

Sequences and Graphs

Ruler | 30 minutes | Total marks: 26

Name Class

1 Here is a sequence.

7 10 13 16

(a) Work out the n th term.

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]

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



Pattern 1



Pattern 2



Pattern 3

The number of sticks in Pattern n is $3n + 1$

Explain how the 3 and the 1 in this rule link to the patterns.

[2 marks]

3

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

Write down the first three terms.

Answer [2 marks]

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

2 5 10 17

Answer [2 marks]

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

3 9 19 33

Answer [3 marks]

4

Here is a sequence.

3 6 12 24

Write down the next term and the rule for continuing the sequence.

next term

rule [2 marks]

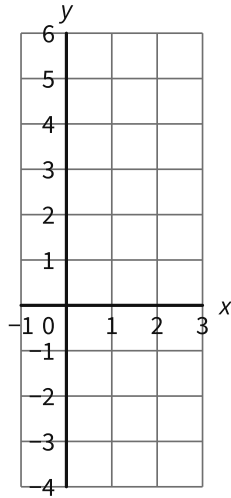
5

(a) Complete the table of values for $y = 2x - 1$

x	-1	0	1	2	3
y		-1			

[2 marks]

(b) Use your table to draw the graph.

On the grid, draw the graph of $y = 2x - 1$

[2 marks]

6

$y = 3x + 2$

(a) Write down the gradient of the line.

Answer

[1 mark]

(b) Write down where the line crosses the y -axis.

Answer

[1 mark]

(c) Which one of these lines is parallel to $y = 3x + 2$?

$y = 2x + 3$ $y = 3x - 5$ $y = x + 2$

Answer

[1 mark]

7

 A is the point $(-2, 5)$ and B is the point $(4, -1)$ Work out the coordinates of the midpoint of AB .

Answer

[2 marks]

8

A straight line has a gradient of 2 and crosses the y -axis at $(0, -3)$

Write down the equation of the line.

Answer

[1 mark]

Question	Topic	RAG
1	I can find and use the n th term of a sequence	
2	I can explain an n th term using the pattern	
3	I can work with quadratic sequences	
4	I can continue a sequence that multiplies	
5	I can draw a straight line graph from a table	
6	I know what the gradient and intercept are, and can spot parallel lines	
7	I can find a midpoint with negative coordinates	
8	I can write the equation of a line from its gradient and intercept	