Y6 Linear Sequences

KS2 Y6 Maths · Follows the national curriculum

Name _____ Class _____ Date _____

1. Worked example

5, 9, 13, 17, ... Find the rule and the next two terms.

Step 1 · Difference between terms

+4 each time

Step 2 · 17 + 4, then + 4 again

21, 25

Answer: Add 4; next terms 21 and 25

Check: The terms go up in equal steps, so it is a linear sequence ✓

2. Now try one with the steps

40, 34, 28, 22, ... Find the next two terms.

Step 1 · Difference

Step 2 · 22 – 6, then – 6 again

Answer:

3. Practice

Have a go at each one. There is space underneath to work it out.

1. 6, 11, 16, 21, ? What is the next term?

2. 50, 43, 36, ? What is the next term?

3. A sequence starts at 3 and goes up by 8 each time. Write the first four terms.

4. 2.5, 3, 3.5, 4, ? What is the next term?

5. 1/4, 1/2, 3/4, 1, ? What is the next term?

6. 12, ?, 26, 33. What is the missing term?

7. 7, 4, 1, –2, ? What is the next term?

8. Describe the term-to-term rule for 4, 7, 10, 13, …

9. What is the 10th term of 4, 7, 10, 13, …?

10. Is 100 a term in the sequence 3, 7, 11, 15, …? Explain.

11. A row of 1 square uses 4 matchsticks, 2 squares use 7, and 3 squares use 10. How many matchsticks do 10 squares use?

12. In the sequence 5, 8, 11, 14, …, which position is the term 47?

13. A sequence starts at 1.4 and goes up by 0.2. What is the 5th term?

14. A linear sequence has first term 9 and sixth term 34. What is the step?

15. The rule is: multiply the position by 6, then subtract 1. Write the first three terms.

4. Before you hand it in

Finding the 10th term of 4, 7, 10 as 4 + 10 × 3 = 34.

From the 1st term to the 10th there are 9 steps: 4 + 9 × 3 = 31. Or use term = 3 × position + 1.

Saying the rule for 3, 7, 11, 15 is '× 4'.

The step (+ 4) is the term-to-term rule. The position rule is 4 × position − 1, not 4 × position.

Thinking a sequence cannot go below 0, so stopping 7, 4, 1 at 1.

Keep subtracting: 1 − 3 = −2, then −5.