

Pattern Puzzles – Pack 4

Puzzle 1. What comes next in the sequence?

3	14	39	84	155	258	399	?
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|--------|--------|--------|--------|
| A) 584 | B) 540 | C) 578 | D) 590 |
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Puzzle 2. What comes next in the sequence?

1	5	2	8	15	25	48	88	?
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| A) 136 | B) 161 | C) 113 | D) 139 |
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Puzzle 3. What comes next in the sequence?

15	30	27	54	51	102	99	198	?
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| A) 396 | B) 198 | C) 397 | D) 195 |
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Puzzle 4. What comes next in the sequence?

6	21	52	105	186	301	456	?
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| A) 657 | B) 663 | C) 611 | D) 651 |
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Puzzle 5. What comes next in the sequence?

7	17	39	97	263	753	?
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| A) 2215 | B) 2219 | C) 757 | D) 2211 |
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Puzzle 6. What comes next in the sequence?

8	24	15	45	36	108	99	297	?
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| A) 297 | B) 288 | C) 891 | D) 892 |
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Puzzle 7. What comes next in the sequence?

12	29	62	117	200	317	474	?
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| A) 631 | B) 683 | C) 671 | D) 677 |
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Puzzle 8. What comes next in the sequence?

14	17	26	53	134	377	1106	?
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| A) 1835 | B) 3293 | C) 3296 | D) 2564 |
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Puzzle 9. What comes next in the sequence?

11	27	61	119	207	331	497	?
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| A) 717 | B) 711 | C) 705 | D) 663 |
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Puzzle 10. What comes next in the sequence?

3	11	27	59	123	251	?
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| A) 502 | B) 251 | C) 507 | D) 506 |
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Answer Key

1. **A) 584**

1st diffs: 11, 25, 45, 71, 103, 141.

2. **B) 161**

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

3. **A) 396**

Alternating: $\times 2$ (odd steps), -3 (even steps).

4. **A) 657**

1st diffs: 15, 31, 53, 81, 115, 155.

5. **A) 2215**

Formula: $3^n + 4n$. $n=7$: $2187 + 28 = 2215$.

6. **C) 891**

Alternating: $\times 3$ (odd steps), -9 (even steps).

7. **D) 677**

1st diffs: 17, 33, 55, 83, 117, 157.

8. **B) 3293**

Differences form geometric sequence ($\times 3$): 3, 9, 27, 81, 243, 729, 2187.

9. **B) 711**

1st diffs: 16, 34, 58, 88, 124, 166.

10. **C) 507**

Rule: $a(n) = 2 \times a(n-1) + 5$.