



Oxford Cambridge and RSA

**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 clearly in black ink. **Do not write in the barcodes.**

Centre number

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Candidate number

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First name(s)

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Last name

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**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.

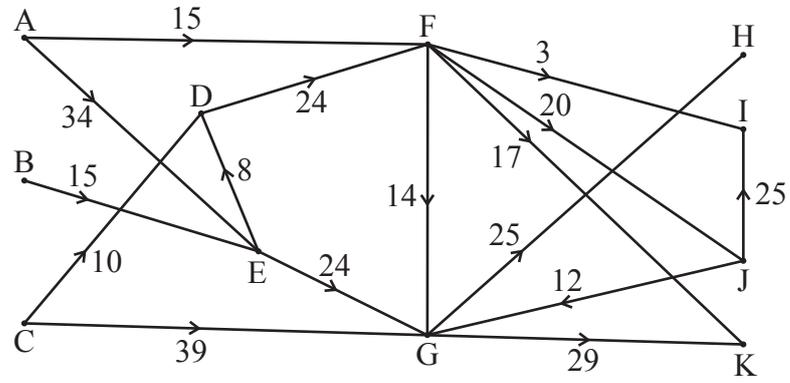
**INFORMATION**

- This document has **20** pages.

**ADVICE**

- Read each question carefully before you start your answer.

1(a)



1(b)


1(c)




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

<b>2(b)</b>

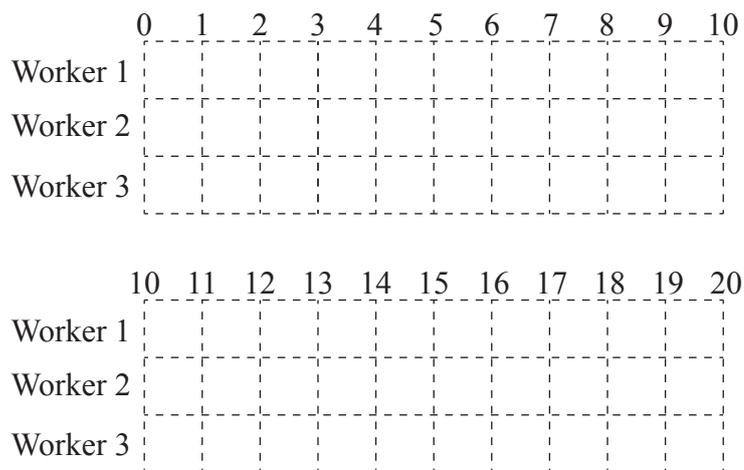
<b>2(c)</b>

3(a)


3(b)

Activity	Duration (hours)
A	
B	
C	
D	
E	
F	
G	
H	
I	
J	
K	

3(c)



There is a spare copy of this schedule on page 16

<b>4(a)</b>	
<b>4(b)</b>	
<b>4(c)</b>	

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5(d)

$Q$	$X$	$Y$	$Z$	$s_1$	$s_2$	RHS
1	$\frac{7}{4}$	0	-1	0	$\frac{3}{4}$	24
0	$\frac{7}{4}$	0	4	1	$-\frac{1}{4}$	40
0	$\frac{5}{4}$	1	0	0	$\frac{1}{4}$	8


$Q$	$X$	$Y$	$Z$	$s_1$	$s_2$	RHS

There is a spare copy of this tableau on page 16

5(e)


$P =$

$x =$

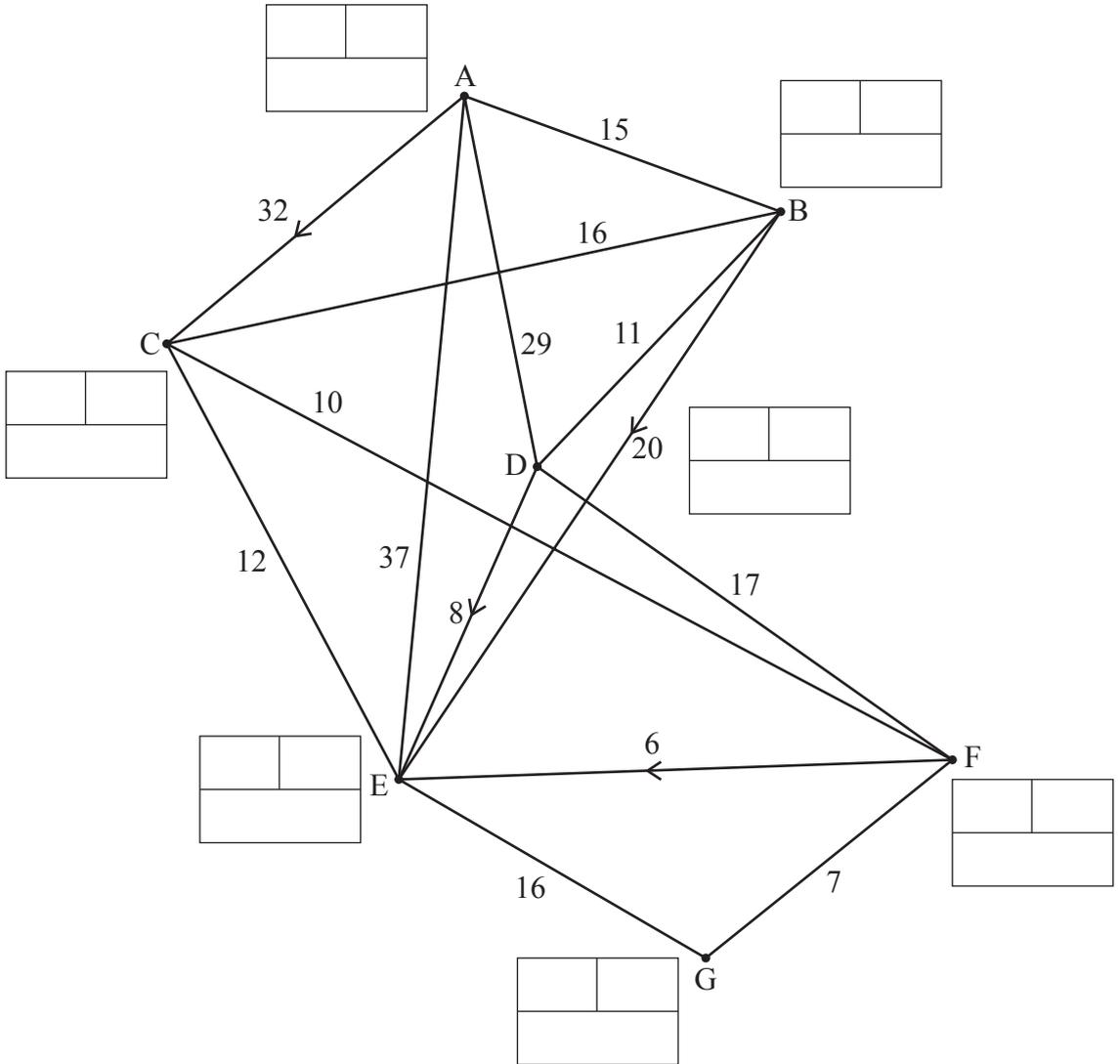
$y =$

$z =$

6(a)

Key:  
 Order of labelling → 


 ← Label  
 Working values (do not cross out) → 

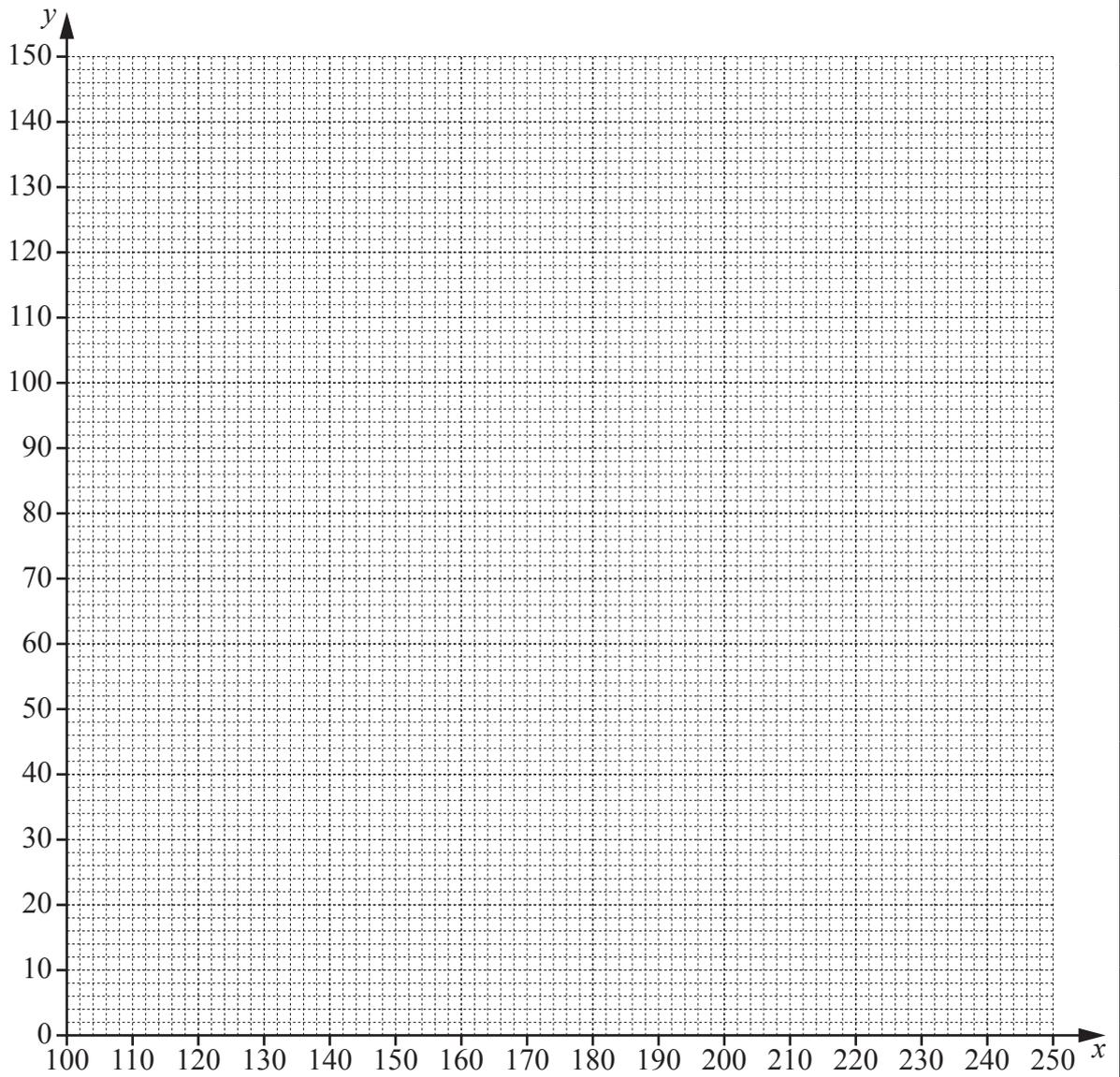
Shortest path from A to G:

<b>6(b)(i)</b>	
<b>6(b)(ii)</b>	
<b>6(b)(iii)</b>	
<b>6(c)(i)</b>	
<b>6(c)(ii)</b>	





7(c)



There is a spare copy of this graph on page 17

(answer space continued on the next page)



**3(c)** Spare copy of schedule for Q3(c)

	0	1	2	3	4	5	6	7	8	9	10
Worker 1											
Worker 2											
Worker 3											

	10	11	12	13	14	15	16	17	18	19	20
Worker 1											
Worker 2											
Worker 3											

**5(c)** Spare copy of tableau for Q5(c)

$Q$	$X$	$Y$	$Z$	$s_1$	$s_2$	RHS

**5(d)** Spare copy of tableau for Q5(d)

$Q$	$X$	$Y$	$Z$	$s_1$	$s_2$	RHS

7(c) Spare copy of graph for Q7(c)

