

# Sequences

Calculator | 30 minutes | Total marks: 26

Name ..... Class .....

- 1 (a) Write down the next two terms of this sequence.

4   11   18   25

Answer ..... [1 mark]

- (b) Write down the rule for continuing the sequence in part (a).

Answer ..... [1 mark]

- (c) Write down the next two terms of this sequence.

80   40   20   10

Answer ..... [1 mark]

- 2 Write the two missing terms in this sequence.

3      11   15  

[2 marks]

3

Here are the first three patterns in a sequence made from sticks.



Pattern 1



Pattern 2



Pattern 3

(a) How many sticks are needed for Pattern 5?

Answer ..... [1 mark]

(b) Write an expression for the number of sticks in Pattern  $n$ .

Answer ..... [2 marks]

(c) Which pattern needs 61 sticks?

Pattern ..... [2 marks]

4

Work out the  $n$ th term of each sequence.

(a) 5    9    13    17

Answer ..... [2 marks]

(b) 20    17    14    11

Answer ..... [2 marks]

5

The  $n$ th term of a sequence is  $6n - 5$

(a) Write down the first three terms.

Answer ..... [2 marks]

(b) Work out the 50th term.

Answer ..... [1 mark]

(c) Is 100 a term in this sequence?

You **must** show your working.

[2 marks]

6

(a) What name is given to the numbers in this sequence?

1    4    9    16    25

Answer ..... [1 mark]

(b) What name is given to the numbers in this sequence?

1    3    6    10    15

Answer ..... [1 mark]

(c) In this sequence, each term is the sum of the two terms before it.

1    1    2    3    5    8

Write down the next two terms.

Answer ..... [1 mark]

7

Here is a sequence.

3    6    12    24

(a) Write down the next term.

Answer ..... [1 mark]

(b) Write down the rule for continuing the sequence.

Answer ..... [1 mark]

8

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

Write down the first three terms.

Answer .....

[2 marks]

| Question | Topic                                                               | RAG |
|----------|---------------------------------------------------------------------|-----|
| 1        | I can continue a sequence and give its rule                         |     |
| 2        | I can find missing terms                                            |     |
| 3        | I can find and use a rule for a pattern                             |     |
| 4        | I can find the $n$ th term of a sequence                            |     |
| 5        | I can use an $n$ th term and test whether a number is in a sequence |     |
| 6        | I can recognise square, triangular and Fibonacci sequences          |     |
| 7        | I can continue a sequence that multiplies                           |     |
| 8        | I can use an $n$ th term with a square                              |     |