

## Pattern Puzzles – Pack 2

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

5	16	50	153	463	1394	4188	?
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|----------|----------|----------|---------|
| A) 12564 | B) 12570 | C) 12571 | D) 4195 |
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**Puzzle 2.** What comes next in the sequence?

6	40	150	408	910	1776	3150	?
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|---------|---------|---------|---------|
| A) 5176 | B) 5200 | C) 5224 | D) 4524 |
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**Puzzle 3.** What comes next in the sequence?

2	12	70	236	594	1252	2342	?
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|---------|---------|---------|---------|
| A) 4044 | B) 3996 | C) 3432 | D) 4020 |
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**Puzzle 4.** What comes next in the sequence?

5	10	17	28	41	58	77	?
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|-------|-------|--------|--------|
| A) 96 | B) 81 | C) 100 | D) 101 |
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**Puzzle 5.** What comes next in the sequence?

17	28	41	58	77	100	129	?
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|--------|--------|--------|--------|
| A) 158 | B) 160 | C) 161 | D) 131 |
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**Puzzle 6.** What comes next in the sequence?

2	7	23	72	220	665	2001	?
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A) 6009	B) 6010	C) 6003	D) 2008
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**Puzzle 7.** What comes next in the sequence?

6	24	94	276	654	1336	2454	?
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A) 4140	B) 3572	C) 4188	D) 4164
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**Puzzle 8.** What comes next in the sequence?

7	25	95	277	655	1337	2455	?
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A) 4141	B) 3573	C) 4165	D) 4189
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**Puzzle 9.** What number replaces the question mark in the grid?

5	7	13
4	6	20
2	6	?

A) 22	B) 26	C) 32	D) 27
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**Puzzle 10.** What comes next in the sequence?

3	10	32	99	301	908	2730	?
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A) 8190	B) 2737	C) 8197	D) 8196
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## Answer Key

1. **C) 12571**

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

6. **B) 6010**

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

2. **B) 5200**

4th diffs: 24 (constant – quartic sequence).

7. **D) 4164**

4th diffs: 24 (constant – quartic sequence).

3. **D) 4020**

4th diffs: 24 (constant – quartic sequence).

8. **C) 4165**

4th diffs: 24 (constant – quartic sequence).

4. **C) 100**

Each term = sum of first  $n$  primes.

9. **D) 27**

Row sums form arithmetic sequence: 25, 30, 35.

5. **B) 160**

Each term = sum of first  $n$  primes.

10. **C) 8197**

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