**Number Series**

### **1. Arithmetic Series**

An arithmetic series is a number sequence in which the difference between consecutive terms remains constant. Each term is obtained by adding or subtracting a fixed value, known as the common difference, to the previous term.

**For Example:**

Consider the series: 2, 5, 8, 11, 14, ... The common difference here is 3, and each term is obtained by adding 3 to the previous term.

### **2. Geometric Series**

A geometric series is a sequence in which each term is obtained by multiplying or dividing the previous term by a fixed value, known as the common ratio. In a geometric series, the ratio between consecutive terms remains constant.

**For Example:**

Consider the series: 2, 6, 18, 54, 162, ... The common ratio here is 3, and each term is obtained by multiplying the previous term by 3.

### **3. Fibonacci Series**

The Fibonacci series is a special sequence in which each term is the sum of the two preceding terms. It starts with 0 and 1, and subsequent terms are generated by adding the two previous terms.

**For Example:**

The Fibonacci series begins as follows: 0, 1, 1, 2, 3, 5, 8, 13, 21, ... The pattern continues infinitely.

### **4. Square Series**

A square series is a sequence in which each term is obtained by squaring the natural numbers. The terms of a square series follow the pattern of perfect squares.

**For Example:**

Consider the series: 1, 4, 9, 16, 25, ... Each term is obtained by squaring the corresponding natural number.

### **5. Prime Series**

A prime series is a sequence of prime numbers, which are numbers greater than 1 that are divisible only by 1 and themselves. The terms in a prime series consist solely of prime numbers.

**For Example:**

Consider the series: 2, 3, 5, 7, 11, 13, ... Each term in this series is a prime number.

### **6. Harmonic Series**

The harmonic series is a sequence of numbers that are the reciprocals of positive integers. Each term in the series is obtained by taking the reciprocal of the corresponding natural number.

**For Example:**

The harmonic series begins as follows: 1, 1/2, 1/3, 1/4, 1/5, ... The terms in this series approach zero as the natural numbers increase.

### **7. Quadratic Series**

A quadratic series is a sequence in which each term is obtained by substituting natural numbers into a quadratic equation. The terms in a quadratic series follow a quadratic pattern.

**For Example:**

Consider the series: 1, 4, 9, 16, 25, ... Each term is obtained by substituting the natural numbers into the equation y = x^2, where x represents the position in the series.

### **8. Cube Series**

A cube series is a sequence in which each term is obtained by cubing the natural numbers. The terms in a cube series follow the pattern of perfect cubes.

**For Example:**

Consider the series: 1, 8, 27, 64, 125, ... Each term is obtained by cubing the corresponding natural number.

### **9. Arithmetic-Geometric Series**

An arithmetic-geometric series is a combination of arithmetic and geometric progressions. The terms in this series alternate between arithmetic and geometric progressions.

**For Example:**

Consider the series: 1, 2, 4, 7, 11, ... The terms 1, 4, 11 form an arithmetic progression, while the terms 2, 7 form a geometric progression.

### **10. Recursive Series**

A recursive series is a sequence in which each term is defined based on one or more previous terms. The value of each term depends on a recursive formula or rule.

**For Example:**

The Fibonacci series mentioned earlier is a recursive series, where each term is the sum of the two preceding terms.

Q1 Look at this series: 7, 10, 8, 11, 9, 12, ... What number should come next?

A 7

B 10

C 12

D 13

Q2 Look at this series: 36, 34, 30, 28, 24, ... What number should come next?

A 20

B 22

C 23

D 26

Q3 Look at this series: 3, 4, 7, 8, 11, 12, ... What number should come next?

A 7

B 10

C 14

D 15

Q4 Look at this series: 14, 28, 20, 40, 32, 64, ... What number should come next?

A 52

B 56

C 96

D 128

Q5 Look at this series: 2, 6, 18, 54, ... What number should come next?

A 108

B 148

C 162

D 216

Q6 Look at this series: 8, 6, 9, 23, 87, ... What number should come next?

A 128

B 226

C 324

D 429

Q7 Given a Series below. Find what number would come in place of the question mark(?).

2, 5, 12.5, ?, 78.125, 195.3125

A 31.25

B 40.25

C 32.5

D 21

Q8 Given a Series below. Find what number would come in place of the question mark(?).

-10, -8, 6, 40, 102,

A 105

B 117

C 216

D 200

Q9 Given a Series below. Find what number would come in place of the question mark(?).

25, 49, 121, 169, ?

A 225

B 256

C 289

D 361

Q10 Find the number which will come in the place of the question mark in the given series

4, 18, ? , 100, 180, 294, 448.

A 62

B 86

C 38

D 48