■ Number Series Pattern Notes

This guide compiles all the pattern-recognition methods, tricks, and analysis discussed so far. It's designed to help you quickly detect the hidden logic in any number series question — ideal for SSC, Banking, and other government exams.

1■■ Basic Types of Series

• **Arithmetic Series** → Add/Subtract a constant each time. Example: 2, 4, 6, 8 → +2 • **Geometric Series** → Multiply/Divide by constant. Example: 3, 9, 27, 81 → ×3 • **Square/Cube Series** → Based on n^2 or n^3. Example: 1, 4, 9, 16, 25 → n^2 • **Prime Number Series** → Consecutive primes. Example: 2, 3, 5, 7, 11, …

2■■ Difference-Based Patterns

• Find 1st and 2nd differences: - Constant 1st diff → Arithmetic. - Constant 2nd diff → Quadratic (n^2). Example: 2, 5, 10, 17, 26 → +3, +5, +7, +9 → +11 next → 37.

3■■ Multiplicative & Additive Mix

• Pattern = Previous × n ± c Example: 2, 5, 11, 23, 47 → ×2 +1 pattern. • Common forms: - ×2 + 1 - ×2 – 1 - ×3 + 2, etc.

4■■ Alternate & Interlaced Patterns

• Two or more mini-series interwoven. Example: 2, 4, 8, 7, 14, 28 → alternate +/× pattern. Example: 5, 7, 14, 16, 32, 34 → (+2, ×2, +2, ×2, …)

5■■ Exponential & Power Patterns

• Powers of 2, 3, or related forms: 1, 3, 7, 15, 31, 63 → 2■ – 1 1, 2, 4, 8, 16 → 2■ 3, 9, 27, 81 → 3■

6■■ Factorial and n(n+1) Patterns

• Factorial: 1, 2, 6, 24, 120 → n! • n(n+1): 2, 6, 12, 20, 30, 42 → 1×2, 2×3, 3×4, etc.

7■■ Prime / Fibonacci / Derived Series

• Prime: 2, 3, 5, 7, 11, 13 • Fibonacci: 1, 1, 2, 3, 5, 8, 13 (each term = sum of previous two). • Derived (look-and-say): 1, 11, 21, 1211, 111221, …

8■■ Common Exam Tricks

• Always write 1st and 2nd differences quickly. • Check ×2 ± c and ×3 ± c patterns immediately. • Look for squares, cubes, and primes. • If alternating pattern suspected, separate odd/even positions. • If still unclear, check reverse or interlaced structure.

9■■ Mental Checklist (10-sec Formula)

1. Add/Subtract constant? 2. Multiply/Divide constant? 3. Alternate pattern? 4. 2nd difference constant? 5. Square/Cube/Prime pattern? 6. × and + combined pattern? 7. Positional pattern (odd/even)? 8. Hidden or reverse logic?

■ Self-Analysis Summary (Your Profile)

• Strong in direct arithmetic/geometric recognition. • Quick intuition for growth rate. • Needs minor improvement in checking difference-doubling & exponential +1/–1 patterns. • Train with hybrid (× + constant) and difference drills for 5 mins daily.