

Finding the n th term of a linear sequence

Grade 4 | Foundation and Higher | 14 questions, 43 marks

GCSE Maths topic practice



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Name: _____ **Date:** _____ **Score:** _____ / 43

- 1** Here are the first four terms of an arithmetic sequence.

5 9 13 17

Find an expression, in terms of n , for the n th term of the sequence.

(2 marks)

Answer _____

- 2** Here are the first four terms of an arithmetic sequence.

20 17 14 11

Find an expression, in terms of n , for the n th term of the sequence.

(2 marks)

Answer _____

- 3** Here are the first four terms of an arithmetic sequence.

7 12 17 22

Explain why 81 is not a term of this sequence.

(2 marks)

Answer _____

- 4** The n th term of a sequence is $6n - 1$

Write down the first three terms of the sequence.

(2 marks)

Answer _____

- 5** Here are the first four terms of an arithmetic sequence.

3 10 17 24

Find an expression, in terms of n , for the n th term of the sequence.

(2 marks)

Answer _____

- 6 Matchsticks are used to make a row of squares. One square uses 4 matchsticks, two squares joined in a row use 7 matchsticks, and three squares joined in a row use 10 matchsticks. The pattern continues.
- Find an expression, in terms of n , for the number of matchsticks needed for n squares.
 - How many matchsticks are needed for 20 squares?

(3 marks)

Answer _____

- 7 Here are the first four terms of an arithmetic sequence.

4 7 10 13

- Write down the next term of the sequence.
- Find an expression, in terms of n , for the n th term of the sequence.

(3 marks)

Answer _____

- 8 Here are the first four terms of a sequence.

7 11 15 19

- Find an expression, in terms of n , for the n th term.
- Which term in the sequence has a value of 99?

(3 marks)

Answer _____

- 9 The n th term of a sequence is $5n - 3$

- Work out the 12th term of the sequence.
- Is 122 a term of the sequence? You must show how you get your answer.

(3 marks)

Answer _____

10 Here are the first four terms of an arithmetic sequence.

8 15 22 29

- Find an expression, in terms of n , for the n th term of the sequence.
- Explain why 150 is not a term of the sequence.

(4 marks)

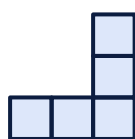
Answer _____

11 Here are the first three patterns in a sequence made from grey square tiles.

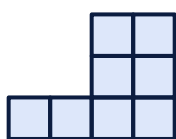
Pattern 1 uses 5 tiles. Pattern 2 uses 8 tiles. Pattern 3 uses 11 tiles.

The number of tiles goes up by the same amount from each pattern to the next.

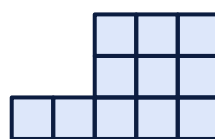
- Work out the number of tiles in pattern 5.
- Write down an expression, in terms of n , for the number of tiles in pattern n .
- Explain why there is no pattern in this sequence that uses exactly 100 tiles.



Pattern 1



Pattern 2



Pattern 3

(5 marks)

Answer _____

12 The first term of an arithmetic sequence is 3.

The term-to-term rule is add 6.

- Work out the 5th term of the sequence.
- Find an expression, in terms of n , for the n th term of the sequence.
- Explain why every term of the sequence is an odd number.

(4 marks)

Answer _____

13 The n th term of a sequence is $50 - 6n$.

- Write down the first three terms of the sequence.
- Work out the first term of the sequence that is negative.

(4 marks)

Answer _____

14 Here are the first four terms of an arithmetic sequence.

100 93 86 79

- Write down the next two terms of the sequence.
- Find an expression, in terms of n , for the n th term of the sequence.
- Explain why 0 is not a term of the sequence.

(4 marks)

Answer _____

End of questions | Total 43 marks