, in how many ways can he select these articles?

V. Explain the following in 3-4 sentences.

61-63. A weather forecast states there's a 70% chance of rain. Explain what this statement means and what it doesn't mean in terms of predicting the actual weather.

64-66. Describe a scenario where understanding probability could prevent a costly mistake or lead to a better outcome. Explain how probability helps in this situation.

67-70. Imagine you are explaining the importance of probability to someone who believes it has no practical use. What real-world examples would you use to convince them?

God is good! 😊
*** END OF EXAM ***