

Sequences

Difficulty: Easy

Question Paper 1

Level	IGCSE
Subject	Maths (0580/0980)
Exam Board	CIE
Topic	Algebra and graphs
Sub-Topic	Sequences
Paper	Paper 2
Difficulty	Easy
Booklet	Question Paper 1

Time allowed: 50 minutes

Score: /39

Percentage: /100

Grade Boundaries:

CIE IGCSE Maths (0580)

A*	A	B	C	D	E
>88%	76%	63%	51%	40%	30%

CIE IGCSE Maths (0980)

9	8	7	6	5	4	3
>94%	85%	77%	67%	57%	47%	35%

Question 1

Here are the first four terms of a sequence.

23 17 11 5

(a) Find the next term. [1]

(b) Find the n th term. [2]

Question 2

7, 5, 3, 1, -1 , ...

(a) Find the next term in this sequence. [1]

(b) Find the n th term of the sequence. [2]

Question 3

Find the n th term of each sequence.

(a) 4, 8, 12, 16, 20, [1]

(b) 11, 20, 35, 56, 83, [2]

Question 4

5, 11, 21, 35, 53, ...

Find the n th term of this sequence. [2]

Question 5

These are the first five terms of a sequence.

13 8 3 -2 -7

Find the n th term of this sequence. [2]

Question 6

32 25 18 11 4

These are the first 5 terms of a sequence.

Find

(a) the 6th term, [1]

(b) the n th term, [2]

(c) which term is equal to -332 . [2]

Question 7

The first five terms of a sequence are shown below.

$$13 \quad 9 \quad 5 \quad 1 \quad -3$$

Find the n th term of this sequence. [2]

Question 8

A sequence is given by $u_1 = \sqrt{1}$, $u_2 = \sqrt{3}$, $u_3 = \sqrt{5}$, $u_4 = \sqrt{7}$, ...

(a) Find a formula for u_n , the n th term. [2]

(b) Find u_{29} . [1]

Question 9

(a) The formula for the n th term of the sequence

$$1, 5, 14, 30, 55, 91, \dots \text{ is } \frac{n(n+1)(2n+1)}{6}.$$

Find the 20th term.

[1]

(b) The n th term of the sequence $10, 17, 26, 37, \dots, 50, \dots$ is $(n+2)^2 + 1$.

Write down the formula for the n th term of the sequence $17, 26, 37, 50, 65, \dots$

[1]

Question 10

For each of the following sequences, write down the next term.

(a) 2, 3, 5, 8, 13, ... [1]

(b) x^6 , $6x^5$, $30x^4$, $120x^3$, ... [1]

(c) 2, 6, 18, 54, 162, ... [1]

Question 11

For the sequence $5\frac{1}{2}$, 7, $8\frac{1}{2}$, 10, $11\frac{1}{2}$, ...

(a) find an expression for the n th term, [2]

(b) work out the 100th term. [1]

Question 12

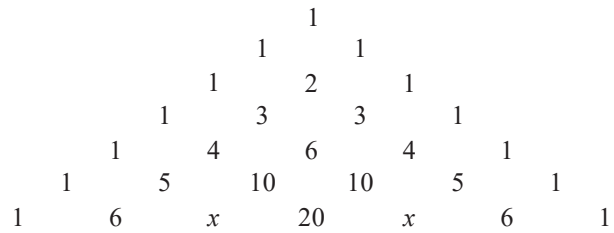
Write down the next term in each of the following sequences.

(a) 8.2, 6.2, 4.2, 2.2, 0.2, ... [1]

(b) 1, 3, 6, 10, 15, ... [1]

Question 13

A pattern of numbers is shown below.



Write down the value of x .

[1]

Question 14

8, 15, 22, 29, 36,

A sequence of numbers is shown above.

(a) Find the 10th term of the sequence. [1]

(b) Find the n th term of the sequence. [1]

(c) Which term of the sequence is equal to 260? [1]

Question 15

The first five terms of a sequence are 4, 9, 16, 25, 36, ...
Find

(a) the 10th term, [1]

(b) the n th term. [1]