

### Pattern Puzzles – Pack 9

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

3	6	3	13	23	40	77	141	?
---	---	---	----	----	----	----	-----	---

- A) 230    
  B) 259    
  C) 260    
  D) 258

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

2	3	11
2	4	19
10	12	?

- A) 28    
  B) 3    
  C) 27    
  D) 18

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

11	9	8	15	16	13	16	17	21	17	24	19	?
----	---	---	----	----	----	----	----	----	----	----	----	---

- A) 26    
  B) 27    
  C) 21    
  D) 25

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

6	42	164	450	1002	1946	3432	5634	?
---	----	-----	-----	------	------	------	------	---

- A) 8750    
  B) 5634    
  C) 8726    
  D) 8774

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

2	5	2	12	22	39	76	140	?
---	---	---	----	----	----	----	-----	---

- A) 258    
  B) 256    
  C) 255    
  D) 261

### Pattern Puzzles – Pack 9

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

7	41	151	409	911	1777	3151	5201	?
---	----	-----	-----	-----	------	------	------	---

- A) 5201      B) 8119      C) 8143      D) 8095

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

6	48	180	480	1050	2016	3528	5760	?
---	----	-----	-----	------	------	------	------	---

- A) 8886      B) 8934      C) 8910      D) 5760

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

2	2	7
6	1	16
7	18	?

- A) 6      B) 5      C) 1      D) 2

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

8	39	136	365	816	1603	2864	4761	?
---	----	-----	-----	-----	------	------	------	---

- A) 7504      B) 4761      C) 7456      D) 7480

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

14	9	9	6	16	11	14	11	18	13	19	16	?
----	---	---	---	----	----	----	----	----	----	----	----	---

- A) 20      B) 15      C) 21      D) 22

## Answer Key

1. **B) 259**

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

6. **B) 8119**

4th differences are all 24 (quartic sequence).

2. **C) 27**

Row sums are perfect squares: 16, 25, 49.

7. **C) 8910**

4th differences are all 24 (quartic sequence).

3. **A) 26**

Four interleaved arithmetic series (period 4):

8. **B) 5**

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

4. **A) 8750**

4th differences are all 24 (quartic sequence).

9. **D) 7480**

4th differences are all 24 (quartic sequence).

5. **A) 258**

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

10. **A) 20**

Four interleaved arithmetic series (period 4):