

Sequences - Term-to-Term Rules and Patterns

For Pearson Edexcel GCSE Mathematics (1MA1) • Foundation tier

Name _____

Total marks: **22**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method.

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

4 13 22 31

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

.....
(1)

(b) Suki says,

‘The 10th term of the sequence is double the 5th term.’

Is Suki correct?

You must show how you get your answer.

.....
(2)

(c) Which term of the sequence is equal to 94?

.....
(1)

(Total for Question 1 is 4 marks)

2 Here are the first four terms of a sequence.

3 6 12 24

(a) Find the 6th term.

.....
(1)

(b) Write down the term-to-term rule.

.....
(1)

(Total for Question 2 is 2 marks)

3 Here are the first three terms of a sequence.

1 3 7

(a) Laila says the 4th term is 15
Write down a rule Laila could have used.

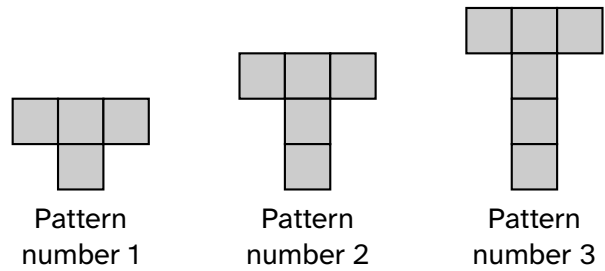
.....
(1)

(b) Find a **different** rule that gives a different 4th term.
Write down your rule and the 4th term it gives.

.....
.....
(1)

(Total for Question 3 is 2 marks)

4 Here is a sequence of patterns made from grey tiles.



(a) Draw pattern number 4.

(1)

(b) Complete the table.

Pattern number	1	2	3	4	5	6
Number of tiles	4	5	6			

(1)

(c) How many tiles are needed for pattern number 30?

.....
(1)

- (d) One pattern in this sequence needs twice as many tiles as pattern number 2
Which pattern is it?

.....

(1)

(Total for Question 4 is 4 marks)

- 5** The first term of a sequence is 2
The term-to-term rule is multiply by 3 then subtract 2

Work out the 5th term of the sequence.

.....

(2)

(Total for Question 5 is 2 marks)

- 6** The term-to-term rule of a sequence is multiply by 3 then add 5
The 3rd term of the sequence is 26
Find the 1st term of the sequence.

.....

(2)

(Total for Question 6 is 2 marks)

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

a 11 17 23 b

Find the value of a and the value of b .

$a = \dots\dots\dots$ $b = \dots\dots\dots$
(2)

(Total for Question 7 is 2 marks)

- 8** Here are the first four terms of a sequence.

5 12 19 26

Which term of the sequence is the first term to be greater than 100?

$\dots\dots\dots$
(2)

(Total for Question 8 is 2 marks)

- 9 A sequence of numbers starts at 3
Each number in the sequence is 4 more than the number before it.

(a) Show that 99 is a number in this sequence.

(1)

(b) Remy says,

‘All the numbers in this sequence are prime numbers.’

Give an example to show that Remy is wrong.

.....

(1)

(Total for Question 9 is 2 marks)
