

Sequences

Question Paper

Course	Edexcel IGCSE Maths
Section	3. Sequences, Functions & Graphs
Topic	Sequences
Difficulty	Medium

Time allowed: 60
Score: /43
Percentage: /100

Question 1a

Here are the first 5 terms of an arithmetic sequence.

3 9 15 21 27

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

[2 marks]

Question 1b

Ben says that 150 is in the sequence.

Is Ben right?

You must explain your answer.

[1 mark]

Question 2a

Here are the first four terms of an arithmetic sequence.

3 10 17 24

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

[2 marks]

Question 2b

Is 150 a term of this sequence?

You must explain how you get your answer.

[2 marks]

Question 3a

Here are the first five terms of an arithmetic sequence.

2 6 10 14 18

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

[2 marks]

Question 3b

Is 86 a term in the sequence?

You must give a reason for your answer.

[1 mark]

Question 4a

Here are the first four terms of an arithmetic sequence.

11 17 23 29

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

[2 marks]

Question 4b

Is 121 a term of this arithmetic sequence?

You must explain your answer.

[2 marks]

Question 5a

Here are the first four terms of an arithmetic sequence.

6 10 14 18

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

[2 marks]

Question 5b

The n th term of a different arithmetic sequence is $3n + 5$

Is 108 a term of this sequence?

Show how you get your answer.

[2 marks]

Question 6a

Here are the first five terms of an arithmetic sequence.

4 9 14 19 24

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

[2 marks]

Question 6b

Here are the first five terms of a different sequence.

$$2 \quad 2 \quad 0 \quad -4 \quad -10$$

An expression for the n th term of this sequence is $3n - n^2$

Write down, in terms of n , an expression for the n th term of a sequence whose first five terms are

$$4 \quad 4 \quad 0 \quad -8 \quad -20$$

[1 mark]

Question 7

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

Write down the first three terms of the sequence.

[2 marks]

Question 8

Here are the first four terms of a sequence of fractions.

$$\frac{1}{1} \quad \frac{2}{3} \quad \frac{3}{5} \quad \frac{4}{7}$$

The numerators of the fractions form the sequence of whole numbers 1 2 3 4 ...

The denominators of the fractions form the sequence of odd numbers 1 3 5 7 ...

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

[2 marks]

Question 9

Here are the first five terms of an arithmetic sequence.

7 10 13 16 19

Find the sum of the first 100 terms of this sequence.

[2 marks]

Question 10a

Here are the first four terms of an arithmetic sequence.

6 10 14 18

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

[2 marks]

Question 10b

Write down an expression, in terms of n , for the $(n + 1)$ th term of this sequence.

[1 mark]

Question 11a

Here are the first five terms of a number sequence S .

10 16 22 28 34

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

[2 marks]

Question 11b

The n th term of a sequence T is given by $n^2 - 3$

There are numbers that are terms in both the sequence S and the sequence T .

Find one of these numbers.

[2 marks]

Question 12a

Here are the first five terms of a number sequence.

7 11 15 19 23

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

[2 marks]

Question 12b

The n th term of a different number sequence is given by $80 - 2n$

Write down the first 3 terms of this sequence.

[2 marks]

Question 12c

Yuen says there are no numbers that are in both of the sequences.

Yuen is correct.

Explain why.

[1 mark]

Question 13a

A sunflower grows at a rate of 4 cm each day.

How many days does it take to grow from a height of 80 cm to more than 1.06 m?

[3 marks]

Question 13b

If the sunflower grows at a faster rate, how would this affect your answer to part **(a)**?

[1 mark]