

Pattern Puzzles – Pack 34

Puzzle 1. What comes next in the sequence?

2 9 28 65 126 217 344 ?

- A) 507 B) 513 C) 471 D) 519

Puzzle 2. What comes next in the sequence?

1 3 2 6 11 19 36 66 ?

- A) 85 B) 138 C) 102 D) 121

Puzzle 3. What comes next in the sequence?

10 28 64 124 214 340 508 ?

- A) 676 B) 718 C) 730 D) 724

Puzzle 4. What comes next in the sequence?

12 28 62 120 208 332 498 ?

- A) 706 B) 712 C) 664 D) 718

Puzzle 5. What comes next in the sequence?

6 14 30 62 126 254 ?

- A) 508 B) 510 C) 254 D) 509

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Puzzle 6. What comes next in the sequence?

6	16	40	84	154	256	396	?
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| A) 574 | B) 586 | C) 536 | D) 580 |
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Puzzle 7. What comes next in the sequence?

10	12	18	36	90	252	738	?
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| A) 2196 | B) 1224 | C) 1710 | D) 2198 |
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Puzzle 8. What comes next in the sequence?

4	9	7	9	11	12	14	13	?
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| A) 15 | B) 19 | C) 17 | D) 18 |
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Puzzle 9. What comes next in the sequence?

13	14	17	26	53	134	377	?
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| A) 620 | B) 1107 | C) 863 | D) 1106 |
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Puzzle 10. What comes next in the sequence?

20	40	28	56	44	88	76	152	?
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| A) 304 | B) 152 | C) 305 | D) 140 |
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Answer Key

1. **B) 513**

1st diffs: 7, 19, 37, 61, 91, 127.

2. **D) 121**

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

3. **D) 724**

1st diffs: 18, 36, 60, 90, 126, 168.

4. **B) 712**

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

5. **B) 510**

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

6. **D) 580**

1st diffs: 10, 24, 44, 70, 102, 140.

7. **A) 2196**

Differences form geometric sequence ($\times 3$): 2, 6, 18, 54, 162, 486, 1458.

8. **C) 17**

Three interleaved arithmetic series (period 3).

9. **D) 1106**

Differences form geometric sequence ($\times 3$): 1, 3, 9, 27, 81, 243, 729.

10. **A) 304**

Alternating: $\times 2$ (odd steps), -12 (even steps).