

# Grade 4 - Number and Shape Patterns - Quiz

Common Core 4.OA.C.5 · maths-pdf.fr/en/

Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

Choose the best answer for each of the 10 questions on number and shape patterns. Read the explanation after each question to learn from any mistake.

**Grade 4** · Common Core State Standards: **4.OA.C.5**

## Questions

### Question 1

Start at 6 and add 5 each time. Which list shows the first four numbers?

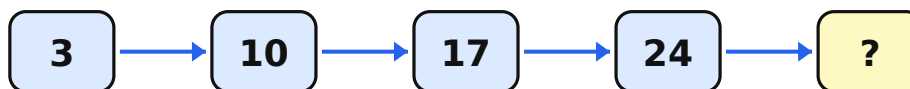
- A. 6, 12, 18, 24
- B. 5, 10, 15, 20
- C. 6, 11, 16, 21
- D. 6, 11, 17, 22

### Question 2

Start at 2 and multiply by 3 each time. What is the fourth number?

- A. 24
- B. 54
- C. 18
- D. 162

### Question 3



Number pattern.

Which number comes next in the pattern?

- A. 31
- B. 27
- C. 32
- D. 34

#### Question 4

Start at 4 and add 3 each time. Which number is in the pattern?

- A. 20
- B. 21
- C. 18
- D. 19

#### Question 5

Start at 1 and add 2 each time. Which feature is true for every number?

- A. Every number is even
- B. Odd and even numbers take turns
- C. Every number is a multiple of 3
- D. Every number is odd

#### Question 6

|               |   |    |    |    |
|---------------|---|----|----|----|
| <b>Input</b>  | 2 | 4  | 6  | 8  |
| <b>Output</b> | 9 | 11 | 13 | 15 |

An input-output table.

What is the rule?

- A. Add 9
- B. Multiply by 2
- C. Add 7
- D. Subtract 7

#### Question 7



Toothpick squares.

How many toothpicks make 5 squares in a row?

- A. 15
- B. 16

- C. 20
- D. 14

### Question 8

Start at 100 and subtract 12 each time. What is the fifth number?

- A. 40
- B. 52
- C. 64
- D. 48

### Question 9

Start at 3 and add 5 each time. Which statement is true?

- A. The numbers alternate between odd and even
- B. All the numbers are odd
- C. All the numbers are even
- D. All the numbers end in 3

### Question 10

A pool has 10 gallons of water. Each minute 6 more gallons are added. How many gallons are in the pool after 5 minutes?

- A. 40
- B. 36
- C. 46
- D. 30

## Answers

1. **C** – Add 5 to 6 to get 11, then 16, then 21. Adding 6 each time gives the first wrong list.
2. **B** – 2, 6, 18, 54. The 18 is the third number and 162 is the fifth.
3. **A** – Each term is 7 more than the one before, so the next term is  $24 + 7 = 31$ .
4. **D** – The terms are 4, 7, 10, 13, 16, 19. The numbers 18, 20 and 21 are skipped.
5. **D** – Adding an even number (2) to an odd number gives an odd number, so the terms stay odd.
6. **C** – 9 is 7 more than 2 and 11 is 7 more than 4. The rule is add 7.
7. **B** – The pattern adds 3 each time: 4, 7, 10, 13, 16. Multiplying 3 by 5 forgets the toothpick at the start.
8. **B** – 100, 88, 76, 64, 52. The number 64 is the fourth number.
9. **A** – 3, 8, 13, 18, 23 alternate between odd and even because 5 is odd.
10. **A** – Add 6 five times: 16, 22, 28, 34, 40. Forgetting the 10 gallons gives 30.

## Remember

- A pattern rule gives a starting number and an operation to repeat.
- Each number in a pattern is called a term.
- Adding an odd number makes terms alternate odd and even; adding an even number keeps them all odd or all even.
- In an input-output table, the same rule turns every input into its output.
- Shape patterns grow by adding the same number of pieces at each step.