

### Pattern Puzzles – Pack 9

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

2	2	5	6	7	18	12	54	19	?
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- A) 31      B) 162      C) 163      D) 190

**Puzzle 2.** What comes next in the sequence?

4	2	5	4	9	8	14	16	23	?
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- A) 37      B) 27      C) 32      D) 33

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

3	4	3	8	6	16	9	32	15	?
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- A) 68      B) 64      C) 65      D) 24

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

3	4	2	12	5	36	7	108	12	?
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- A) 19      B) 325      C) 333      D) 324

**Puzzle 5.** What number replaces the question mark in the grid?

1	2	5
3	3	7
6	7	?

- A) 0      B) 8      C) 13      D) 7

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

4	4	8	20	52	136	356	?
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- A) 576      B) 2439      C) 1068      D) 2440

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

3	2	3	6	6	18	9	54	15	?
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- A) 24      B) 162      C) 151      D) 163

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

4	3	6
6	2	13
5	2	?

- A) 26      B) 35      C) 14      D) 27

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

3	5	13
10	3	21
9	8	?

- A) 17      B) 37      C) 38      D) 51

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

4	6	14	36	94	246	644	?
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- A) 4413      B) 1042      C) 1932      D) 4414

## Answer Key

1. **B) 162**

Odd positions: Fibonacci-like sequence starting 2, 5.

6. **D) 2440**

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

2. **C) 32**

Odd positions: Fibonacci-like sequence starting 4, 5.

7. **B) 162**

Odd positions: Fibonacci-like sequence starting 3, 3.

3. **B) 64**

Odd positions: Fibonacci-like sequence starting 3, 3.

8. **D) 27**

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

4. **D) 324**

Odd positions: Fibonacci-like sequence starting 3, 2.

9. **C) 38**

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

5. **B) 8**

Row sums are Fibonacci numbers:  $F(6)=8$ ,  $F(7)=13$ ,  $F(8)=21$ .

10. **D) 4414**

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