

# Sequences (Nth Term)

## Question Paper

Level	GCSE
Subject	Maths
Exam Board	Edexcel GCSE
Topic	Sequences (Nth Term)
Grade Level	Grade 4
Booklet	Question Paper

**Time Allowed:** 58 minutes

**Score:** /48

**Percentage:** /100

**Grade Boundaries:**

1. Here are the first 5 terms of an arithmetic sequence.

6, 11, 16, 21, 26

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

.....

**(Total 2 marks)**

2. Here are the first five terms of a number sequence.

3 8 13 18 23

(a) Write down the next **two** terms of the sequence.

....., .....

**(2)**

(b) Explain how you found your answer.

.....

**(1)**

(c) Explain why 387 is **not** a term of the sequence.

.....

.....

**(1)**

**(Total 4 marks)**

3. Here are the first five terms of a number sequence.

126 122 118 114 110

(a) Write down the next two terms of the number sequence.

....., .....

**(1)**

(b) Explain how you found your answer.

.....

**(1)**

The 20th term of the number sequence is 50

(c) Write down the 21st term of the number sequence.

.....

(1)

**(Total 3 marks)**

4. Here are the first five terms of a number sequence.

3      7      11      15      19

(a) Work out the 8th term of the number sequence.

.....

(1)

(b) Write down an expression, in terms of  $n$ , for the  $n$ th term of the number sequence.

.....

(2)

**(Total 3 marks)**

5. The first five terms of an arithmetic sequence are

2    9    16    23    30

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

.....

**(Total 2 marks)**

6. The first five terms of an arithmetic sequence are

2    7    12    17    22

Write down, in terms of  $n$ , an expression for the  $n$ th term of this sequence.

.....

**(Total 2 marks)**

7. Here are the first five terms of an arithmetic sequence.

$$-1 \quad 3 \quad 7 \quad 11 \quad 15$$

(a) Find, in terms of  $n$ , an expression for the  $n$ th term of this sequence.

.....  
(2)

In another arithmetic sequence the  $n$ th term is  $8n - 16$

John says that there is a number that is in both sequences.

(b) Explain why John is wrong.

.....  
.....  
(2)  
**(Total 4 marks)**

8. The first four terms of an arithmetic sequence are

$$21 \quad 17 \quad 13 \quad 9$$

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

.....  
**(Total 2 marks)**

9. The  $n$ th term of a sequence is  $2n^2$

(i) Find the 4th term of the sequence.

.....

(ii) Is the number 400 a term of the sequence?

.....

Give reasons for your answer.

.....  
.....

**(Total 3 marks)**

10. Here are the first 5 terms of an arithmetic sequence.

3    9    15    21    27

(a) Find an expression, in terms of  $n$ , for the  $n$ th term of this sequence.

.....

(2)

Ben says that 150 is in the sequence.

(b) Is Ben right?

You must explain your answer.

.....  
.....  
.....  
.....

(1)

**(Total 3 marks)**

11. Here are the first 5 terms of an arithmetic sequence.

2    9    16    23    30

(a) Write down the 12th term of this sequence.

.....

(1)

(b) Find, in terms of  $n$ , an expression for the  $n$ th term of this sequence.

.....

(2)

**(Total 3 marks)**

12. The first four terms of an arithmetic sequence are

21    17    13    9

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

.....  
**(Total 2 marks)**

13. Here are the first 5 terms of an arithmetic sequence.

6,    11,    16,    21,    26

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

.....  
**(Total 2 marks)**

14. The first five terms of an arithmetic sequence are

2    9    16    23    30

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

.....  
**(Total 2 marks)**

15. Here are the first five terms of a number sequence.

3    8    13    18    23

(a) Write down the next **two** terms of the sequence.

....., .....

(2)

(b) Explain how you found your answer.

.....

(1)

(c) Explain why 387 is **not** a term of the sequence.

.....

.....

.....

(1)

(Total 4 marks)

16. Here are the first five terms of a number sequence.

3    7    11    15    19

(a) Write down an expression, in terms of  $n$ , for the  $n$ th term of this sequence.

.....

(2)

Adeel says that 319 is a term in the number sequence.

(b) Is Adeel correct?  
You must justify your answer.

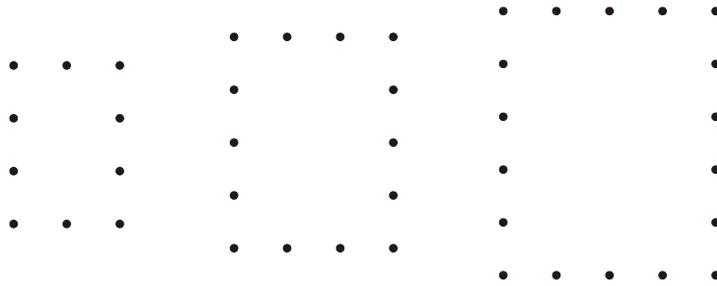
.....

.....

(2)

(Total 4 marks)

17. Here are some patterns made up of dots.



Pattern number 1      Pattern number 2      Pattern number 3

(a) In the space below, draw Pattern number 4.

(1)

(b) Complete the table.

Pattern number	1	2	3	4	5
Number of dots	10	14	18		

(1)

(c) How many dots are used in Pattern number 10?

.....

(1)

**(Total 3 marks)**