

Pattern Puzzles – Pack 10

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

1	1	7
5	5	15
3	4	?

- A) 29
 B) 18
 C) 13
 D) 30

Puzzle 2. What comes next in the sequence?

11	53	183	479	1043	2001	3503	5723	?
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- A) 8835
 B) 8859
 C) 8883
 D) 5723

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

1	4	11
6	6	13
10	8	?

- A) 7
 B) 47
 C) 37
 D) 46

Puzzle 4. What comes next in the sequence?

6	28	112	324	754	1516	2748	4612	?
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- A) 7270
 B) 7318
 C) 7294
 D) 4612

Puzzle 5. What comes next in the sequence?

13	13	10	13	19	15	15	20	25	17	20	27	?
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- A) 31
 B) 32
 C) 19
 D) 27

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Puzzle 6. What comes next in the sequence?

6	4	5	16	26	48	91	166	?
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- A) 264 B) 305 C) 306 D) 307

Puzzle 7. What comes next in the sequence?

2	4	2	11	20	36	70	129	?
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- A) 244 B) 241 C) 235 D) 238

Puzzle 8. What comes next in the sequence?

7	39	145	397	891	1747	3109	5145	?
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- A) 5145 B) 8047 C) 8071 D) 8023

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

5	5	1
9	4	6
1	12	?

- A) 18 B) 14 C) 21 D) 22

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

2	3	11
5	7	37
3	8	?

- A) 38 B) 54 C) 20 D) 53

Answer Key

1. **A) 29**

Row sums are perfect squares: 9, 25, 36.

6. **C) 306**

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

2. **B) 8859**

4th differences are all 24 (quartic sequence).

7. **D) 238**

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

3. **D) 46**

Row sums are perfect squares: 16, 25, 64.

8. **B) 8047**

4th differences are all 24 (quartic sequence).

4. **C) 7294**

4th differences are all 24 (quartic sequence).

9. **C) 21**

Column sums are triangular numbers: 15, 21, 28.

5. **A) 31**

Four interleaved arithmetic series (period 4):

10. **D) 53**

Row sums are perfect squares: 16, 49, 64.