

1 Here are the first five terms of a sequence.

2                    4                    7                    11                    16

Write down the next two terms in the sequence.

**(2 marks)**

2 The first term in a sequence is 3.  
The term to term rule is add 5.

Is 97 a term in the sequence?

Give a reason for your answer.

**(2 marks)**

3 Here are the first five terms of a Fibonacci sequence

1                    2                    3                    5                    8

Write down the next two terms in the sequence.

**(2 marks)**

4 The  $n$ th term of a sequence is  $4n + 3$

(a) Find the first two terms of this sequence.

(b) Is 35 a term in this sequence.

You must show how you get your answer.

**(2 marks)**

5 The  $n$ th term of a sequence is  $n^2 + 1$

(a) Find the first two terms of this sequence.

(b) Is 35 a term in this sequence.

You must show how you get your answer.

**(2 marks)**

6 Here are the first 5 terms of a sequence.

17                    14                    11                    8                    5

(a) Find the next term of this sequence.

The  $n$ th term of a different sequence is  $10n^2 + 5$

(b) Work out the 5<sup>th</sup> term of this sequence.

**(2 marks)**

7 Here are the first four terms of a sequence.

7                    13                    19                    25

(a) Write down the next term in the sequence.

(b) Explain how you got your answer

**(2 marks)**

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

2                    3                    5                    9

The rule to continue the sequence is

multiply the previous term by 2 and then subtract 1

Work out the 5<sup>th</sup> term of this sequence.

**(1 mark)**

9 Here are the first 5 terms of a Fibonacci sequence.

2                    2                    4                    6                    10

Find the 8th term of this sequence.

**(2 marks)**

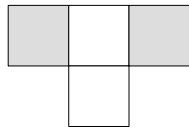
10 The  $n$ th term of a sequence is  $n^2 + 3$

(a) Find the first three terms of this sequence.

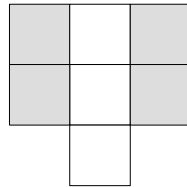
(b) Find the 10<sup>th</sup> term in this sequence.

**(3 marks)**

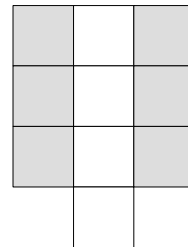
- 11 Here is a sequence of patterns made from white tiles and grey tiles.



pattern number 1



pattern number 2



pattern number 3

- (a) Draw pattern number 4.  
 (b) Work out the total number of tiles to make pattern number 7.

Kyle says

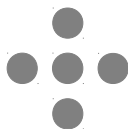
“There are 4 white tiles in pattern number 3 so there will be 8 white tiles in pattern number 6.”

- (c) Is Kyle right?

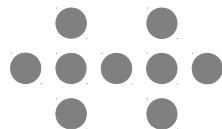
You must give a reason for your answer.

**(4 marks)**

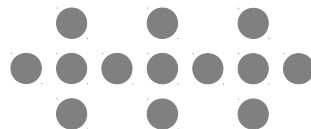
- 12 Here is a sequence of patterns made from grey counters.



pattern number 1



pattern number 2



pattern number 3

- (a) Draw pattern number 4.  
 (b) Work out the total number of counters to make pattern number 10.

**(3 marks)**

- 13 Here are the first five terms of a sequence.

31                    27                    23                    19                    15

- (a) Find the first negative term in the sequence.  
 (b) Is  $-30$  a term in this sequence?  
 Give a reason for your answer.

**(3 marks)**

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

$-3$                     1                    5                    9                    13

- (a) Find an expression, in terms of  $n$ , for the  $n$ th term of this sequence.  
 The  $n$ th term of a different arithmetic sequence is  $2n - 3$   
 (b) Is 101 a term in this sequence?  
 Show how you get your answer.

**(4 marks)**

- 15 Here are the first 5 terms of a sequence.

9                    14                    19                    24                    29

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

**(2 marks)**

- 16 Here are the first 5 terms of a sequence.

25                    22                    19                    16                    13

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

**(2 marks)**

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

4            11            18            25

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

**(2 marks)**

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

35            31            27            23

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

**(2 marks)**

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

21            27            33            39            45

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

**(2 marks)**

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

2            7            12            17            22

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

**(2 marks)**

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