

# Advanced Number Series

Circle the letter of the best answer.

Name \_\_\_\_\_

Date \_\_\_\_\_

1. What comes next: 2, 3, 5, 9, 17, ?

A) 41

B) 35

C) 33

D) 34

Working

2. Find the next number: 0, 3, 8, 15, 24, ?

A) 35

B) 36

C) 33

D) 32

Working

3. What comes next: 2, 3, 4, 9, 16, 29, ?

A) 45

B) 54

C) 50

D) 48

Working

4. What is the missing number: 7, ?, 31, 63, 127

A) 19

B) 16

C) 17

D) 15

Working

5. Which number is wrong in this series: 3, 6, 12, 24, 46, 96?

A) 96

B) 24

C) 12

D) 46

Working

6. Which number does not belong: 4, 16, 36, 49, 64?

A) 36                      B) 49                      C) 16                      D) 64

Working

7. In the series 4, 11, 18, 25, ... which term is 88?

A) 11th                      B) 12th                      C) 13th                      D) 14th

Working

8. In a series each term is the sum of the two before it. If the first two terms are 4 and 7, what is the 6th term?

A) 47                      B) 40                      C) 76                      D) 29

Working

9. The 5th term of a series is 405 and each term is 3 times the one before. What is the 1st term?

A) 15                      B) 27                      C) 5                      D) 9

Working

10. In the triangular numbers 1, 3, 6, 10, 15, ... what is the 20th term?

A) 210                      B) 230                      C) 220                      D) 231

Working

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Answer key — fold under before giving this to a child

1. C   2. A   3. B   4. D   5. D   6. B   7. C   8. A   9. C   10. A

## 1. C) 33

Each term is double the one before minus 1, so  $17 \times 2 - 1 = 33$ .

## 2. A) 35

Each term is one less than a square number, and the next square is 36, so the answer is 35.

## 3. B) 54

Each term is the sum of the three before it, so  $9 + 16 + 29 = 54$ .

## 4. D) 15

Each term is double the one before plus 1, so the missing term is  $7 \times 2 + 1 = 15$ .

## 5. D) 46

Each term should be double the one before, so 46 should be 48.

## 6. B) 49

All the others are squares of even numbers, but 49 is the square of 7.

## 7. C) 13th

The gaps of 7 mean  $88 = 4 + 12 \times 7$ , so 88 is the 13th term.

## 8. A) 47

The series runs 4, 7, 11, 18, 29, 47.

## 9. C) 5

Dividing 405 by 3 four times gives 135, 45, 15 and then 5.

## 10. A) 210

The 20th triangular number is  $20 \times 21$  divided by 2, which is 210.