

### Pattern Puzzles – Pack 54

**Puzzle 1.** What comes next in the sequence?

12	11	2	12	15	17	6	20	18	23	10	28	?
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- A) 22      B) 21      C) 29      D) 24

**Puzzle 2.** What number replaces the question mark in the grid?

1	5	3
8	3	3
1	7	?

- A) 15      B) 16      C) 11      D) 9

**Puzzle 3.** What number replaces the question mark in the grid?

6	5	9
7	17	9
15	14	?

- A) 18      B) 28      C) 27      D) 32

**Puzzle 4.** What comes next in the sequence?

11	54	187	488	1059	2026	3539	5772	?
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- A) 8947      B) 8899      C) 5772      D) 8923

**Puzzle 5.** What comes next in the sequence?

3	4	4	14	25	46	88	162	?
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- A) 357      B) 296      C) 299      D) 302

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**Puzzle 6.** What comes next in the sequence?

9	46	169	456	1009	1954	3441	5644	?
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- A) 8785      B) 8761      C) 8737      D) 5644

**Puzzle 7.** What comes next in the sequence?

6	14	9	7	8	22	11	11	10	30	13	15	?
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- A) 18      B) 12      C) 13      D) 38

**Puzzle 8.** What number replaces the question mark in the grid?

3	1	21
9	1	26
9	5	?

- A) 51      B) 22      C) 39      D) 50

**Puzzle 9.** What number replaces the question mark in the grid?

3	2	5
5	26	19
20	8	?

- A) 21      B) 12      C) 22      D) 24

**Puzzle 10.** What comes next in the sequence?

4	5	5	15	26	47	89	163	?
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- A) 301      B) 299      C) 326      D) 300

## Answer Key

1. **B) 21**

Four interleaved arithmetic series (period 4):

6. **B) 8761**

4th differences are all 24 (quartic sequence).

2. **A) 15**

Column sums are triangular numbers: 10, 15, 21.

7. **B) 12**

Four interleaved arithmetic series (period 4):

3. **C) 27**

Column sums are triangular numbers: 28, 36, 45.

8. **D) 50**

Row sums are perfect squares: 25, 36, 64.

4. **D) 8923**

4th differences are all 24 (quartic sequence).

9. **A) 21**

Column sums are triangular numbers: 28, 36, 45.

5. **C) 299**

Rule:  $a(n) = a(n-1) + a(n-2) + a(n-3) + 3$ .

10. **D) 300**

Rule:  $a(n) = a(n-1) + a(n-2) + a(n-3) + 1$ .