

GCSE MATHEMATICS

Higher tier

Algebra

Topic test – Quadratic *n*th term

v1.0

Name_

Materials

For this paper you must have:

• Mathematical instruments



A calculator.

Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 27.

Advice

• In all calculations, show clearly how you work out your answer.

For Teacher's Use		
Pages	Mark	
2 - 3		
4 - 5		
6		
TOTAL		

1	The first five terms of a quadratic sequence are					
	3		6	11	18	27
1 (a)	Work out the ne	ext two term	s in the sequen	ce.		[2 marks]
	An	swer		and		
1 (b)	Work out the <i>n</i> t	h term of th	e sequence.			[3 marks]
		Answer _				
1 (c)	Is 402 a term ir Justify your ans	n this sequer swer.	nce?			
						[2 marks]

2	The first four terms of a quadratic sequence are:				
	9	23	45	75	
2 (a)	Work out the next	two terms of the sequ	lence.		[2 marks]
	Answ	er	and		
2 (b)	Work out the <i>n</i> th to	erm of the sequence.			[4 marks]
		Answer			

13

3	A sequence is generated by the nth term formula				
	$2n^2 - 5n + 1$				
	Determine the first for	ur terms of this	sequence.		
					[3 marks]
	Answer				
	Determine with the set	- fallen in er an		duatia airina a naaa	f
4	answer.	e lollowing seq	uences are qua	dratic, giving a reas	on for your
4 (a)	2	5		8	11
	Quadratic		Non-quadratic		
					[1 mark]
	Reason				
4 (b)					
	0	5		12	21
	Quadratic		Non-quadratic		
					[1 mark]
	Reason				

4 (c) 6 8 14 22 Quadratic Non-quadratic [1 mark] Reason 5 Work out an expression for the *n*th term of the quadratic sequence. 1 12 29 52 Give your answer in the form $an^2 + bn + c$ where *a*, *b* and *c* are constants. [3 marks] Answer

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