



Thursday 16 May 2019 – Afternoon

AS Level Further Mathematics B (MEI)

Y413/01 Modelling with Algorithms

Printed Answer Booklet

Time allowed: 1 hour 15 minutes

You must have:

- Question Paper Y413/01 (inserted)
- Formulae Further Mathematics B (MEI)

You may use:

· a scientific or graphical calculator



Please write cle	arly in	black	k ink.	Do no	ot writ	e in the barcodes.		
Centre number						Candidate number		
First name(s)								
Last name								

INSTRUCTIONS

- Use black ink. HB pencil may be used for graphs and diagrams only.
- Answer all the questions.
- Write your answer to each question in the space provided in the Printed Answer Booklet. Additional paper may be used if necessary but you must clearly show your candidate number, centre number and question number(s).
- You are permitted to use a scientific or graphical calculator in this paper.
- Final answers should be given to a degree of accuracy appropriate to the context.

INFORMATION

- You are advised that an answer may receive no marks unless you show sufficient detail
 of the working to indicate that a correct method is used. You should communicate your
 method with correct reasoning.
- The Printed Answer Booklet consists of 12 pages. The Question Paper consists of 8 pages.

1 (a)	
1(b)	

1 (c)	
1(d)	

4

	Activity	Immediate predecessor(s)
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2(c)(i)	
	B(4) $E(10)$ $K(5)$ $C(6)$ $D(2)$ $G(3)$ $E(10)$ E
2(c)(ii)	
2 (d)	
	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 Person 1
	15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 Person 1
2(e)	

3(a)				I	I		I	I			
- (••)		A	В	С	D	Е	F	G	Н	I	
	A		5	8	16						
	В	5		2			4	11			
	С	8	2		8		1				
	D	16		8		2					
	Е				2		3			5	
	F		4	1		3			2	12	
	G		11						2		
	Н						2	2		7	
	I					5	12		7		
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3 (b)	
	Order of becoming permanent labels Permanent Temporary labels
	A B C
	D
	G H I
3(c)	

4 (a)	
	A D 22 G G 53 B 40 H
	25 C 30 F 27 I
4(b)	
4(c)(i)	
4(c)(ii)	
4 (C)(II)	

4(d)	
4 (e)(i)	
4(e)(ii)	
4 (f)(i)	
4 (f)(ii)	

Q	P	x	у	z	s ₁	s ₂	s ₃	<i>s</i> ₄	a_1	a_2	RHS
Q	P	x	у	Z	<i>s</i> ₁	<i>s</i> ₂	<i>s</i> ₃	<i>s</i> ₄	a_1	a ₂	RHS
Q	P	x	у	Z	<i>s</i> ₁	s ₂	<i>s</i> ₃	<i>s</i> ₄	a_1	a ₂	RHS
Q	P	x	у	Z	<i>s</i> ₁	<i>s</i> ₂	s ₃	<i>s</i> ₄			RHS
Q	P	x	у	z	<i>s</i> ₁	<i>s</i> ₂	s ₃	<i>s</i> ₄			RHS
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Q	P	x	у	Z			<i>s</i> ₃	<i>s</i> ₄			RHS
Q	P	X	у	Z	<i>s</i> ₁		<i>s</i> ₃	<i>s</i> ₄			RHS
	P	X	у	Z		<i>s</i> ₂	<i>s</i> ₃	<i>s</i> ₄			RHS

5(b)									
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5(b)	(continued)

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