

Please check the examination details below before entering your candidate information

Candidate surname

Other names

**Pearson Edexcel
Level 3 GCE**

Centre Number

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Candidate Number

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Monday 24 June 2019

Morning (Time: 1 hour 30 minutes)

Paper Reference **9FM0/3D**

Further Mathematics

Advanced

Paper 3D: Decision Mathematics 1

Answer Book

Do not return the question paper with the answer book.

Total Marks

Turn over ►

P61182A

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1/1/1/1/1/1/C2/1/



Pearson

1. 2.1 1.7 3.0 1.9 3.2 1.2 3.3 1.4 1.5 0.2

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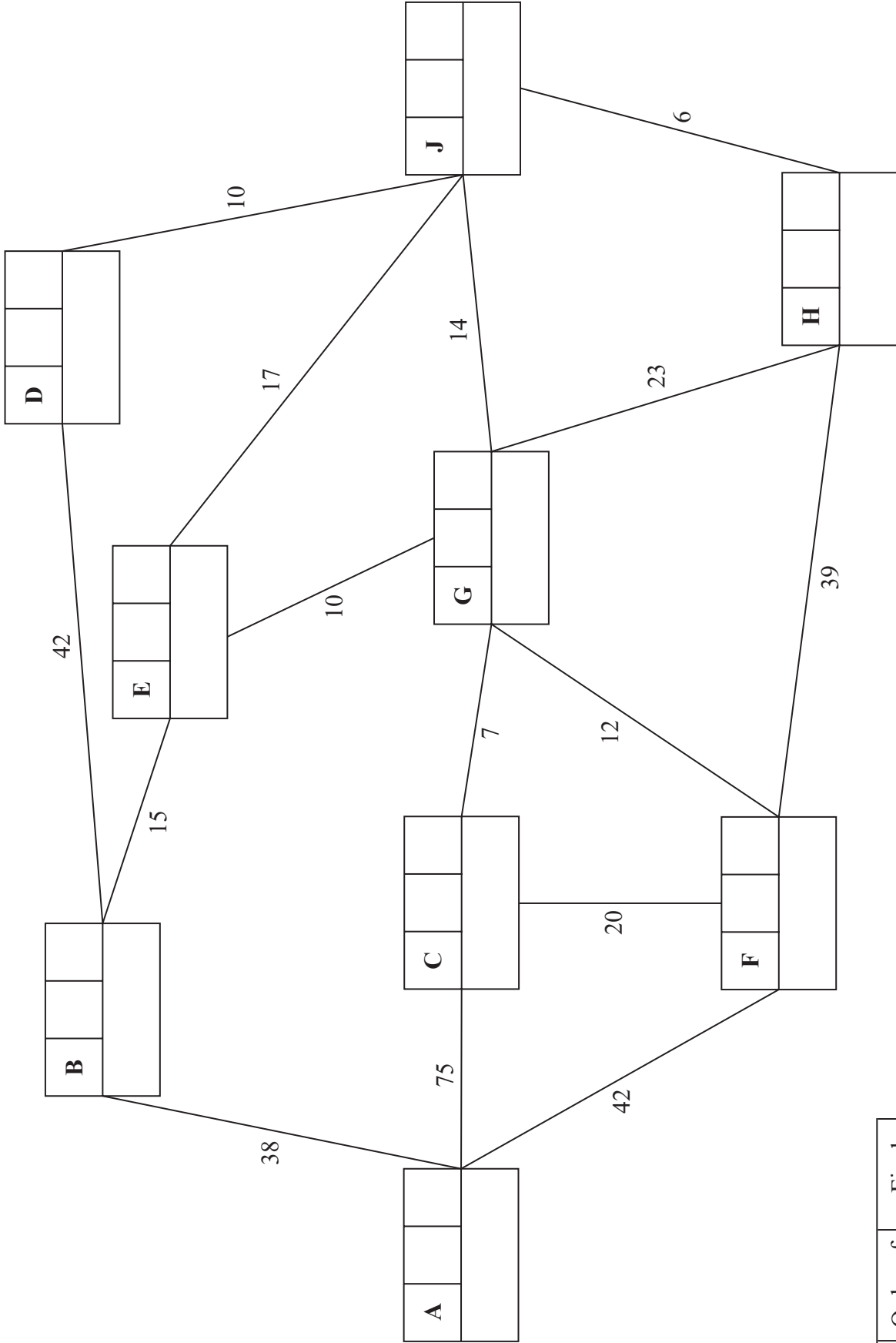


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2.1 1.7 3.0 1.9 3.2 1.2 3.3 1.4 1.5 0.2



2.



Key:

Vertex	Order of labelling	Final value
Working values		

Shortest path from A to D:

Length of shortest path from A to D:

Question 2 continued

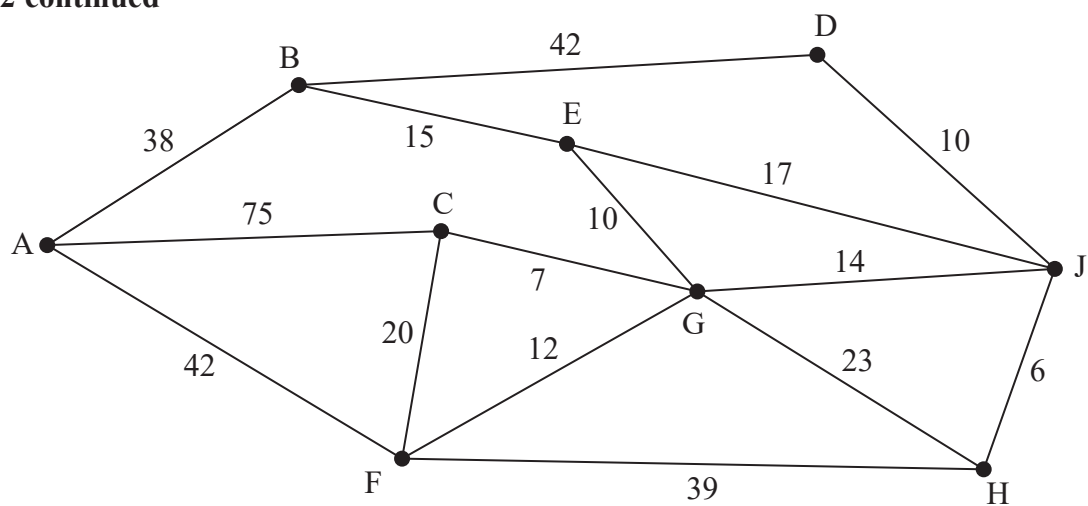


Figure 1

Question 2 continued

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Question 2 continued

Lined area for writing answers.

(Total for Question 2 is 14 marks)



3. (a)

Initial distance table

	A	B	C	D	E
A					
B					
C					
D					
E					

Initial route table

	A	B	C	D	E
A					
B					
C					
D					
E					

(b) 1st iteration

Distance table

	A	B	C	D	E
A					
B					
C					
D					
E					

Route table

	A	B	C	D	E
A					
B					
C					
D					
E					

2nd iteration

Distance table

	A	B	C	D	E
A					
B					
C					
D					
E					

Route table

	A	B	C	D	E
A					
B					
C					
D					
E					

3rd iteration

Distance table

	A	B	C	D	E
A					
B					
C					
D					
E					

Route table

	A	B	C	D	E
A					
B					
C					
D					
E					

Turn to page 11 for spare copies of these tables if you need to correct your work.



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Question 3 continued

Lined area for writing the answer to Question 3.



Question 3 continued

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Question 3 continued**Only use these tables if you need to correct your work.**

(a)

Initial distance table

	A	B	C	D	E
A					
B					
C					
D					
E					

Initial route table

	A	B	C	D	E
A					
B					
C					
D					
E					

(b) 1st iteration

Distance table

	A	B	C	D	E
A					
B					
C					
D					
E					

Route table

	A	B	C	D	E
A					
B					
C					
D					
E					

2nd iteration

Distance table

	A	B	C	D	E
A					
B					
C					
D					
E					

Route table

	A	B	C	D	E
A					
B					
C					
D					
E					

3rd iteration

Distance table

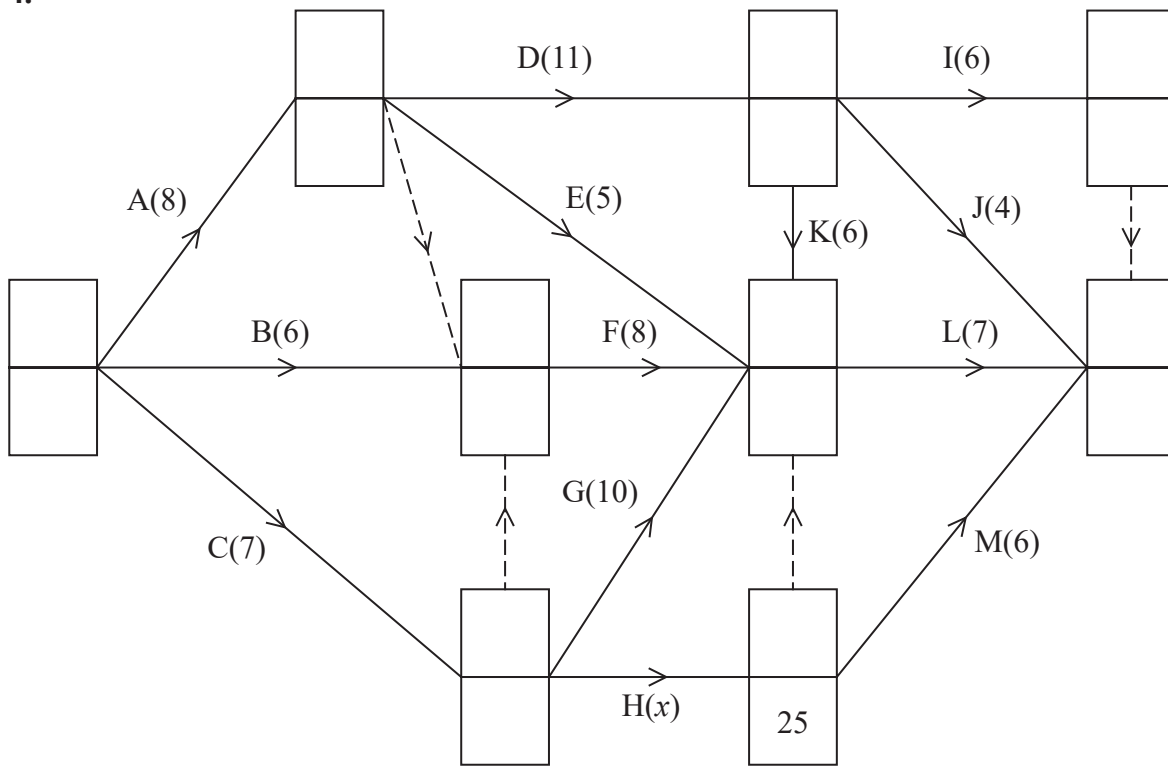
	A	B	C	D	E
A					
B					
C					
D					
E					

Route table

	A	B	C	D	E
A					
B					
C					
D					
E					

(Total for Question 3 is 14 marks)

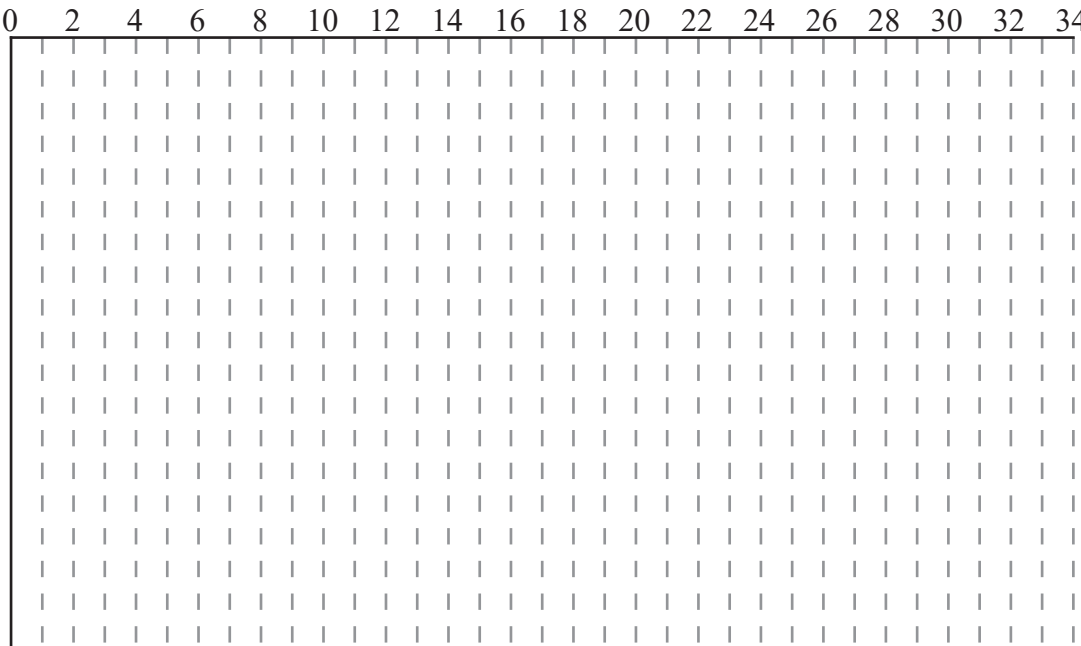
4.

**Key:**Early
event
timeLate
event
time**Diagram 1**

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Question 4 continued

Handwriting practice area with 20 horizontal lines.



Grid 1

(Total for Question 4 is 9 marks)



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5.



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Question 5 continued

Lined area for writing the answer to Question 5.

(Total for Question 5 is 6 marks)



6.

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Question 6 continued

(b)

[illegible]

Only use the tableau below if you need to correct the above tableau.

[illegible]

Question 6 continued

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DO NOT WRITE IN THIS AREA



DO NOT WRITE IN THIS AREA

Question 6 continued

Lined area for writing answers.

(Total for Question 6 is 12 marks)



7.

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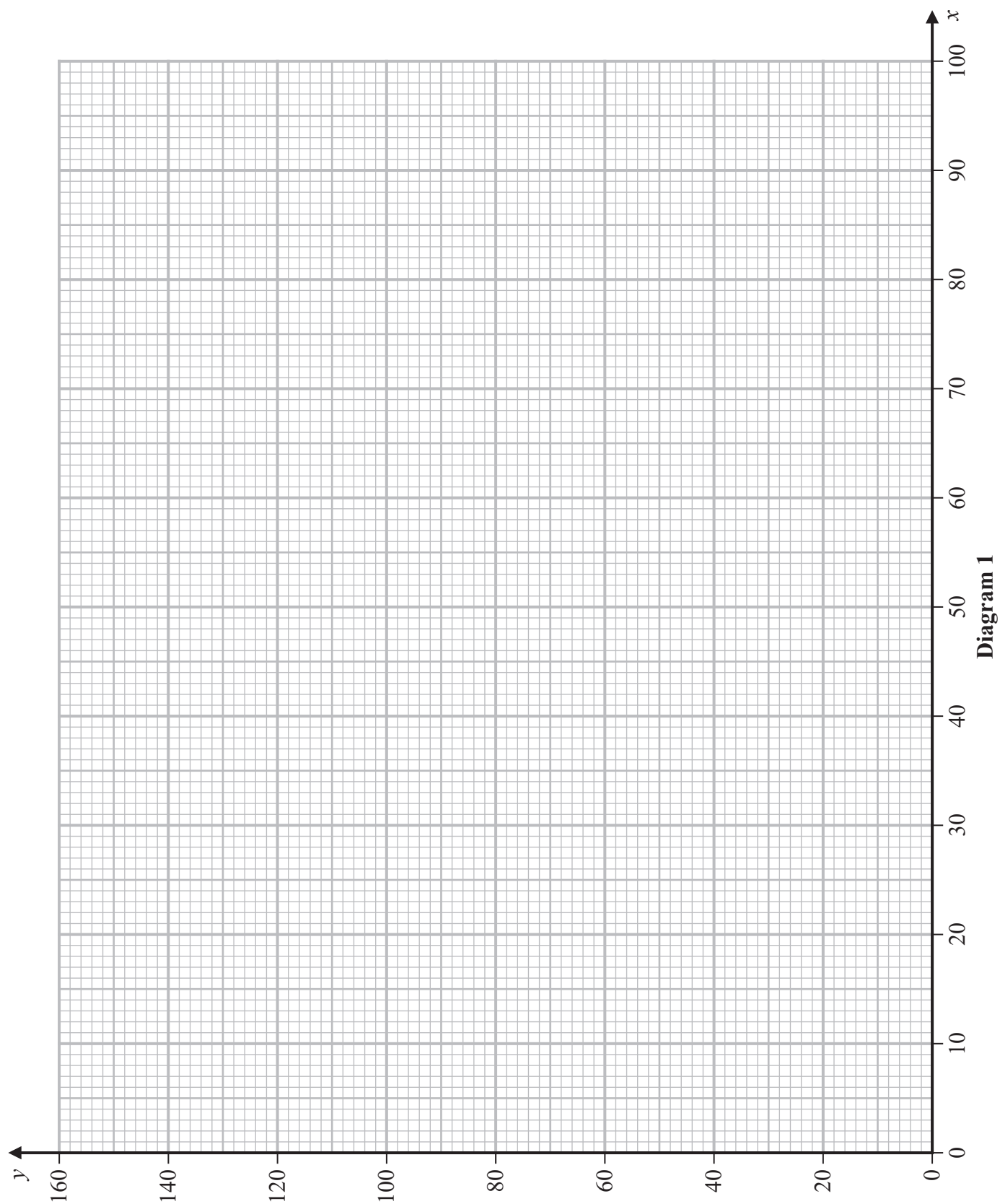
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Question 7 continued

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Question 7 continued

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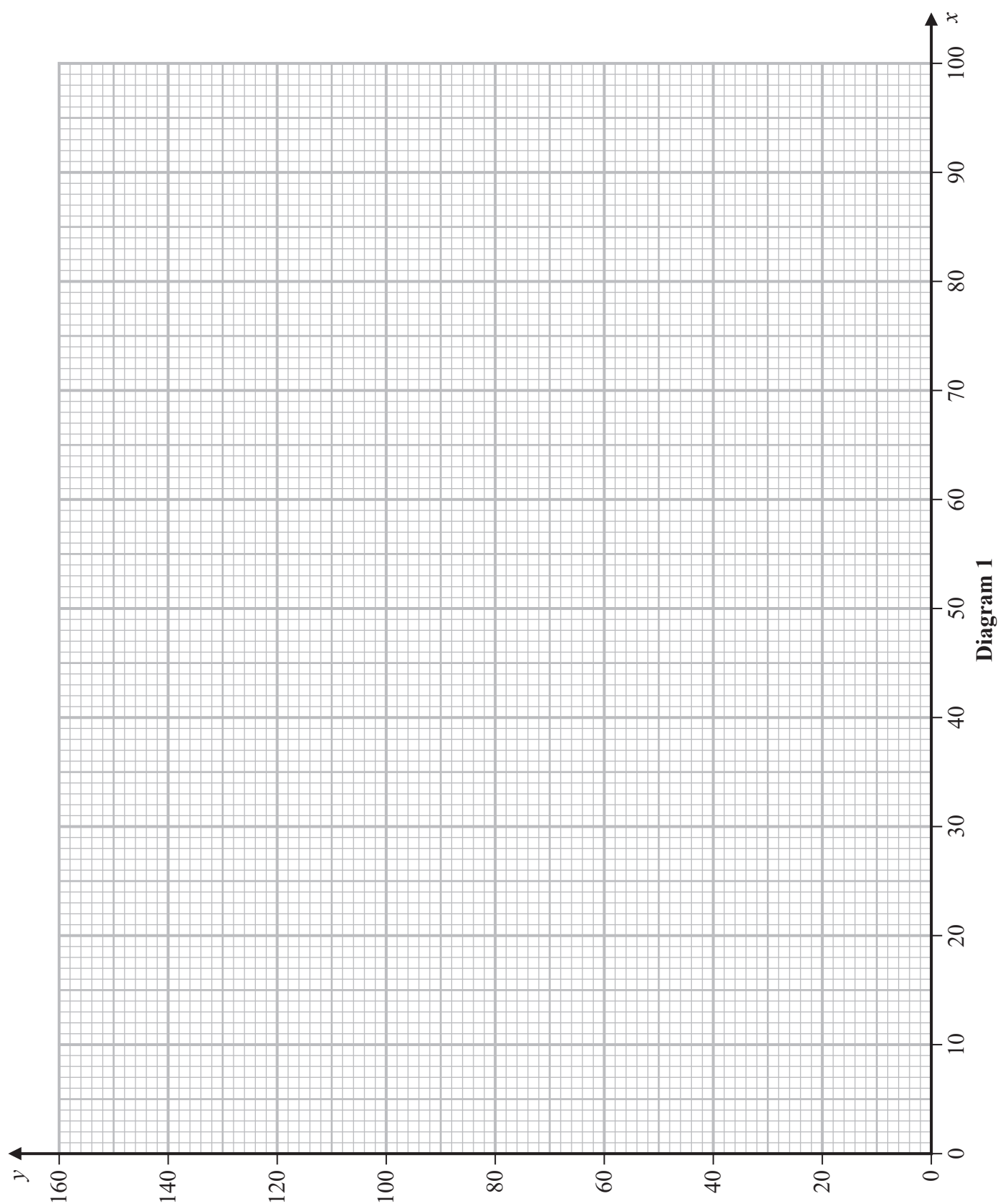
Question 7 continued

Lined area for writing the answer to Question 7.



Question 7 continued

Only use these axes if you need to correct your work.



(Total for Question 7 is 12 marks)

TOTAL FOR PAPER IS 75 MARKS

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