

CHAPTER-1 | Patterns in Mathematics

QUIZ
PART-03

1. What is the branch of mathematics that studies patterns in whole numbers called?
- A. Algebra
B. Number Theory
C. Geometry
D. Arithmetic (B)

Explanation: The branch that focuses on the study of patterns in whole numbers is called Number Theory.

2. Which of the following is an example of an odd number sequence?
- A. 2, 4, 6, 8, 10
B. 1, 3, 5, 7, 9
C. 1, 2, 3, 4, 5
D. 1, 4, 9, 16 (B)

Explanation: The sequence 1, 3, 5, 7, 9 consists of odd numbers that increase by 2.

3. Which number sequence is formed by adding successive integers?
- A. Triangular numbers
B. Powers of 2
C. Squares
D. Fibonacci numbers (A)

Explanation: Triangular numbers are formed by adding successive integers. For example, $1 + 2 + 3 = 6$, and so on.

4. Which sequence is represented by the numbers: 1, 4, 9, 16, 25?
- A. Triangular numbers
B. Cubes
C. Squares
D. Powers of 3 (C)

Explanation: The sequence 1, 4, 9, 16, 25 represents square numbers, where each number is the square of an integer.

5. What is the pattern in the sequence: 1, 2, 4, 8, 16?
- A. Fibonacci sequence
B. Powers of 2
C. Powers of 3
D. Triangular numbers (B)

Explanation: This sequence represents powers of 2, where each number is double the previous one.

6. In the sequence 1, 8, 27, 64, 125, the numbers are known as:
- A. Cubes
B. Triangular numbers
C. Fibonacci numbers
D. Powers of 3 (A)

Explanation: The numbers 1, 8, 27, 64, 125 are cubes of integers ($1^3, 2^3, 3^3, 4^3, 5^3$).

7. Which of these sequences represents powers of 3?
- A. 1, 2, 3, 5, 8
B. 1, 3, 9, 27, 81
C. 1, 4, 9, 16
D. 1, 3, 6, 10, 15 (B)

Explanation: The sequence 1, 3, 9, 27, 81 is the sequence of powers of 3. Each number is 3 raised to a successive power.

8. The sequence 1, 2, 3, 5, 8, 13, 21 is an example of:
- A. Powers of 2
B. Fibonacci sequence
C. Even numbers
D. Odd numbers (B)

Explanation: This is the Fibonacci sequence, where each number is the sum of the two preceding ones.

9. The first three numbers of the sequence of even numbers are:
- A. 1, 2, 3
B. 2, 4, 6
C. 1, 3, 5
D. 0, 2, 4 (B)

Explanation: Even numbers start from 2, 4, 6, and continue in the same pattern of adding 2.

10. What is the rule for the sequence 1, 2, 4, 8, 16?
- A. Add 1 each time
B. Multiply by 2 each time
C. Add 2 each time
D. Square the number each time (B)

Explanation: The sequence follows the rule of multiplying by 2 each time, which represents powers of 2.