Centre No.						Paper Reference							Surname	Initial(s)
Candidate No.						6	6	8	9	/	0	1	Signature	

Paper Reference(s)

6689/01

Edexcel GCE

Decision Mathematics D1

Advanced/Advanced Subsidiary

Friday 17 May 2013 – Morning

Examiner's use only

Team Leader's use only

Question Number	Leave Blank
1	
2	
3	
4	
5	
6	
7	
Total	

Answer Book

Do not return the question paper with the answer book

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P 4 1 8 2 7 A 0 1 1 6

Turn over

PEARSON

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1.

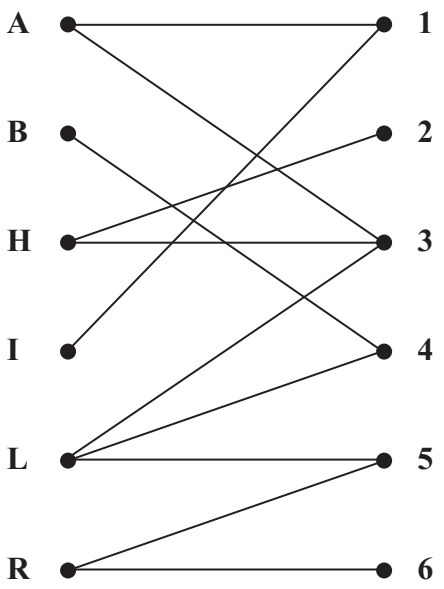


Figure 1

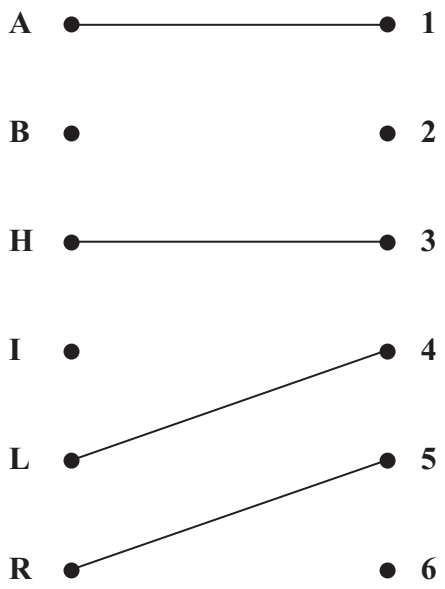


Figure 2

P 4 1 8 2 7 A 0 2 1 6

Leave blank

Question 1 continued

A ●	● **1**	**A** ●	● **1**
B ●	● **2**	**B** ●	● **2**
H ●	● **3**	**H** ●	● **3**
I ●	● **4**	**I** ●	● **4**
L ●	● **5**	**L** ●	● **5**
R ●	● **6**	**R** ●	● **6**

Q1

(Total 7 marks)

Leave blank

2.

Leave blank

Question 2 continued

(Total 11 marks)

Q2

P 4 1 8 2 7 A 0 5 1 6

Turn over

Leave blank

3. (a)

	A	B	C	D	E	F
A	-	15	6	9	-	-
B	15	-	12	-	14	-
C	6	12	-	7	10	-
D	9	-	7	-	11	17
E	-	14	10	11	-	5
F	-	-	-	17	5	-

Order of arcs: _____

(b)

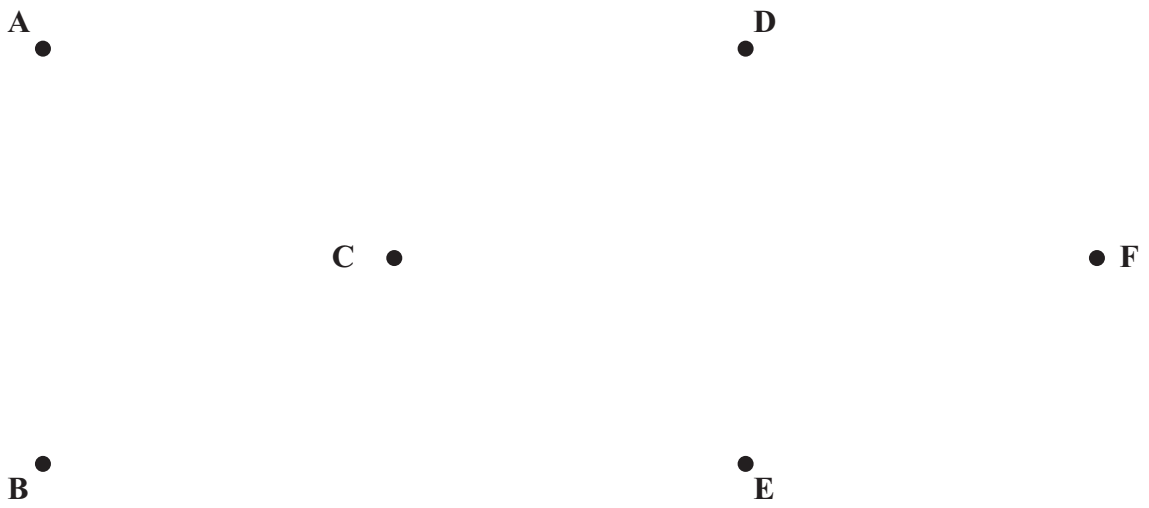


Diagram 1

P 4 1 8 2 7 A 0 6 1 6

Leave blank

Question 3 continued

(c)

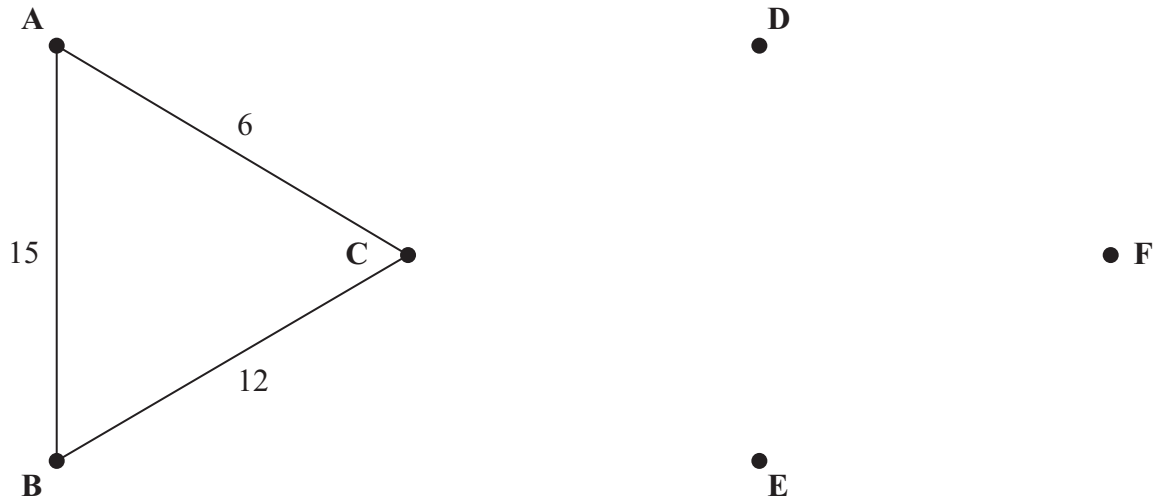


Diagram 2

(d) _____

_____

_____

_____

_____

_____

_____

_____

(e) Minimum time needed: _____

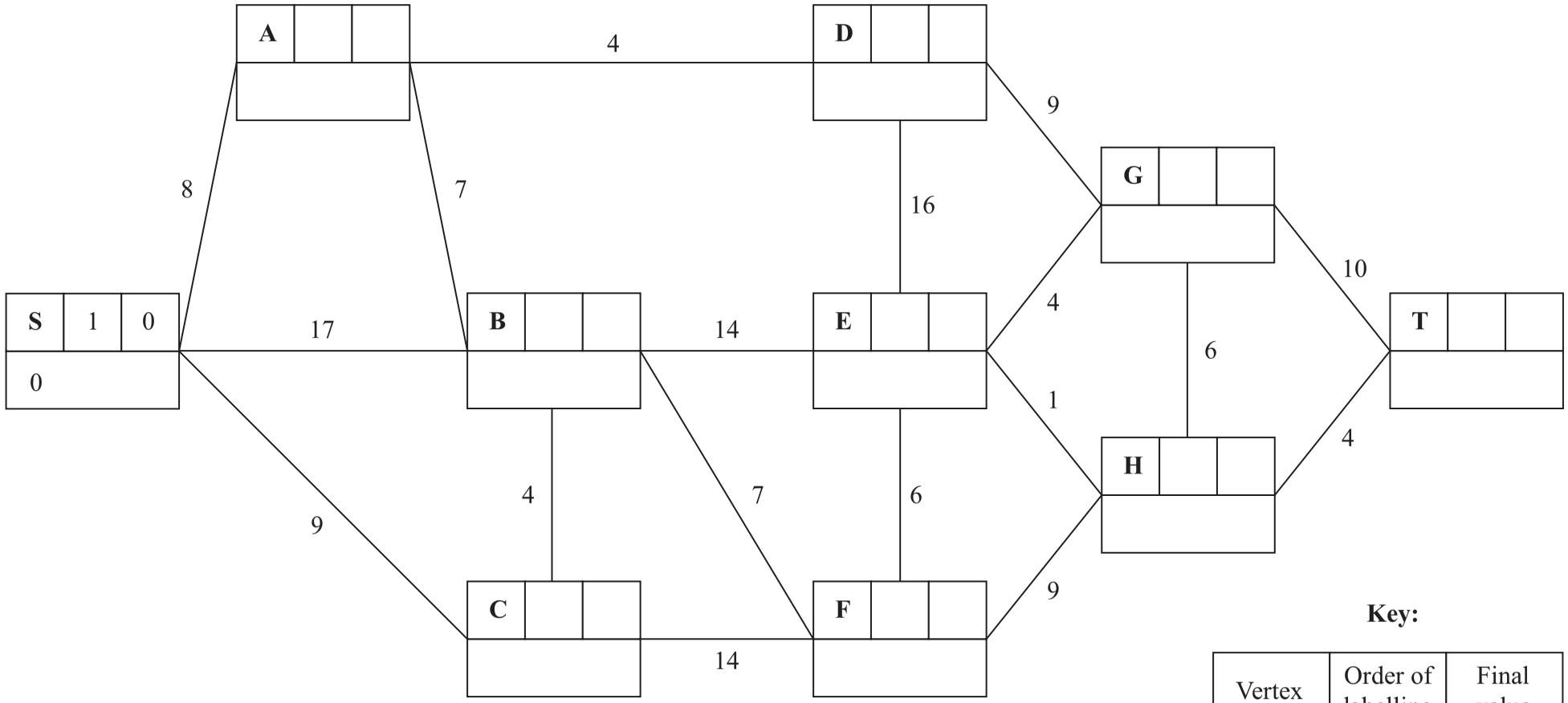
Q3

(Total 10 marks)

P 4 1 8 2 7 A 0 7 1 6

Turn over

4. (a)



Key:

Vertex	Order of labelling	Final value
Working values (in order)		

Leave blank

P 4 1 8 2 7 A 0 8 1 6

Question 4 continued

Shortest path from S to T: _____

Length of shortest path from S to T: _____

(b) _____

_____

_____

Shortest path from S to T **via F**: _____

Length of shortest path from S to T **via F**: _____

(Total 8 marks)

Q4

Leave blank

Leave blank

5.

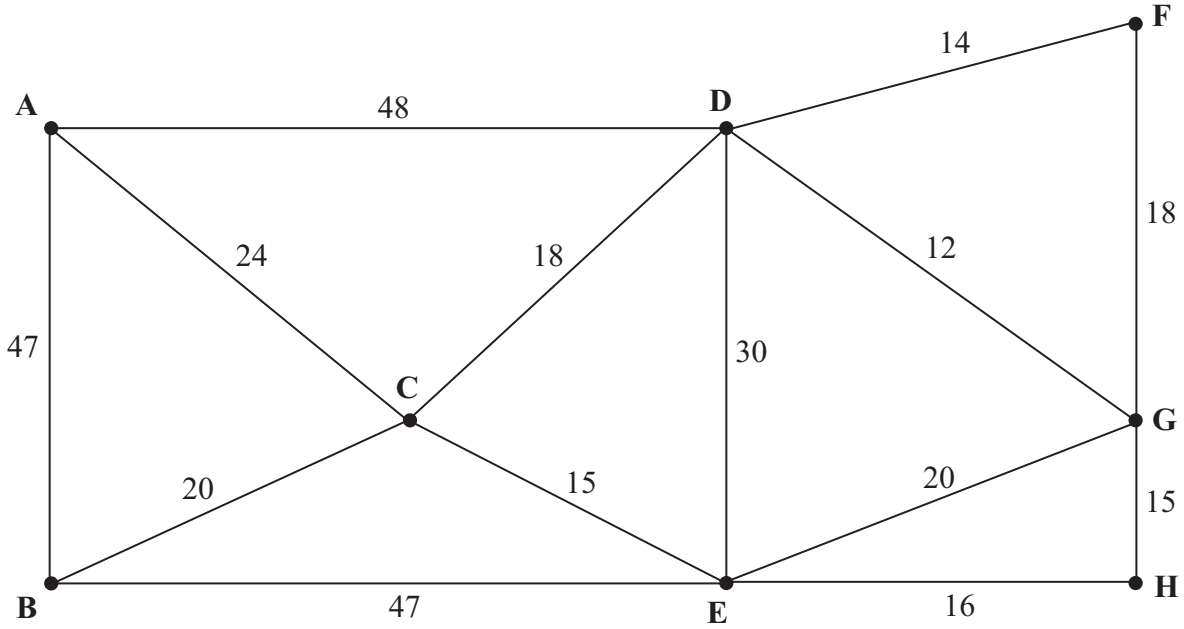


Figure 4

[*The total weight of the network is 344 miles*]

P 4 1 8 2 7 A 0 1 0 1 6

Leave blank

Question 5 continued

(Total 10 marks)

Q5

P 4 1 8 2 7 A 0 1 1 1 6

Turn over

Leave blank

6.

Leave blank

Question 6 continued

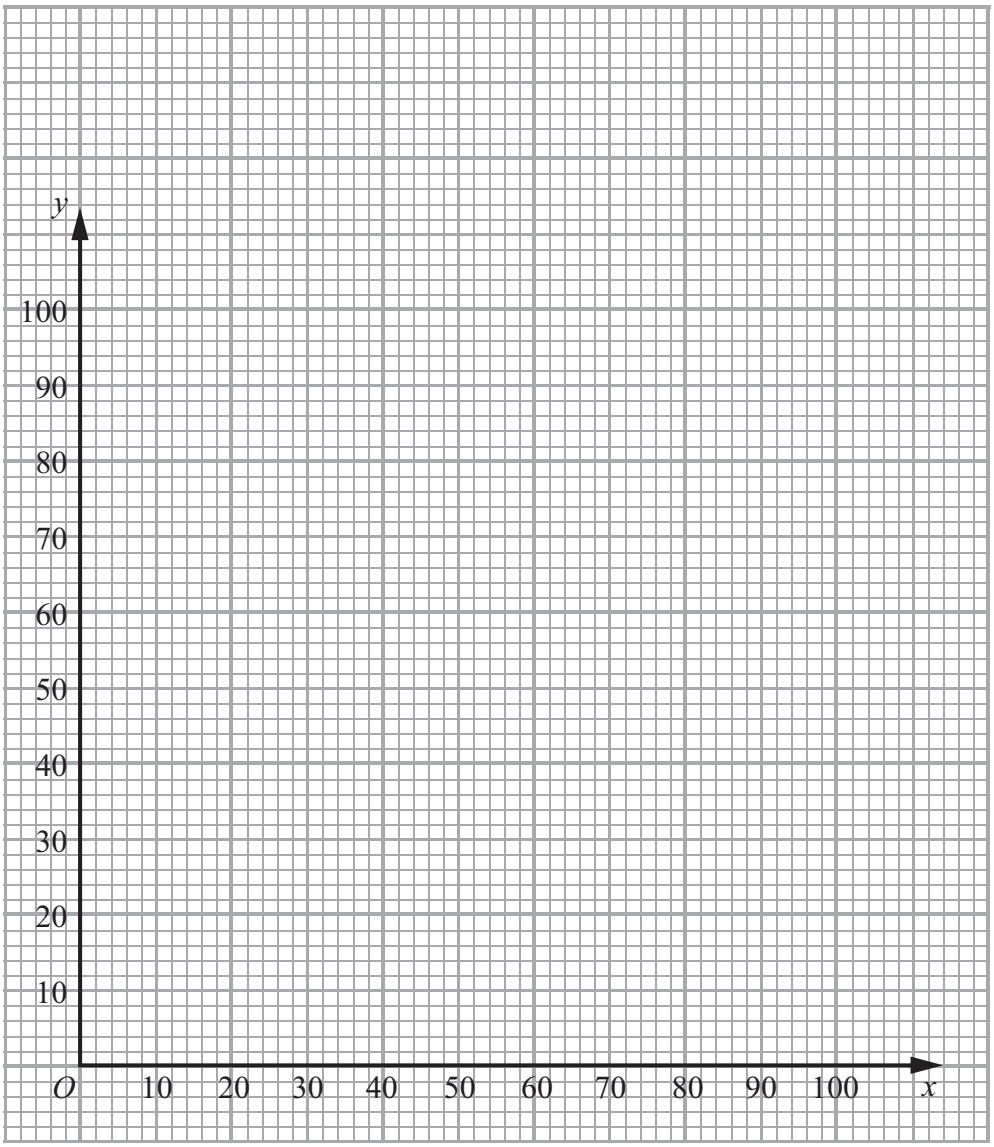


Diagram 1

Q6

(Total 12 marks)

P 4 1 8 2 7 A 0 1 3 1 6

Turn over

Leave blank

7. (a)

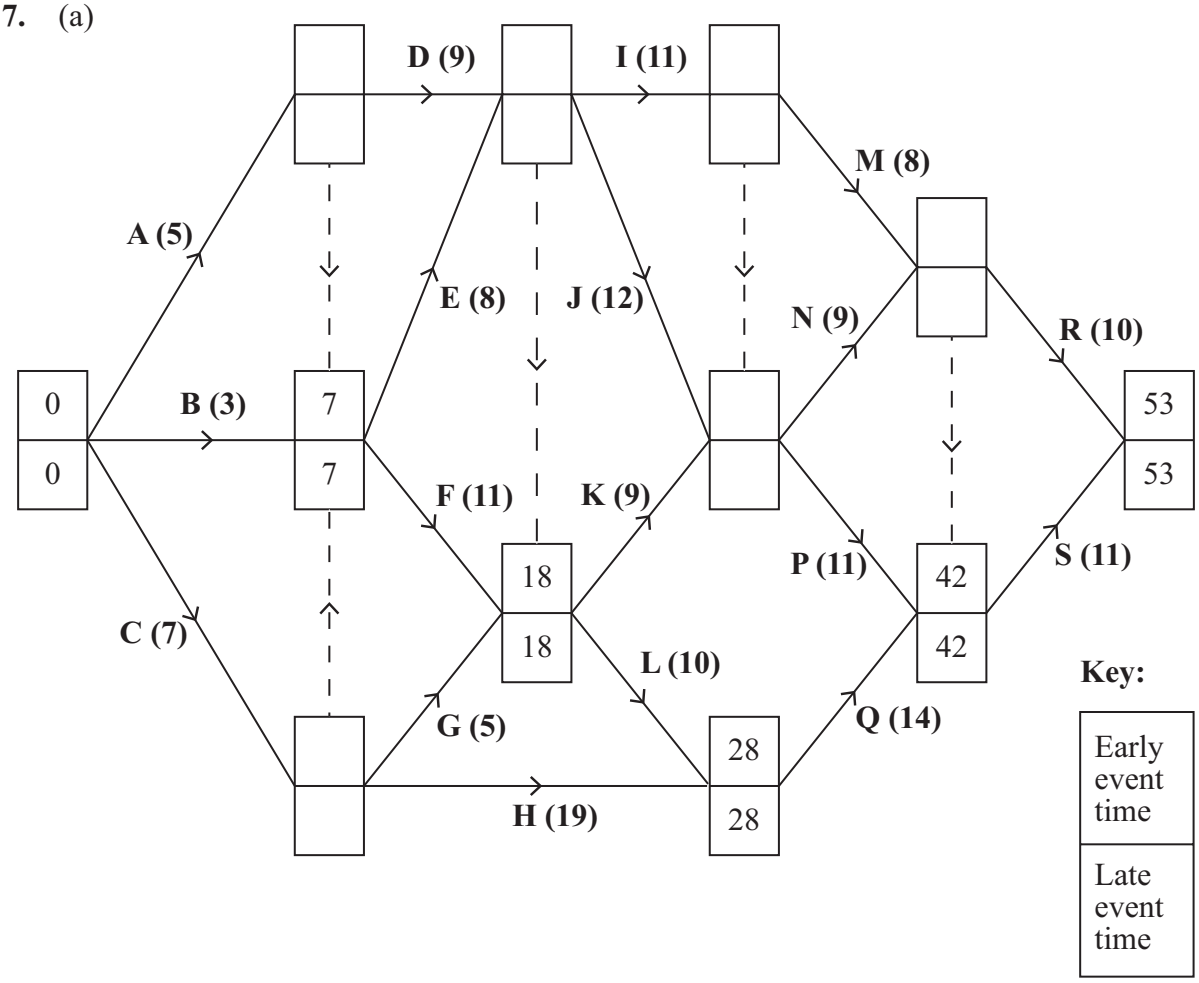


Diagram 1

(b)

(c)

(d)

P 4 1 8 2 7 A 0 1 4 1 6

Leave blank

Question 7 continued

(e)

represents the total float on each activity

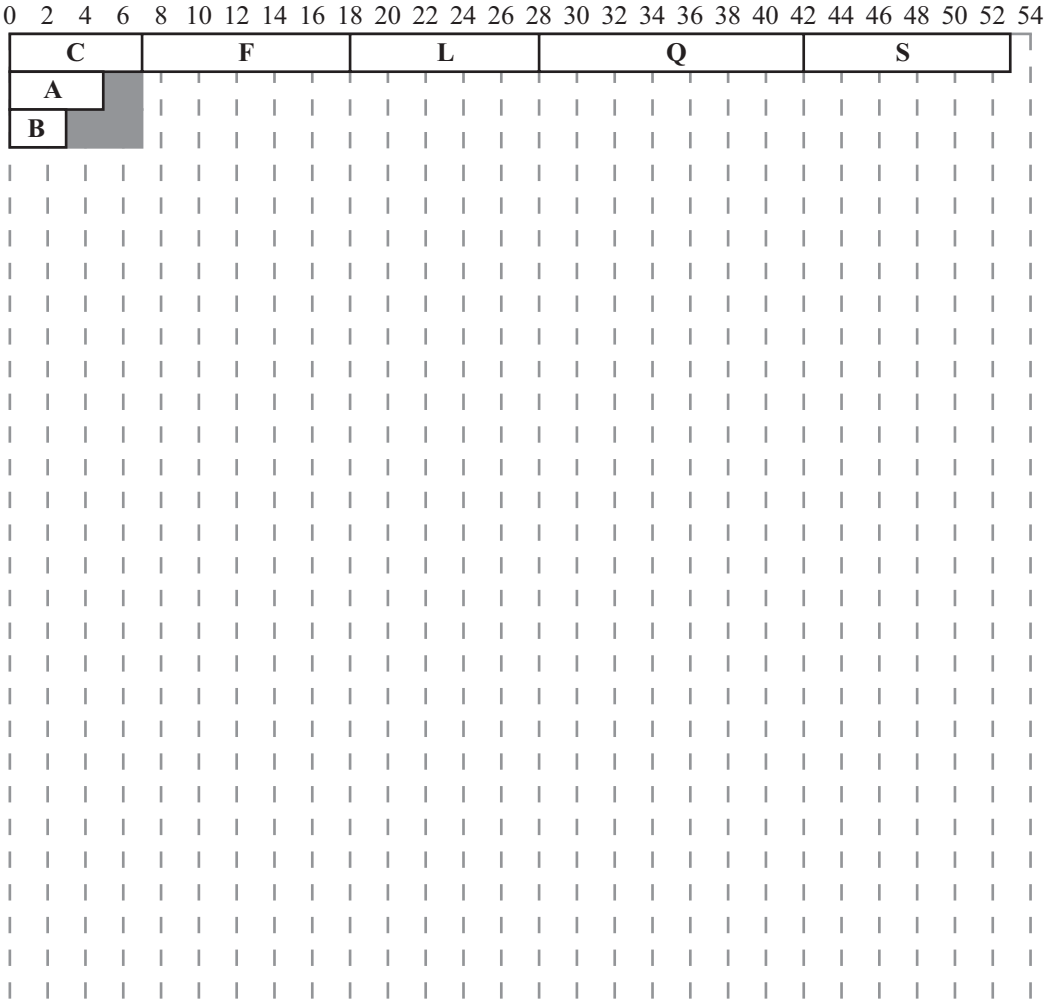


Diagram 2

(f) _____

(g) _____

Q7

(Total 17 marks)

TOTAL FOR PAPER: 75 MARKS

END

P 4 1 8 2 7 A 0 1 5 1 6