



# Wednesday 8 June 2022 – Afternoon

# A Level Further Mathematics B (MEI)

Y433/01 Modelling with Algorithms

**Printed Answer Booklet** 

Time allowed: 1 hour 15 minutes

#### You must have:

- Question Paper Y433/01 (inside this document)
- the Formulae Booklet for Further Mathematics B (MEI)
- a scientific or graphical calculator



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

#### **INSTRUCTIONS**

- Use black ink. You can use an HB pencil, but only for graphs and diagrams.
- Write your answer to each question in the space provided in the Printed Answer Booklet. If you need extra space use the lined pages at the end of the Printed Answer Booklet. The question numbers must be clearly shown.
- Answer all the questions.
- Where appropriate, your answer should be supported with working. Marks might be given for using a correct method, even if your answer is wrong.
- Give your final answers to a degree of accuracy that is appropriate to the context.

### **INFORMATION**

• This document has 20 pages.

### **ADVICE**

· Read each question carefully before you start your answer.

1(a)	
	A 15 F 3 H 34 D 24 17 17 25  10 E 24 12 J C 39 K
1(b)	
1(c)	

<b>1(d)</b>	
<b>1(e)</b>	

4

<b>2</b> (a)			
	A	В	Is $ A - B  < 0.001$ ?
	Final output		
2(b)			
2(c)			

5

3(a)				
3(b)	_			
		Activity	<b>Duration</b> (hours)	
		A		
		В		
		С		
		D		
		Е		
		F		
		G		
		Н		
		I		
		J		
		K		
3(c)				
	Worken 1	0 1 2	2 3 4 5 6 7 8	9 10
	Worker 1 Worker 2	·		
	Worker 3	!!!		
	Worker	' I I I		
		10 11 1	2 13 14 15 16 17 18	19_20
	Worker 1			
	Worker 2			
	Worker 3			
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<b>4</b> (a)	
	_
	_
	_
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400	_
<b>4(b)</b>	
	_
4(c)	
	_
	_

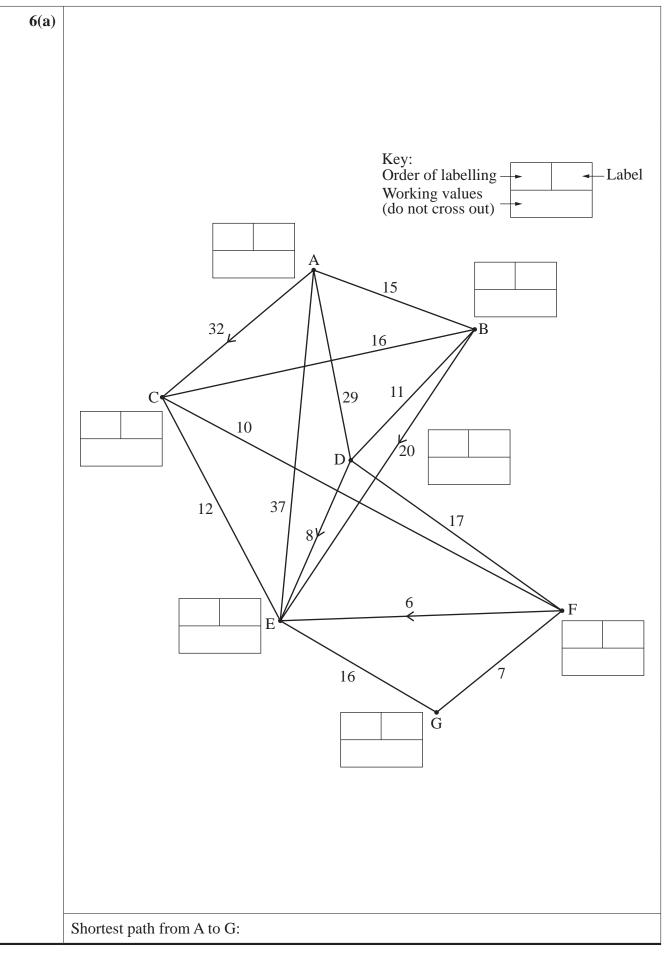
7 BLANK PAGE

PLEASE DO NOT WRITE ON THIS PAGE

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<b>5</b> (a)							
<b>5(b)</b>							
<b>5</b> (c)							
	Q	X	Y	Z	$s_1$	$s_2$	RHS
	There is a spa	are copy of th	is tableau on	page 16			

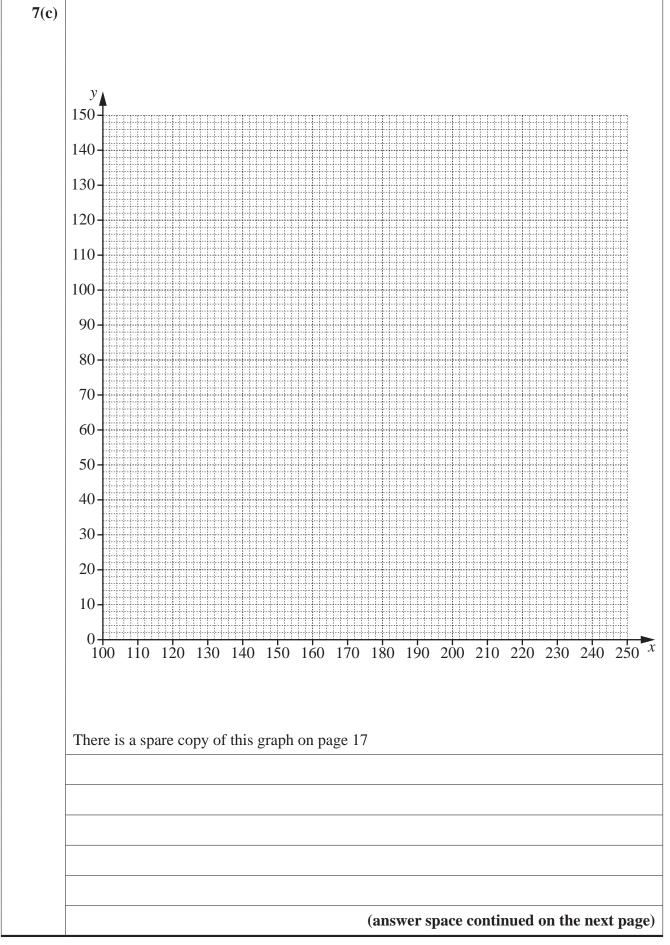
<b>5(d)</b>							
	Q	X	Y	Z	<i>s</i> <sub>1</sub>	$s_2$	RHS
	1	$\frac{7}{4}$	0	-1	0	3/4	24
	0	$\frac{7}{4}$	0	4	1	$-\frac{1}{4}$	40
	0	<u>5</u>	1	0	0	$\frac{1}{4}$	8
	Q	X	Y	Z	$s_1$	$s_2$	RHS
	2		-		71	2	1112
<b>5</b> (.)	There is a sp	are copy of the	nis tableau on	page 16			
5(e)							
	<i>P</i> =						
	x =						
	y =						
	z =						



6(b)(i)	
6(b)(ii)	
6(b)(iii)	
6(c)(i)	
6(c)(ii)	

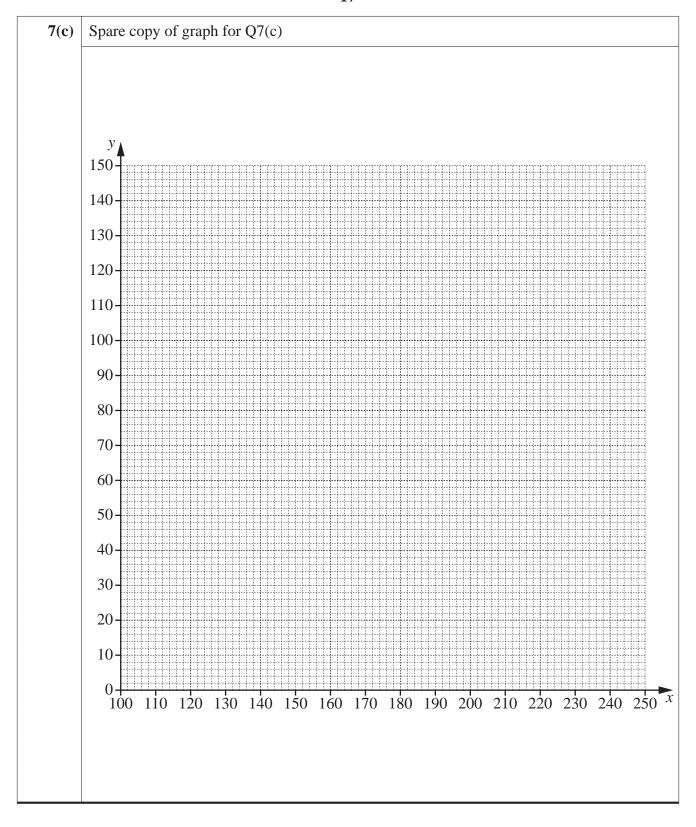
<b>7</b> (a)	
<b>7</b> (b)	
	(anguar angua continued on the most mage)
	(answer space continued on the next page)

<b>7(b)</b>	(continued)



<b>7</b> (c)	(continued)
-(3)	
<b>7</b> (d)	

3(c)	Spare copy of schedule for Q3(c)								
	0 1 2 3 4 5 6 7 8 9 10								
		Worker 1 Worker 2	- i i i i						
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		Worker 3	3 ! ! !						
5(c)	Spare copy	of tableau for	Q5(c)						
5(c)	Spare copy	of tableau for	Q5(c)						
5(c)	Spare copy  Q	of tableau for	Q5(c) Y	Z	<i>s</i> <sub>1</sub>	$s_2$	RHS		
5(c)			I	Z	s <sub>1</sub>	s <sub>2</sub>	RHS		
5(c)			I	Z	<i>s</i> <sub>1</sub>	s <sub>2</sub>	RHS		
5(c)			I	Z	<i>s</i> <sub>1</sub>	$s_2$	RHS		
5(c)			I	Z	<i>s</i> <sub>1</sub>	s <sub>2</sub>	RHS		
5(c)			I	Z	<i>s</i> <sub>1</sub>	s <sub>2</sub>	RHS		
5(c) 5(d)	Q		Y	Z	<i>s</i> <sub>1</sub>	<i>s</i> <sub>2</sub>	RHS		
	Q	X	Y	Z	s <sub>1</sub>		RHS		
	Q	X	Y	Z	$s_1$	$s_2$	RHS		
	Q Spare copy	of tableau for	<i>Y</i> Q5(d)						
	Q Spare copy	of tableau for	<i>Y</i> Q5(d)						
	Q Spare copy	of tableau for	<i>Y</i> Q5(d)						



# 18 ADDITIONAL ANSWER SPACE

If additional space is required, you should use the following lined page(s). The question number(s) must be clearly shown in the margin(s).



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