

### Pattern Puzzles – Pack 8

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

4	4	5
1	1	19
6	10	?

- A) 17     
  B) 26     
  C) 5     
  D) 18

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

5	3	13
4	5	25
8	4	?

- A) 56     
  B) 43     
  C) 42     
  D) 22

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

1	1	3
1	2	5
1	2	?

- A) 10     
  B) 9     
  C) 13     
  D) 5

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

1	1	6	16	38	79	153	281	?
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- A) 651     
  B) 501     
  C) 417     
  D) 498

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

3	5	12	31	81	212	555	?
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- A) 3803     
  B) 898     
  C) 1665     
  D) 3804

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**Puzzle 6.** What number replaces the question mark in the grid?

4	4	5
2	4	15
3	10	?

- A) 20     
  B) 8     
  C) 29     
  D) 21

**Puzzle 7.** What number replaces the question mark in the grid?

1	3	9
6	7	8
4	9	?

- A) 8     
  B) 29     
  C) 21     
  D) 20

**Puzzle 8.** What comes next in the sequence?

1	6	17	45	118	309	809	?
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- A) 5544     
  B) 1309     
  C) 2427     
  D) 5545

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

1	1	19
4	5	25
3	4	?

- A) 48     
  B) 27     
  C) 61     
  D) 47

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

4	4	13
11	3	20
9	15	?

- A) 44     
  B) 10     
  C) 31     
  D) 30

## Answer Key

**1. D) 18**

Row sums are Fibonacci numbers:  $F(7)=13$ ,  $F(8)=21$ ,  $F(9)=34$ .

**6. D) 21**

Row sums are Fibonacci numbers:  $F(7)=13$ ,  $F(8)=21$ ,  $F(9)=34$ .

**2. B) 43**

Row sums are Fibonacci numbers:  $F(8)=21$ ,  $F(9)=34$ ,  $F(10)=55$ .

**7. C) 21**

Row sums are Fibonacci numbers:  $F(7)=13$ ,  $F(8)=21$ ,  $F(9)=34$ .

**3. A) 10**

Row sums are Fibonacci numbers:  $F(5)=5$ ,  $F(6)=8$ ,  $F(7)=13$ .

**8. D) 5545**

Rule:  $a(n) = 3 \times a(n-1) - a(n-2)$  (Lucas-type sequence).

**4. D) 498**

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

**9. A) 48**

Row sums are Fibonacci numbers:  $F(8)=21$ ,  $F(9)=34$ ,  $F(10)=55$ .

**5. D) 3804**

Rule:  $a(n) = 3 \times a(n-1) - a(n-2)$  (Lucas-type sequence).

**10. C) 31**

Row sums are Fibonacci numbers:  $F(8)=21$ ,  $F(9)=34$ ,  $F(10)=55$ .