

Grade 4 - Number and Shape Patterns - Test

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Name: _____ Class: _____ Date: ____/____/____

This test checks number and shape patterns: making terms from a rule, finding rules, completing input-output tables, and explaining features of a pattern. It has 9 questions worth 20 points. Allow 45 minutes.

About this test

- Grade: Grade 4
- Chapter: Number and Shape Patterns
- Standards: 4.OA.C.5
- Time: 45 minutes
- Total: 20 points

Question 1 - Add 7 pattern [2 pts]

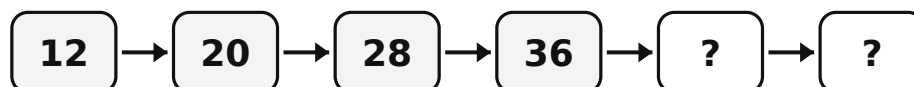
Start at 8. The rule is add 7. Write the first six numbers.

Question 2 - Doubling pattern [2 pts]

Start at 3. The rule is multiply by 2. Write the first five numbers.

Question 3 - Missing terms [2 pts]

Write the rule. Then find the two missing numbers.



A number pattern.

Question 4 - Input-output table [2 pts]

The rule is subtract 4. Complete the table.

Rule: subtract 4

Input	10	12	15	18	20
Output	?	?	?	?	?

Outputs are missing.

Question 5 - Find the table rule [2 pts]

Find the rule that changes each input into its output. Then find the output for input 11.

Input	3	5	7	9
Output	12	20	28	36

Question 6 - Toothpick squares [3 pts]

Squares are made in a row from toothpicks.



1 square: 4



2 squares: 7



3 squares: 10

Toothpick squares.

- Write the rule for the number of toothpicks. (1 point)
- How many toothpicks are needed for 6 squares? (1 point)
- Can 25 toothpicks make a row of squares with none left over? Explain. (1 point)

Question 7 - Odd or even feature [2 pts]

Start at 5 and add 4 each time. Write the first six numbers. Describe one feature of the pattern that the rule does not state.

Question 8 - Flower garden rows [3 pts]

Aisha plants 3 flowers in row 1. Each new row has 4 more flowers than the row before.

- Write the number of flowers in rows 1 to 5. *(1 point)*
- How many flowers are in row 8? *(1 point)*
- Can any row have exactly 50 flowers? Explain. *(1 point)*

Question 9 - Diego's claim [2 pts]

Diego says, "If you start at 2 and add 3 each time, every number is even." Is he correct? Show the first six numbers and explain.