

### Pattern Puzzles – Pack 5

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

3	6	5	17	31	56	107	197	?
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- A) 404    
  B) 366    
  C) 363    
  D) 360

**Puzzle 2.** What number replaces the question mark in the grid?

1	1	3
12	18	20
2	2	?

- A) 0    
  B) 4    
  C) 6    
  D) 5

**Puzzle 3.** What comes next in the sequence?

3	4	6	14	25	46	86	158	?
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- A) 292    
  B) 290    
  C) 291    
  D) 250

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

14	3	7	7	19	5	11	9	24	7	15	11	?
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- A) 9    
  B) 30    
  C) 29    
  D) 26

**Puzzle 5.** What number replaces the question mark in the grid?

5	7	5
1	9	6
9	5	?

- A) 18    
  B) 10    
  C) 16    
  D) 17

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

9	56	195	504	1085	2064	3591	5840	?
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- |         |         |         |         |
|---------|---------|---------|---------|
| A) 9009 | B) 9033 | C) 5840 | D) 8985 |
|---------|---------|---------|---------|

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

7	4	4	9	14	11	10	13	21	18	16	17	?
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- |       |       |       |       |
|-------|-------|-------|-------|
| A) 29 | B) 34 | C) 25 | D) 28 |
|-------|-------|-------|-------|

**Puzzle 8.** What comes next in the sequence?

4	6	4	17	30	54	104	191	?
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- |        |        |        |        |
|--------|--------|--------|--------|
| A) 355 | B) 410 | C) 352 | D) 349 |
|--------|--------|--------|--------|

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

9	6	11	5	11	11	16	7	13	16	21	9	?
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- |       |       |       |       |
|-------|-------|-------|-------|
| A) 21 | B) 18 | C) 15 | D) 16 |
|-------|-------|-------|-------|

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

6	34	128	354	802	1586	2844	4738	?
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- |         |         |         |         |
|---------|---------|---------|---------|
| A) 7454 | B) 7430 | C) 7478 | D) 4738 |
|---------|---------|---------|---------|

## Answer Key

1. **C) 363**

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

6. **A) 9009**

4th differences are all 24 (quartic sequence).

2. **D) 5**

Column sums are triangular numbers: 15, 21, 28.

7. **D) 28**

Four interleaved arithmetic series (period 4):

3. **C) 291**

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

8. **C) 352**

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

4. **C) 29**

Four interleaved arithmetic series (period 4):

9. **C) 15**

Four interleaved arithmetic series (period 4):

5. **D) 17**

Column sums are triangular numbers: 15, 21, 28.

10. **A) 7454**

4th differences are all 24 (quartic sequence).