Edexcel GCSEMathematics (Linear) – 1MA0

SEQUENCES

Materials required for examination

Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser.

Tracing paper may be used.

Items included with question papers Nil



Instructions

Use black ink or ball-point pen.

Fill in the boxes at the top of this page with your name, centre number and candidate number. Answer all questions.

Answer the questions in the spaces provided – there may be more space than you need. Calculators may be used.

Information

The marks for each question are shown in brackets – use this as a guide as to how much time to spend on **each** question.

Questions labelled with an **asterisk** (*) are ones where the quality of your written communication will be assessed – you should take particular care on these questions with your spelling, punctuation and grammar, as well as the clarity of expression.

Advice

Read each question carefully before you start to answer it.

Keep an eye on the time.

Try to answer every question.

Check your answers if you have time at the end.

		6, 11, 16, 21, 26	
	Fine	d an expression, in terms of n , for the n th term of the sequence.	
		(Total 2 ma	rks)
2.	Her	e are the first five terms of a number sequence.	
		3 8 13 18 23	
	(a)	Write down the next two terms of the sequence.	
		,	(2)
	(b)	Explain how you found your answer.	
			(1)
	(c)	Explain why 387 is not a term of the sequence.	
		(Total 4 ma	(1) arks)
3.	Her	e are the first five terms of a number sequence.	
		126 122 118 114 110	
	(a)	Write down the next two terms of the number sequence.	
		,	(1)
	(b)	Explain how you found your answer.	
			(1)

Here are the first 5 terms of an arithmetic sequence.

1.

	The 20th term of the number sequence is 50
	(c) Write down the 21st term of the number sequence.
	(1) (Total 3 marks)
4.	Here are the first five terms of a number sequence.
••	3 7 11 15 19
	(a) Work out the 8th term of the number sequence.
	(1)
	(b) Write down an expression, in terms of <i>n</i> , for the <i>n</i> th term of the number sequence.
	(2) (Total 3 marks)
5.	The first five terms of an arithmetic sequence are
	2 9 16 23 30
	Find, in terms of n , an expression for the n th term of this sequence.
	(Total 2 marks)
6.	The first five terms of an arithmetic sequence are
	2 7 12 17 22
	Write down, in terms of n , an expression for the n th term of this sequence.
	(Total 2 marks)

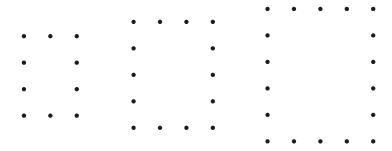
7.	Here are the first five terms of an arithmetic sequence.	
	-1 3 7 11 15	
	(a) Find, in terms of n , an expression for the n th term of this sequence.	
		(2)
	In another arithmetic sequence the <i>n</i> th term is $8n - 16$	
	John says that there is a number that is in both sequences.	
	(b) Explain why John is wrong.	
		••
	(Total 4 n	(2) narks)
0		1101
8.	The first four terms of an arithmetic sequence are	
	21 17 13 9	
	Find, in terms of n , an expression for the n th term of this sequence.	
9.	The nth term of a sequence is $2n^2$ (Total 2 m	narks)
	(i) Find the 4th term of the sequence.	
	(ii) Is the number 400 a term of the sequence?	
	(11) Is the number 400 a term of the sequence.	
		· • •
	Give reasons for your answer.	
••••		
••••		,
	(Total 3 n	narks)

10.	Here	are the	e firs	t 5 te	rms of	f an a	arithn	etic sequence.			
			3	9	15	21	2	,			
	(a)	Find	an ex	xpres	sion, i	n ter	ms o	n, for the nth t	term of th	is sequer	nce.
								•••••	•••••	••••••	•••••
											(2)
	Ben	says tl	hat 1:	50 is	in the	sequ	ience				
	(b)	Is Be	en rig	ht?							
			You	u mus	st expl	lain y	your	nswer.			
	•••••	•••••		•••••		•••••			•••••		
	•••••	•••••		•••••	• • • • • • • • • • • • • • • • • • • •						
		•••••		•••••					•••••		
	•••••	•••••		•••••	• • • • • • • • • • • • • • • • • • • •				• • • • • • • • • • • • • • • • • • • •		
											(1)
										(Tota	l 3 marks)
11.	Here	are the	e firs	t 5 te	rms of	f an a	arithn	etic sequence.			
			2	9	1	6	23	30			
(a)	Write	e dowr	n the	12th	term o	of thi	s seq	ience.			
									••••		(1)
(1.)	D' 1	• 4		C		•	C	41 41. 4	C 41. *		(-)
(b)	Find	, in ter	ms o	rn, ai	n expr	essic	on Toi	the nth term of	this sequ	ence.	
											(2)
										(Tota	l 3 marks)

12.	The first four	terms c	of an a	rithn	netic sequence are
	21	17	13	9	
	Find, in terms	of n, a	n expi	essi	on for the <i>n</i> th term of this sequence.
					(Total 2 marks)
13.	Here are the fi	irst 5 te	erms o	f an	arithmetic sequence.
			6,	, 1	1, 16, 21, 26
	Find an expres	ssion, i	n term	s of	n, for the n th term of the sequence.
					(Total 2 marks)
					(10tai 2 mai ks)
14.	The first five t	terms o	of an a	rithn	netic sequence are
,			16		_
	Find, in terms				on for the <i>n</i> th term of this sequence.
	,	,	1		1
					(Total 2 marks)

15.	Her	ere are the first five terms of a number sequence.										
		3	8	13	18	23						
	(a)	Write do	own th	ne nex	kt tw	o terms o	of the se	quence.				
									,	(2)		
	(b)	Explain	how y	you fo	ound	your ans	swer.					
			•••••	•••••	•••••	•••••	••••••	••••••		(1)		
	(c)	Explain	why 3	387 is	not	a term o	f the seq	juence.				
		•••••	•••••	•••••	••••••		•••••		('	(1) Fotal 4 marks)		
16.	Her	e are the f	irst fi	ve te	rms c	of a num	ber sequ	ence.				
			3		7	11	15	19				
	(a)	Write do		n exp	ressi	on, in te	rms of n ,	, for the	<i>n</i> th term of the	nis		
								•••••		(2)		
	Adeel says that 319 is a term in the number sequence.											
	(b)	Is Adeel You mus			our a	nswer.						
			•••••	•••••	•••••	•••••	••••••	•••••				
		•••••	•••••	•••••	•••••	•••••	•••••	••••••	(1	(2) Fotal 4 marks)		

17. Here are some patterns made up of dots.



Pattern number 1 Pattern number 2 Pattern number 3

(a) In the space below, draw Pattern number 4.

(1)

(b) Complete the table.

Pattern number	1	2	3	4	5
Number of dots	10	14	18		

(1)

(c) How many dots are used in Pattern number 10?

.....(1)

(Total 3 marks)