

## AS Level Further Mathematics B (MEI)

### Y413 Modelling with Algorithms

Printed Answer Booklet

Version 2

## Date – Morning/Afternoon

Time allowed: 1 hour 15 minutes

**You must have:**

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

**You may use:**

- a scientific or graphical calculator



First name

Last name

Centre number

Candidate number

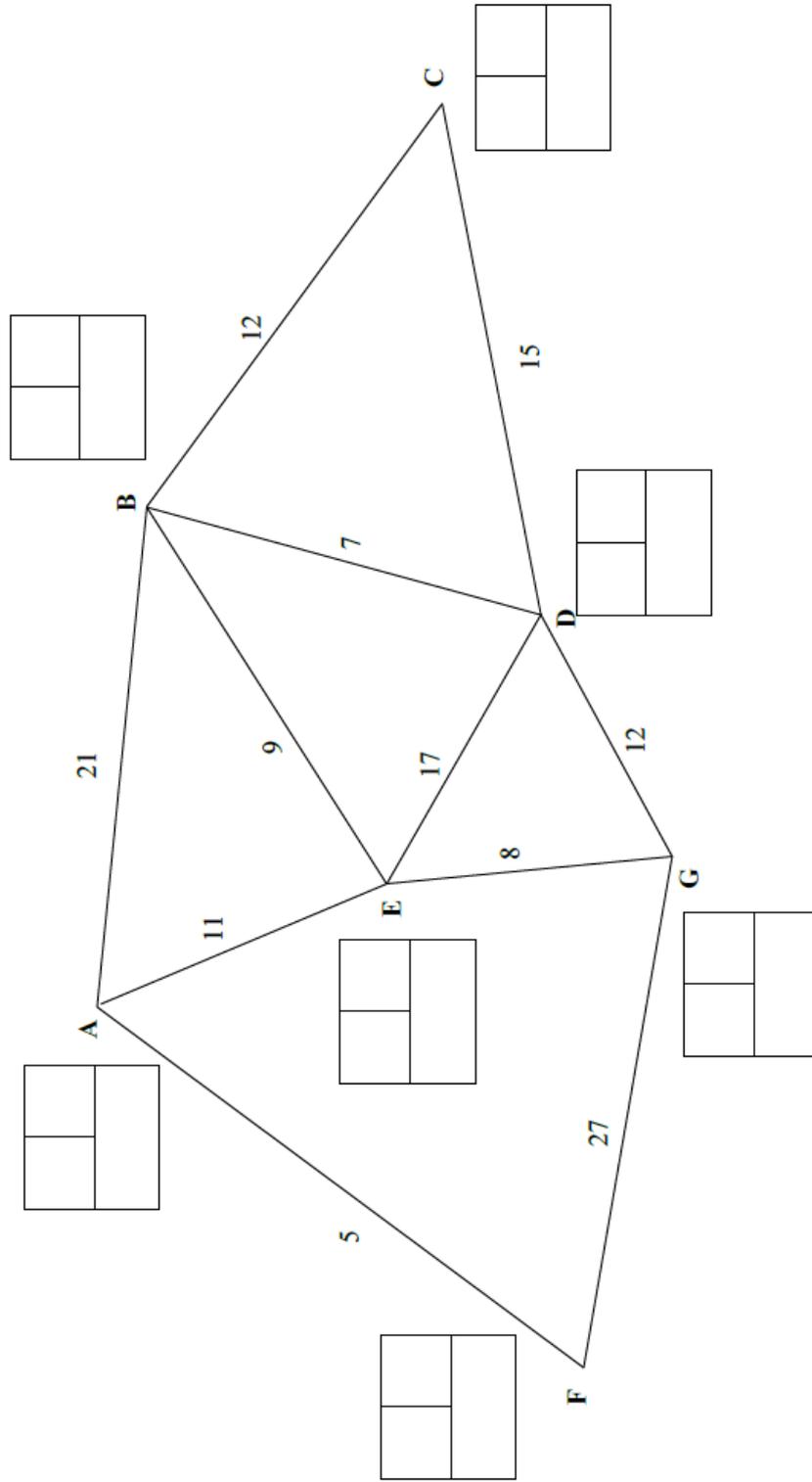
### INSTRUCTIONS

- The Question Paper will be found inside the Printed Answer Booklet.
- Use black ink. HB pencil may be used for graphs and diagrams only.
- Complete the boxes provided on the Printed Answer Booklet with your name, centre number and candidate number.
- 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).
- Do **not** write in the bar codes.
- 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 **16** pages. The Question Paper consists of **12** pages.

1



A spare copy of the diagram for question 1 can be found on page 13

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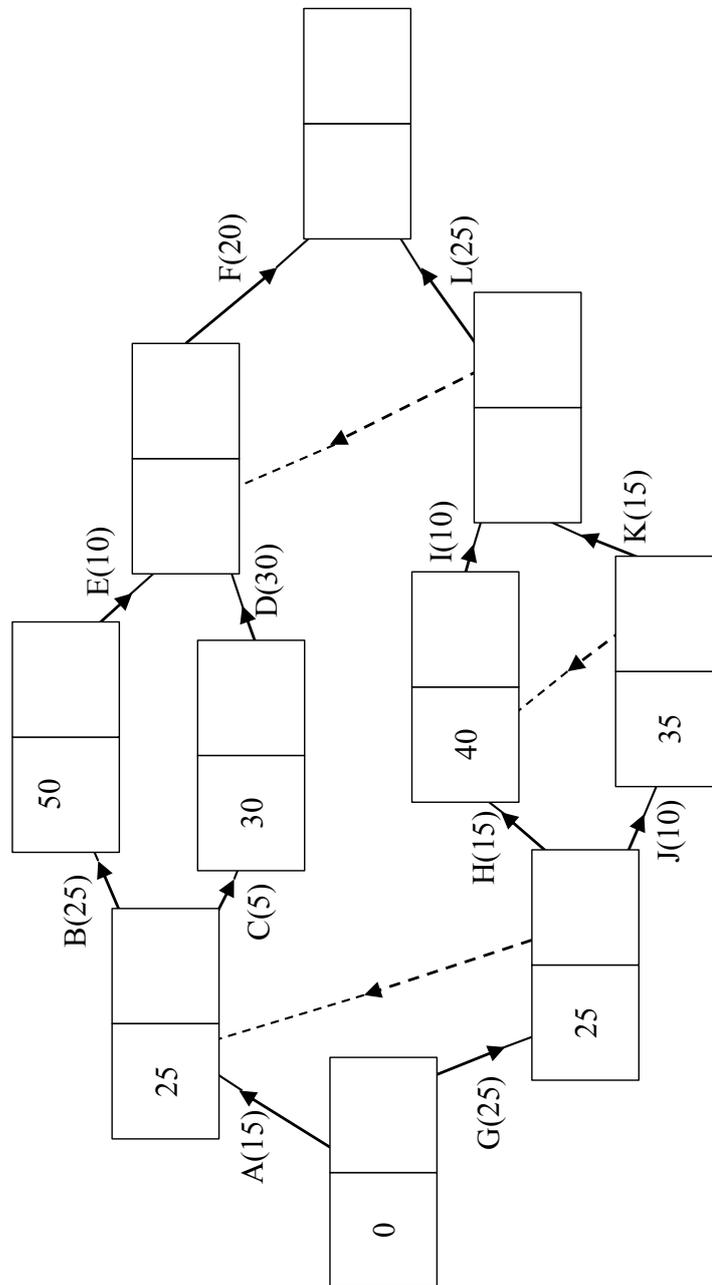
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<b>2 (i)</b>	
<b>2 (ii)</b>	
<b>2 (iii)</b>	
<b>2 (iv)</b>	

3 (i)



A spare copy of the diagram for question 3 (i) can be found on page 14

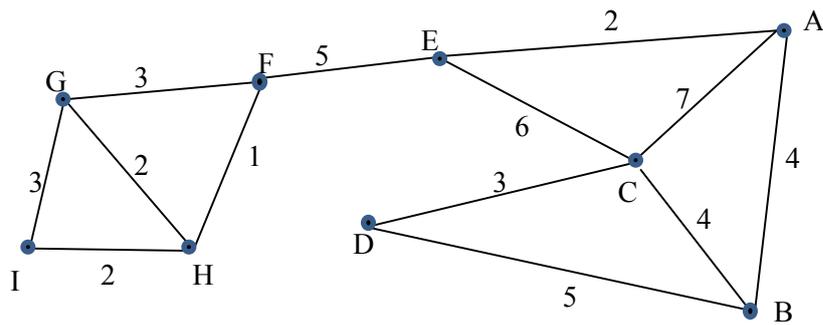
(answer space continued on next page)

<b>3 (i) (continued)</b>	
<b>3 (ii)</b>	
<b>3(iii)</b>	

**DO NOT WRITE IN THIS SPACE**

4 (i)  
(4)

	A	B	C	D	E	F	G	H	I
A		4	7		2				
B	4		4	5					
C	7	4		3	6				
D		5	3						
E	2		6			5			
F					5		3	1	
G						3		2	3
H						1	2		2
I							3	2	



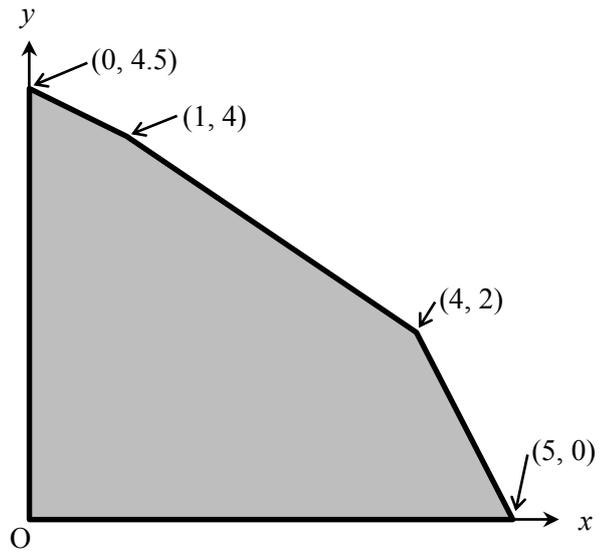
(answer space continued on next page)



<b>4 (ii)</b>	

**DO NOT WRITE IN THIS SPACE**

5 (i)



5 (ii)

5 (iii)  
(A)

<i>P</i>	<i>x</i>	<i>y</i>	<i>s</i> <sub>1</sub>	<i>s</i> <sub>2</sub>	<i>s</i> <sub>3</sub>	RHS
1	0	0	0	$\frac{1}{6}$	0	$\frac{7}{3}$
0	0	0	1	$-\frac{3}{4}$	$\frac{1}{4}$	1
0	1	0	0	$-\frac{1}{4}$	$\frac{3}{4}$	4
0	0	1	0	$\frac{1}{2}$	$-\frac{1}{2}$	2

<i>P</i>	<i>x</i>	<i>y</i>	<i>s</i> <sub>1</sub>	<i>s</i> <sub>2</sub>	<i>s</i> <sub>3</sub>	RHS

Spare copy of tableau

<i>P</i>	<i>x</i>	<i>y</i>	<i>s</i> <sub>1</sub>	<i>s</i> <sub>2</sub>	<i>s</i> <sub>3</sub>	RHS

5 (iii)  
(B)

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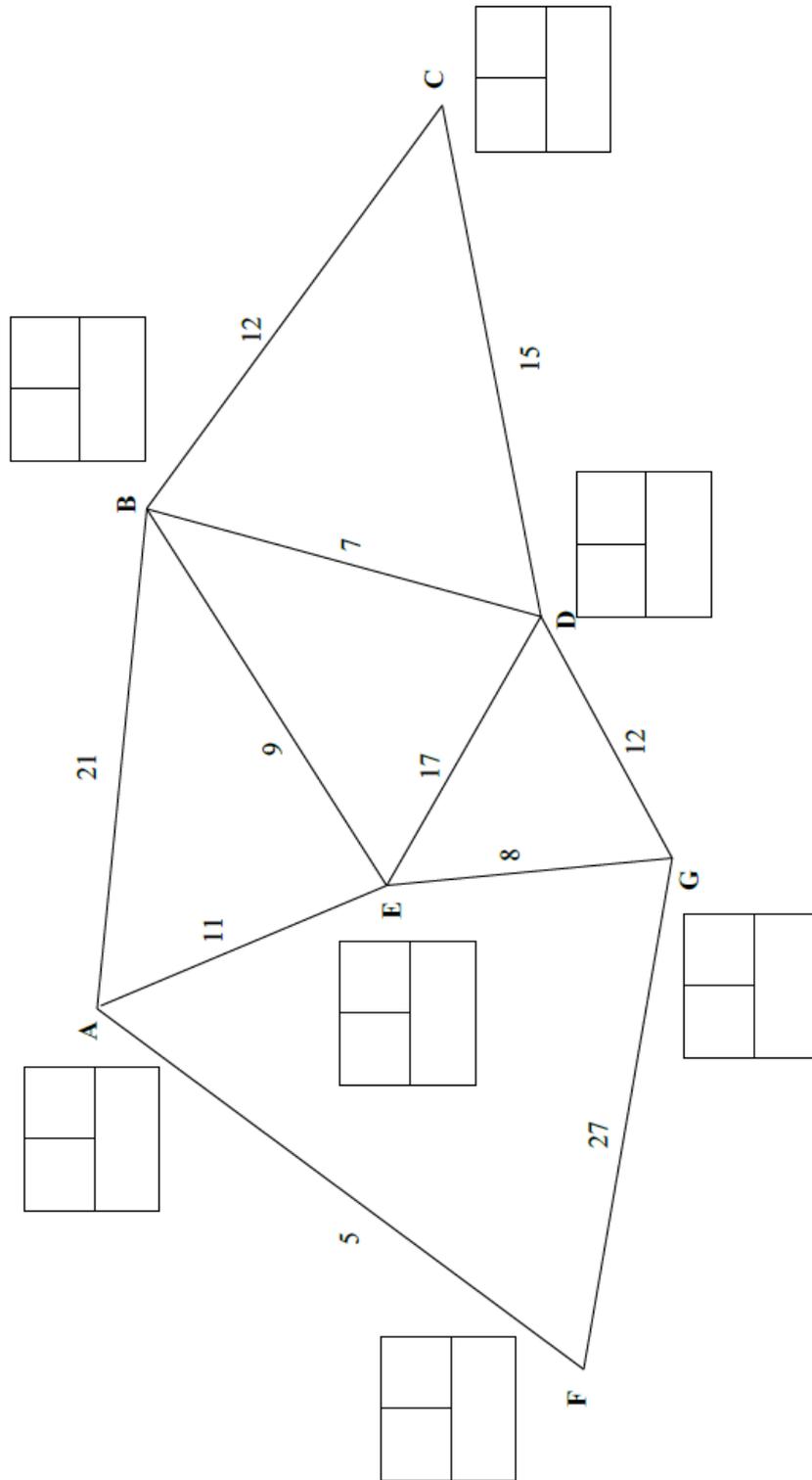


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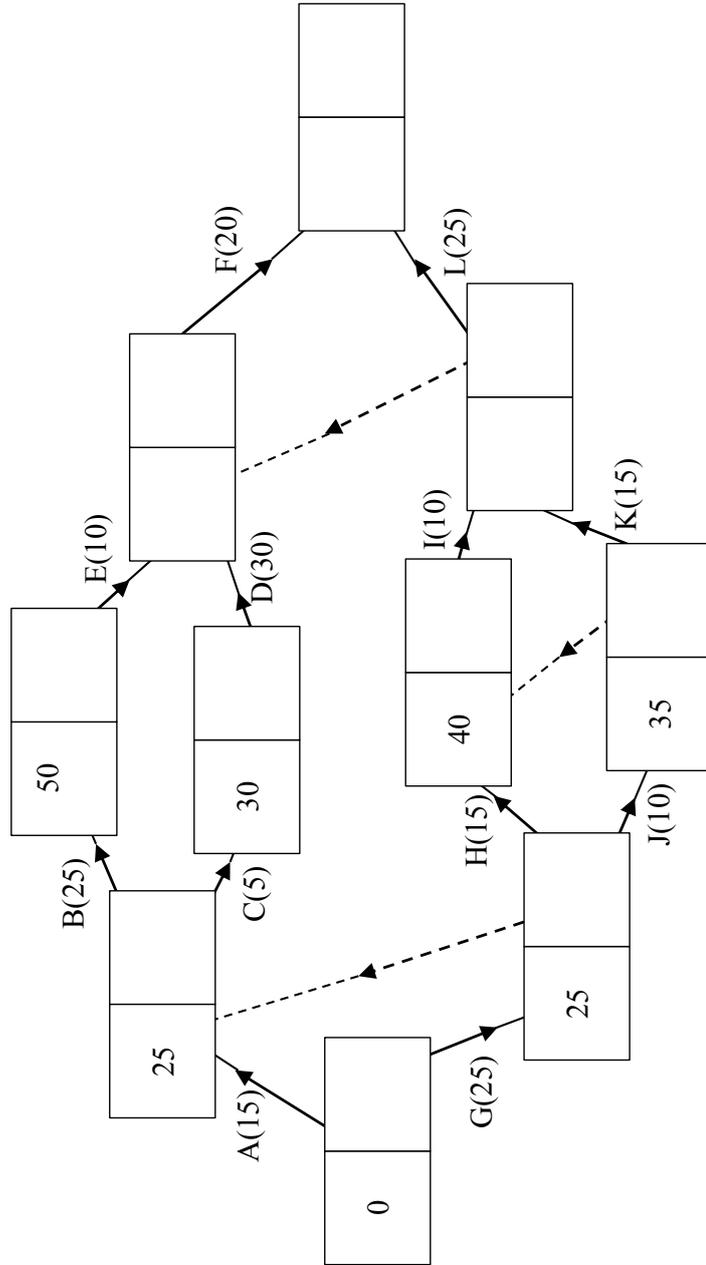
<b>6 (i)</b>	
<b>6 (ii)</b>	
<b>6 (iii)</b>	

<b>6 (iv)</b>	
<b>6 (v)</b>	
<b>6 (vi)</b>	

Spare copy of diagram for question 1



Spare copy of diagram for question 3 (i)



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