

Grade 4 · Number and Shape Patterns · Test

Common Core 4.OA.C.5 · mathovore.fr

Name: _____ Date: ____/____/____ Score: _____

This test covers number and shape patterns from standard 4.OA.C.5. It has 9 questions worth 20 points, and a student should finish in about 45 minutes. Show the terms you write and explain your thinking when asked.

Test information

- **Grade:** Grade 4
- **Chapter:** Number and Shape Patterns
- **Common Core:** 4.OA.C.5
- **Time:** 45 minutes
- **Total:** 20 points (Question 1: 2 pts; Question 2: 2 pts; Question 3: 3 pts; Question 4: 2 pts; Question 5: 3 pts; Question 6: 2 pts; Question 7: 2 pts; Question 8: 3 pts; Question 9: 1 pt)

Question 1: Start at 6, add 7 (2 points)

- Write the first 6 terms of the pattern with the rule "start at 6, add 7." (1 point)
- Describe how the terms change between odd and even. (1 point)

Question 2: Find the rule and continue (2 points)

Here are the first three terms of a pattern.

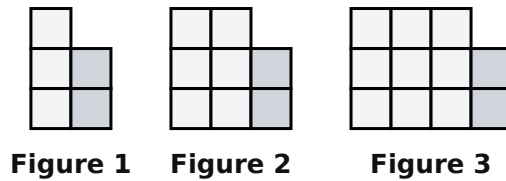


A pattern with a rule between boxes.

- Write the rule. (1 point)
- Write the next two terms. (1 point)

Question 3: Tile figures (3 points)

Tiles are arranged in figures. Figure 1 has 5 tiles, Figure 2 has 8 tiles, and Figure 3 has 11 tiles.



Figures 1, 2, and 3.

- Write the rule for the number of tiles. (1 point)
- How many tiles are in Figure 6? (1 point)
- Could a figure in this pattern have exactly 50 tiles? Explain. (1 point)

Question 4: Decreasing pattern (2 points)

Look at the pattern 90,82,74,66.

- Write the rule. (1 point)
- Write the next two terms. (1 point)

Question 5: Add 9 from 0 (3 points)

The rule is "start at 0, add 9."

- Write the first 8 terms. (1 point)
- Describe what happens to the ones digits. (1 point)
- Explain why every term is a multiple of 9. (1 point)

Question 6: Hundred chart rule (2 points)

The shaded numbers on the chart follow a pattern.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Shaded numbers on a hundred chart.

- Write the rule for the shaded numbers. (1 point)
- Describe one feature that is true for every shaded number. (1 point)

Question 7: Find the error (2 points)

Priya wrote this pattern for the rule "start at 9, add 4": 9,13,17,22,26.

- Which term is wrong? (1 point)
- Write the correct pattern. (1 point)

Question 8: Muffin sales (3 points)

Priya bakes 8 muffins on day 1. Each day she bakes 6 more muffins than the day before.

- How many muffins does she bake on each of the first 6 days? (1 point)
- On which day does she bake 50 muffins? (1 point)
- Can she bake exactly 45 muffins on some day? Explain. (1 point)

Question 9: Next term (1 point)

Write the next term: 2,6,18,54.