

### Pattern Puzzles – Pack 31

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

6	2	3	12	18	34	65	118	?
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|--------|--------|--------|--------|
| A) 219 | B) 211 | C) 218 | D) 217 |
|--------|--------|--------|--------|

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

3	3	2	11	19	35	68	125	?
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|--------|--------|--------|--------|
| A) 231 | B) 234 | C) 228 | D) 189 |
|--------|--------|--------|--------|

**Puzzle 3.** What number replaces the question mark in the grid?

3	1	3
1	11	16
6	3	?

- |      |      |      |      |
|------|------|------|------|
| A) 2 | B) 6 | C) 0 | D) 3 |
|------|------|------|------|

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

6	2	5	16	26	50	95	174	?
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|--------|--------|--------|--------|
| A) 319 | B) 322 | C) 338 | D) 325 |
|--------|--------|--------|--------|

**Puzzle 5.** What comes next in the sequence?

4	7	3	7	7	10	7	14	10	13	11	21	?
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|-------|-------|-------|-------|
| A) 16 | B) 13 | C) 12 | D) 14 |
|-------|-------|-------|-------|

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

5	5	4	16	27	49	94	172	?
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- A) 319    
  B) 315    
  C) 317    
  D) 379

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

12	53	182	477	1040	1997	3498	5717	?
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- A) 5717    
  B) 8876    
  C) 8852    
  D) 8828

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

3	1	12
9	9	18
6	7	?

- A) 51    
  B) 23    
  C) 31    
  D) 52

**Puzzle 9.** What comes next in the sequence?

3	8	12	2	9	15	17	8	15	22	22	14	?
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- A) 22    
  B) 21    
  C) 29    
  D) 23

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

10	14	3	10	17	20	7	15	24	26	11	20	?
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- A) 30    
  B) 28    
  C) 31    
  D) 32

## Answer Key

1. **C) 218**

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

6. **C) 317**

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

2. **A) 231**

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

7. **C) 8852**

4th differences are all 24 (quartic sequence).

3. **A) 2**

Column sums are triangular numbers: 10, 15, 21.

8. **A) 51**

Row sums are perfect squares: 16, 36, 64.

4. **B) 322**

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

9. **B) 21**

Four interleaved arithmetic series (period 4):

5. **B) 13**

Four interleaved arithmetic series (period 4):

10. **C) 31**

Four interleaved arithmetic series (period 4):