

Pattern Puzzles – Pack 43

Puzzle 1. What number replaces the question mark in the grid?

1	1	7
9	5	22
6	9	?

- A) 34
 B) 35
 C) 21
 D) 7

Puzzle 2. What comes next in the sequence?

10	49	174	463	1018	1965	3454	5659	?
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- A) 8754
 B) 5659
 C) 8778
 D) 8802

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

2	1	15
6	17	18
20	18	?

- A) 13
 B) 3
 C) 12
 D) 7

Puzzle 4. What comes next in the sequence?

2	6	3	14	26	46	89	164	?
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- A) 299
 B) 302
 C) 288
 D) 305

Puzzle 5. What number replaces the question mark in the grid?

3	5	1
8	9	6
4	7	?

- A) 14
 B) 22
 C) 17
 D) 21

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Puzzle 6. What comes next in the sequence?

10	12	4	10	13	19	9	14	16	26	14	18	?
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- A) 33
 B) 23
 C) 19
 D) 20

Puzzle 7. What comes next in the sequence?

10	38	130	352	794	1570	2818	4700	?
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- A) 7402
 B) 7426
 C) 4700
 D) 7378

Puzzle 8. What comes next in the sequence?

4	2	4	11	18	34	64	117	?
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- A) 225
 B) 215
 C) 217
 D) 216

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

3	2	6
4	12	4
3	1	?

- A) 6
 B) 11
 C) 12
 D) 5

Puzzle 10. What number replaces the question mark in the grid?

4	1	3
10	3	14
7	24	?

- A) 11
 B) 20
 C) 15
 D) 19

Answer Key

1. **A) 34**
Row sums are perfect squares: 9, 36, 49.
2. **C) 8778**
4th differences are all 24 (quartic sequence).
3. **C) 12**
Column sums are triangular numbers: 28, 36, 45.
4. **B) 302**
Rule: $a(n) = a(n-1) + a(n-2) + a(n-3) + 3$.
5. **D) 21**
Column sums are triangular numbers: 15, 21, 28.
6. **C) 19**
Four interleaved arithmetic series (period 4):
7. **A) 7402**
4th differences are all 24 (quartic sequence).
8. **D) 216**
Rule: $a(n) = a(n-1) + a(n-2) + a(n-3) + 1$.
9. **B) 11**
Column sums are triangular numbers: 10, 15, 21.
10. **D) 19**
Column sums are triangular numbers: 21, 28, 36.