

Sequences and Graphs

ANSWERS

Ruler | 30 minutes | Total marks: 26

Name Class

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

3 7 11 15

Answer 19 and 23 (1) [1 mark]

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

Answer add 4 (1) [1 mark]

- (c) Write down the next square number.

1 4 9 16

Answer 25 (1) [1 mark]

- (d) Write down the next triangular number.

1 3 6 10

Answer 15 (1) [1 mark]

- 2 The first term of a sequence is 5. The rule is add 6

Write down the first four terms.

Answer 5, 11, 17, 23 (1)(1) [2 marks]

3

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



Pattern 1



Pattern 2



Pattern 3

(a) Complete the table.

Pattern number	1	2	3	4	5
Number of sticks	4	7	10	13 (1)	16 (1)

[2 marks]

(b) How many sticks are needed for Pattern 6?

Answer 19 (1)

[1 mark]

4

(a) The n th term of a sequence is $3n + 2$

Write down the first three terms.

Answer 5, 8, 11 (1)(1)

[2 marks]

(b) Work out the n th term of this sequence.

4 8 12 16

Answer $4n$ (1)

[1 mark]

(c) Work out the n th term of this sequence.

5 7 9 11

$2n$ (1)

Answer $2n + 3$ (1)

[2 marks]

5

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

1 1 2 3 5 8

Write down the next term.

Answer 13 (1)

[1 mark]

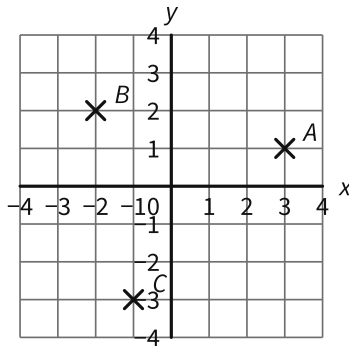
(b) Write down the next term of this sequence.

2 4 8

Answer 16 (1)

[1 mark]

6



Write down the coordinates of each point.

A (3, 1) (1)

[1 mark]

B (-2, 2) (1)

[1 mark]

C (-1, -3) (1)

[1 mark]

7

 P is the point (2, 3) and Q is the point (6, 7)Work out the coordinates of the midpoint of PQ .*halfway between 2 and 6 is 4 (1)*Answer (4, 5) (1)

[2 marks]

- 8 Here is a function machine. The input is x and the output is y .

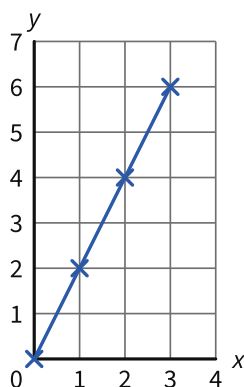
Input $\rightarrow$ $\boxed{\times 2}$ $\rightarrow$ Output

- (a) Complete the table.

x	0	1	2	3
y	0	2	4	6 (1)(1)

[2 marks]

- (b) Use your table to plot the points.



Plot the points from your table on the grid and join them with a straight line.

Points plotted (1) Straight line (1)

[2 marks]

- 9 A straight line passes through the points (3, 0), (3, 2) and (3, 5)

Write down the equation of the line.

Answer $x = 3$ (1)

[1 mark]

Question	Topic	RAG
1	I can continue sequences, including square and triangular numbers	
2	I can generate a sequence from a rule	
3	I can continue a pattern	
4	I can use and find an n th term	
5	I can recognise Fibonacci and doubling sequences	
6	I can read coordinates in four quadrants	
7	I can find a midpoint	
8	I can plot a graph from a function machine	
9	I know the equation of a vertical line	