

CHAPTER-1 | Patterns in Mathematics

QUIZ
PART-08

1. What sequence do you get when you add the All 1's sequence up?
- A. Counting numbers
B. Square numbers
C. Triangular numbers
D. Odd numbers (C)

Explanation: The All 1's sequence added up results in triangular numbers. For example, 1, 3, 6, 10, 15, etc.

2. What sequence do you get when you add the All 1's sequence up and down?
- A. Square numbers
B. Triangular numbers
C. Even numbers
D. Cube numbers (A)

Explanation: When the All 1's sequence is added both up and down, you get square numbers.

3. The sum of the first 100 odd numbers is represented by:
- A. A square number
B. A triangular number
C. A Fibonacci number
D. A cube number (A)

Explanation: The sum of the first 100 odd numbers results in a square number, specifically 100^2 .

4. The sum of the sequence $1 + 2 + 3 + \dots + 99 + 100 + 99 + \dots + 3 + 2 + 1$ is:
- A. 10000
B. 5050
C. 2500
D. 100 (B)

Explanation: The sum of the sequence $1 + 2 + 3 + \dots + 100$ and then back down equals 5050, as the sequence forms a symmetric pattern.

5. The sum of the first 5 odd numbers is:
- A. 25
B. 36
C. 16
D. 12 (B)

Explanation: The sum of the first 5 odd numbers ($1 + 3 + 5 + 7 + 9$) equals 36.

6. Which number represents the sum of the first 10 odd numbers?
- A. 100
B. 120
C. 80
D. 110 (A)

Explanation: The sum of the first 10 odd numbers ($1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19$) equals 100.

7. When you add natural numbers up and down, the result is always:
- A. A square number
B. A triangular number
C. An even number
D. An odd number (A)

Explanation: Adding natural numbers up and down results in square numbers. For example, $1 + 2 + 3 + 4 + 5 = 25$.

8. What is the next number in the sequence of triangular numbers: 1, 3, 6, 10, 15?
- A. 21
B. 16
C. 25
D. 36 (A)

Explanation: The next number in the sequence of triangular numbers is 21. The sequence follows the pattern where each number is the sum of the previous integers.

9. What type of sequence is represented by the number 1, 4, 9, 16, 25?
- A. Powers of 2
B. Square numbers
C. Cube numbers
D. Triangular numbers (B)

Explanation: This is a sequence of square numbers, where each number is the square of an integer.

10. What does the pictorial representation of triangular numbers look like?
- A. A square formation
B. A circular formation
C. A triangular formation
D. A rectangular formation (C)

Explanation: Triangular numbers are represented visually by dots forming a triangle.