

## Pattern Puzzles – Pack 32

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

7	30	115	328	759	1522	2755	4620	?
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- A) 7327      B) 7279      C) 4620      D) 7303

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

6	6	13
4	9	23
16	8	?

- A) 12      B) 29      C) 41      D) 40

**Puzzle 3.** What comes next in the sequence?

9	42	143	378	837	1634	2907	4818	?
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- A) 7577      B) 7529      C) 4818      D) 7553

**Puzzle 4.** What number replaces the question mark in the grid?

1	2	6
2	2	32
1	16	?

- A) 20      B) 19      C) 48      D) 47

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

9	43	145	381	841	1639	2913	4825	?
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- A) 7537      B) 4825      C) 7585      D) 7561

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

4	5	4	14	24	43	82	150	?
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- A) 295      B) 275      C) 276      D) 277

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

4	4	2	12	20	36	70	128	?
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- A) 224      B) 236      C) 234      D) 238

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

2	4	1
3	2	3
5	9	?

- A) 17      B) 11      C) 22      D) 18

**Puzzle 9.** What comes next in the sequence?

10	52	184	484	1054	2020	3532	5764	?
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- A) 5764      B) 8890      C) 8914      D) 8938

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

2	4	10
6	1	29
2	1	?

- A) 33      B) 46      C) 47      D) 26

## Answer Key

1. **D) 7303**  
4th differences are all 24 (quartic sequence).
2. **D) 40**  
Row sums are perfect squares: 25, 36, 64.
3. **D) 7553**  
4th differences are all 24 (quartic sequence).
4. **D) 47**  
Row sums are perfect squares: 9, 36, 64.
5. **D) 7561**  
4th differences are all 24 (quartic sequence).
6. **C) 276**  
Rule:  $a(n) = a(n-1)+a(n-2)+a(n-3)+1$ .
7. **B) 236**  
Rule:  $a(n) = a(n-1)+a(n-2)+a(n-3)+2$ .
8. **A) 17**  
Column sums are triangular numbers: 10, 15, 21.
9. **C) 8914**  
4th differences are all 24 (quartic sequence).
10. **B) 46**  
Row sums are perfect squares: 16, 36, 49.