

Grade 4 · Number and Shape Patterns · Test Answer Key

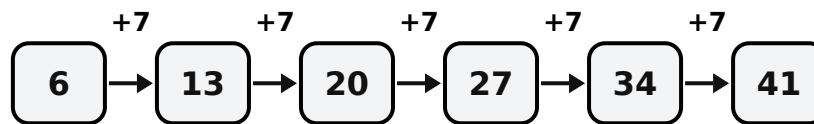
Common Core 4.OA.C.5 · mathovore.fr

This answer key shows a full worked solution and a scoring guide for every question on the number patterns test. The total is 20 points. Give partial credit as described in each scoring note.

Grade 4 Common Core: 4.OA.C.5

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

(a) $6+7=13$, $13+7=20$, $20+7=27$, $27+7=34$, $34+7=41$.



The six terms.

(b) The terms are even, odd, even, odd, even, odd.

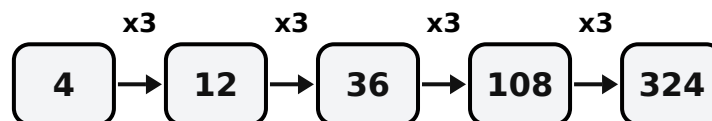
(a) 6,13,20,27,34,41. (b) They alternate between even and odd.

Scoring: 1 point for all six terms; 1 point for describing the alternating pattern.

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

(a) $4 \times 3 = 12$ and $12 \times 3 = 36$. The rule is multiply by 3.

(b) $36 \times 3 = 108$ and $108 \times 3 = 324$.



The pattern continued.

(a) Multiply by 3. (b) 108 and 324.

Scoring: 1 point for the rule (starting number is not required); 1 point for both terms.

Question 3: Tile figures (3 points)

(a) Each figure has 3 more tiles than the one before: start at 5, add 3.

(b) 5, 8, 11, 14, 17, 20. Figure 6 has 20 tiles.

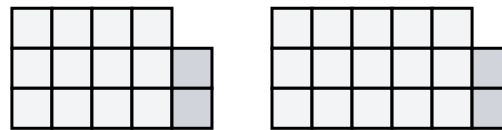


Figure 4

Figure 5

Figures 4 and 5.

(c) Continue the list: 23, 26, 29, 32, 35, 38, 41, 44, 47, 50. The 50 appears, as Figure 16 ($5 + 3 \times 15 = 50$).

(a) Start at 5, add 3. (b) 20 tiles. (c) Yes, Figure 16.

Scoring: 1 point for each part.

Question 4: Decreasing pattern (2 points)

(a) $90 - 82 = 8$, $82 - 74 = 8$, $74 - 66 = 8$. The rule is subtract 8.

(b) $66 - 8 = 58$ and $58 - 8 = 50$.

(a) Subtract 8. (b) 58 and 50.

Scoring: 1 point for the rule; 1 point for both terms.

Question 5: Add 9 from 0 (3 points)

(a) 0, 9, 18, 27, 36, 45, 54, 63.

(b) The ones digits are 0, 9, 8, 7, 6, 5, 4, 3. They go down by 1 each time.

(c) Each term is the one before plus 9, so each term is 9 times the number of steps taken: 9×0 , 9×1 , 9×2 , and so on.

(a) 0, 9, 18, 27, 36, 45, 54, 63. (b) The ones digits decrease by 1. (c) Adding 9 over and over gives multiples of 9.

Scoring: 1 point per part.

Question 6: Hundred chart rule (2 points)

(a) $12 - 6 = 6$ and $18 - 12 = 6$. The rule is start at 6, add 6.

(b) Every shaded number is even. It is also a multiple of 3 and of 6.

(a) Start at 6, add 6. (b) All are even (or all are multiples of 3).

Scoring: 1 point for the rule; 1 point for any correct feature.

Question 7: Find the error (2 points)

(a) $17 + 4 = 21$, so 22 is wrong.

(b) $21 + 4 = 25$, so the next term is 25.

(a) The fourth term, 22. (b) 9,13,17,21,25.

Scoring: 1 point for naming the fourth term; 1 point for the correct pattern.

Question 8: Muffin sales (3 points)

(a) 8,14,20,26,32,38.

(b) Continue: day 7 is 44 and day 8 is 50.

(c) Every term is even because 8 and 6 are even. The number 45 is odd.

(a) 8,14,20,26,32,38. (b) Day 8. (c) No, all terms are even.

Scoring: 1 point per part.

Question 9: Next term (1 point)

$6 \div 2 = 3$ and $54 \div 18 = 3$, so the rule is multiply by 3. $54 \times 3 = 162$.

162

Scoring: 1 point for 162.

Total
20 points