

## Pattern Puzzles – Pack 17

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

9	48	167	438	957	1844	3243	5322	?
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A) 8273	B) 8249	C) 5322	D) 8297
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**Puzzle 2.** What comes next in the sequence?

5	6	2	16	27	48	94	172	?
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A) 376	B) 317	C) 320	D) 314
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**Puzzle 3.** What number replaces the question mark in the grid?

3	3	19
9	9	18
2	9	?

A) 38	B) 25	C) 39	D) 27
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**Puzzle 4.** What comes next in the sequence?

2	6	5	14	26	46	87	160	?
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A) 295	B) 294	C) 293	D) 298
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**Puzzle 5.** What number replaces the question mark in the grid?

5	6	13
1	3	6
22	27	?

A) 23	B) 26	C) 17	D) 27
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**Puzzle 6.** What comes next in the sequence?

9	7	3	8	12	14	7	10	15	21	11	12	?
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A) 18	B) 28	C) 19	D) 22
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**Puzzle 7.** What comes next in the sequence?

13	3	10	3	18	7	13	6	23	11	16	9	?
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A) 15	B) 29	C) 28	D) 27
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**Puzzle 8.** What comes next in the sequence?

9	37	131	357	805	1589	2847	4741	?
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A) 4741	B) 7457	C) 7433	D) 7481
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**Puzzle 9.** What comes next in the sequence?

7	8	2	4	14	13	6	6	21	18	10	8	?
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A) 28	B) 23	C) 26	D) 29
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**Puzzle 10.** What number replaces the question mark in the grid?

5	3	9
15	2	29
8	31	?

A) 5	B) 7	C) 8	D) 4
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## Answer Key

1. **A) 8273**

4th differences are all 24 (quartic sequence).

6. **A) 18**

Four interleaved arithmetic series (period 4):

2. **B) 317**

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

7. **C) 28**

Four interleaved arithmetic series (period 4):

3. **A) 38**

Row sums are perfect squares: 25, 36, 49.

8. **B) 7457**

4th differences are all 24 (quartic sequence).

4. **B) 294**

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

9. **A) 28**

Four interleaved arithmetic series (period 4):

5. **B) 26**

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

10. **B) 7**

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