Sequences

Question Paper

Level	IGCSE
Subject	Maths
Exam Board	Edexcel
Topic	Sequences, Functions and Graphs
Sub Topic	Sequences
Booklet	Question Paper

Time Allowed: **20 minutes**

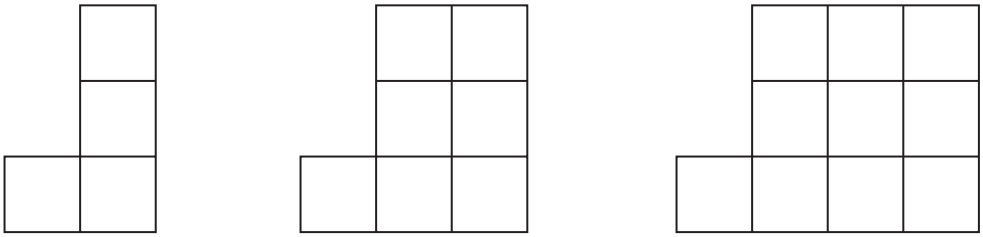
Score: **/16**

Percentage: **/100**

Grade Boundaries:

9	8	7	6	5	4	3	2	1
>90%	80%	70%	60%	50%	40%	30%	20%	10%

1 Here is a sequence of patterns made from centimetre squares.



Pattern number 1 | Pattern number 2 | Pattern number 3

(a) Find an expression, in terms of n, for the total number of centimetre squares in Pattern number n.

.....

(2)

A pattern in this sequence has 88 centimetre squares.

(b) Work out the Pattern number of this pattern.

.....

(2)

(Total for Question 1 is 4 marks)

2 Here are some rows of a number pattern.

Row number	Column 1	Column 2	Column 3
1	$1 \times 3 + 1$	4	2^2
2	$2 \times 4 + 1$	9	3^2
3	$3 \times 5 + 1$	16	4^2
⋮			
		676	
⋮			
n			

(a) Write down the Row number of the row that has 676 in Column 2

.....

(1)

(b) For Row number n,

(i) write down an expression, in terms of n, that should go in Column 1

.....

(ii) write down an expression, in terms of n, that should go in Column 3

.....

(2)

(Total for Question 2 is 3 marks)

3 The first four terms of an arithmetic sequence are

5 9 13 17

(a) Write down an expression, in terms of n, for the nth term.

.....

(2)

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

.....

(1)

(Total for Question 3 is 3 marks)

4 n is a positive integer.

(a) Explain why $2n + 1$ is an odd number for all values of n.

.....

.....

.....

(1)

(b) Show, using algebra, that the sum of any 4 consecutive odd numbers is always a multiple of 8

(3)

(Total for Question 4 is 4 marks)

5 Here are the first five terms of an arithmetic sequence.

7 10 13 16

Find an expression for the nth term of the sequence.

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(Total for Question 5 is 2 marks)