

## Pattern Puzzles – Pack 1

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

5	6	9	18	45	126	369	?
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A) 612	B) 855	C) 1098	D) 1099
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**Puzzle 2.** What comes next in the sequence?

12	30	66	126	216	342	510	?
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A) 678	B) 720	C) 732	D) 726
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**Puzzle 3.** What comes next in the sequence?

3	3	1	7	11	19	37	67	?
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A) 86	B) 104	C) 123	D) 129
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**Puzzle 4.** What comes next in the sequence?

4	5	5	14	24	43	81	148	?
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A) 191	B) 229	C) 303	D) 272
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**Puzzle 5.** What comes next in the sequence?

12	27	58	111	192	307	462	?
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A) 657	B) 663	C) 617	D) 669
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Puzzle 6. What comes next in the sequence?

10	26	58	112	194	310	466	?
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|--------|--------|--------|--------|
| A) 622 | B) 674 | C) 662 | D) 668 |
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Puzzle 7. What comes next in the sequence?

9	21	45	105	273	765	?
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|---------|---------|--------|---------|
| A) 2235 | B) 2223 | C) 771 | D) 2229 |
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Puzzle 8. What comes next in the sequence?

6	9	18	45	126	369	1098	?
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|---------|---------|---------|---------|
| A) 2556 | B) 3288 | C) 1827 | D) 3285 |
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Puzzle 9. What comes next in the sequence?

19	38	31	62	55	110	103	206	?
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|--------|--------|--------|--------|
| A) 206 | B) 199 | C) 413 | D) 412 |
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Puzzle 10. What comes next in the sequence?

17	34	22	44	32	64	52	104	?
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|--------|--------|-------|--------|
| A) 104 | B) 208 | C) 92 | D) 209 |
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## Answer Key

**1. C) 1098**

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

**6. D) 668**

1st diffs: 16, 32, 54, 82, 116, 156.

**2. D) 726**

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

**7. D) 2229**

Formula:  $3^n + 6n$ .  $n=7$ :  $2187 + 42 = 2229$ .

**3. C) 123**

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

**8. D) 3285**

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

**4. D) 272**

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

**9. D) 412**

Alternating:  $\times 2$  (odd steps),  $-7$  (even steps).

**5. B) 663**

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

**10. B) 208**

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