

## Pattern Puzzles – Pack 11

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

7   17   37   77   157   317   ?

- A) 637   B) 636   C) 317   D) 634

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

8   17   40   83   152   253   392   ?

- A) 575   B) 581   C) 531   D) 569

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

1   3   1   5   9   15   29   53   ?

- A) 68   B) 97   C) 79   D) 82

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

5   13   29   61   125   253   ?

- A) 506   B) 508   C) 253   D) 509

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

3   4   1   8   13   22   43   78   ?

- A) 121   B) 100   C) 136   D) 143

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

4   14   34   74   154   314   ?

- A) 634   B) 628   C) 314   D) 633

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

5   6   10   8   9   15   11   12   ?

- A) 20   B) 14   C) 21   D) 15

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

6   16   36   76   156   316   ?

- A) 635   B) 632   C) 636   D) 316

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

5   16   38   82   170   346   ?

- A) 697   B) 346   C) 698   D) 692

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

3   12   3   5   15   8   7   18   ?

- A) 13   B) 21   C) 9   D) 14

## Answer Key

1. **A) 637**

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

6. **A) 634**

Rule:  $a(n) = 2 \times a(n-1) + 6$ .

2. **A) 575**

1st diffs: 9, 23, 43, 69, 101, 139.

7. **A) 20**

Three interleaved arithmetic series (period 3).

3. **B) 97**

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

8. **C) 636**

Rule:  $a(n) = 2 \times a(n-1) + 4$ .

4. **D) 509**

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

9. **C) 698**

Rule:  $a(n) = 2 \times a(n-1) + 6$ .

5. **D) 143**

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

10. **A) 13**

Three interleaved arithmetic series (period 3).