OCR
RECOGNISING ACHIEVEMENT

ADVANCED SUBSIDIARY GCE

MATHEMATICS (MEI)

4771

Decision Mathematics 1

PRINTED ANSWER BOOK

Wednesday 17 June 2009
Morning

Duration: 1 hour 30 minutes

OCE/T67883

Candidate Forename		Candidate Surname	

Centre Number						Candidate Number				

INSTRUCTIONS TO CANDIDATES

- Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Write your answers in the spaces provided on the answer book. If extra paper is required use a 4 page answer booklet making sure that you label your work clearly. Attach any extra answer booklets to this Printed Answer Book.

INFORMATION FOR CANDIDATES

- This document consists of **12** pages. Any blank pages are indicated.

1 **(i)**

(ii)

Vertex 6 ● ● Vertex 1

Vertex 5 ● ● Vertex 2

Vertex 4 ● ● Vertex 3

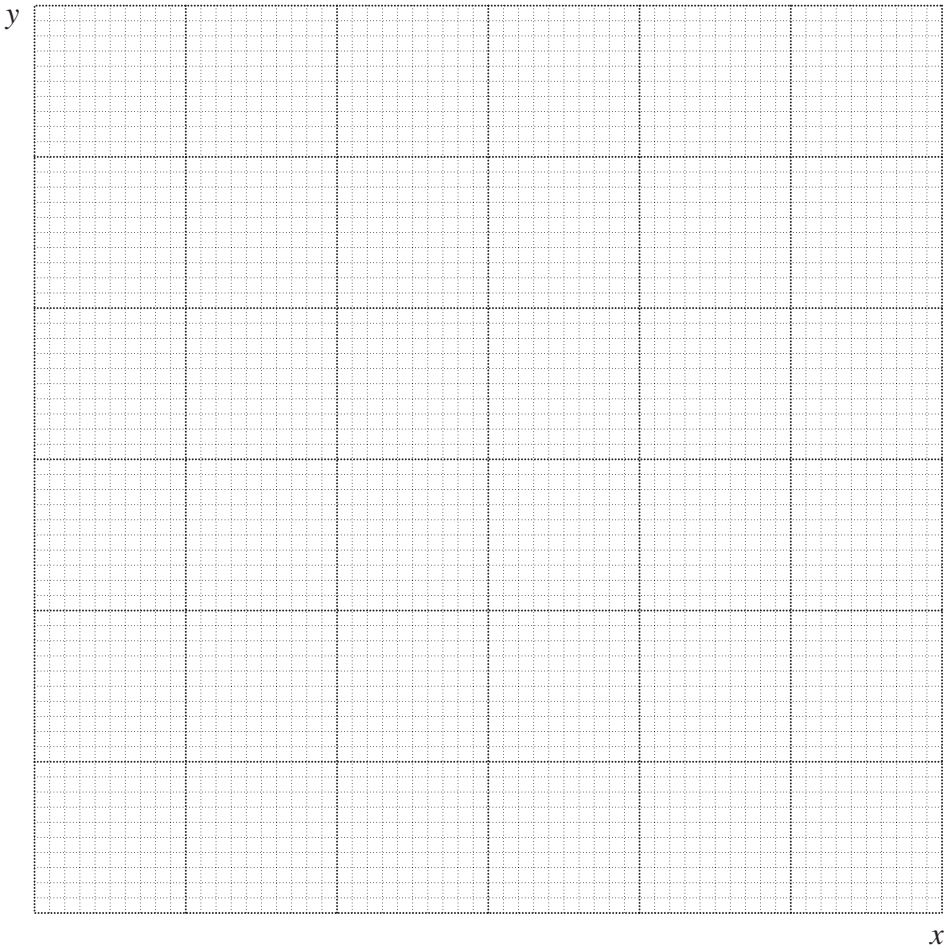
(iii)

2 **(i)**

(ii)

(iii)

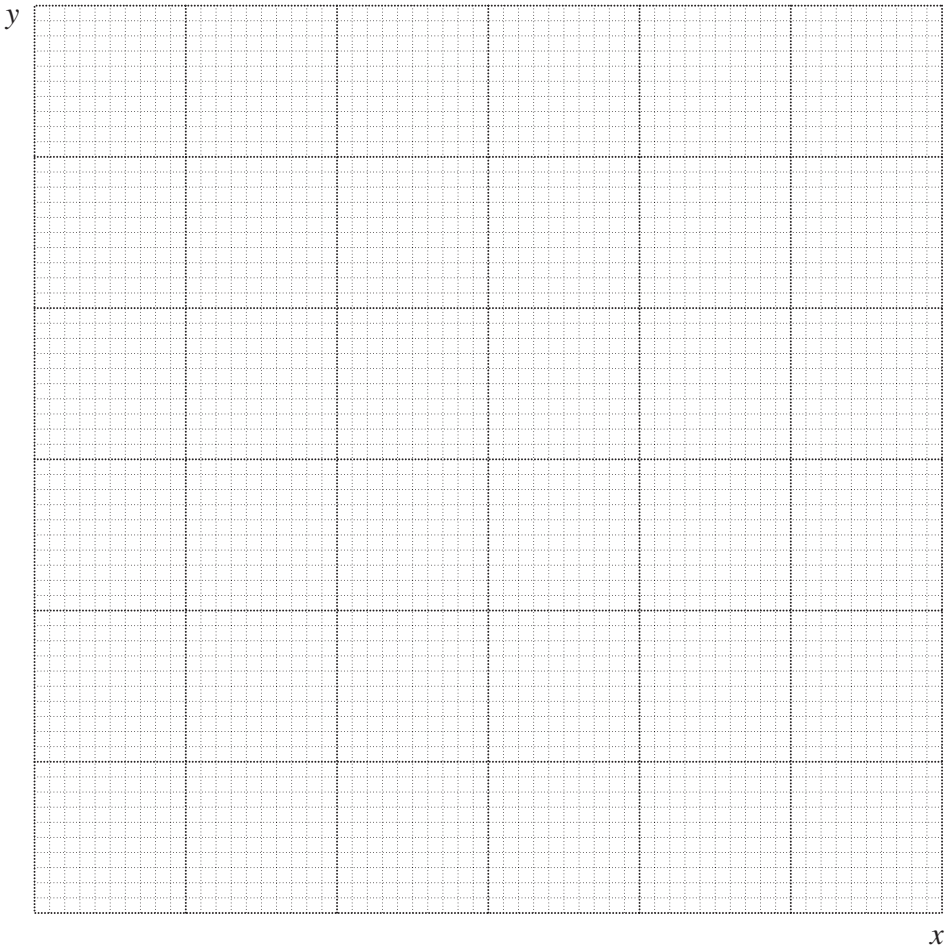
3 **(i)**



Solution:

(ii)

3 (i) SPARE COPY OF GRAPH PAPER FOR QUESTION 3(i)



Solution:

4 **(i)**

(ii) Random digits

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

Simulation runs

run 1	A
run 2	A
run 3	A
run 4	A
run 5	A
run 6	A
run 7	A
run 8	A
run 9	A
run 10	A

Probability of exiting at A: …… Probability of exiting at B: ……

Mean number of runs between vertices: ……

(iii)

(iv) Random digits

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

Simulation runs

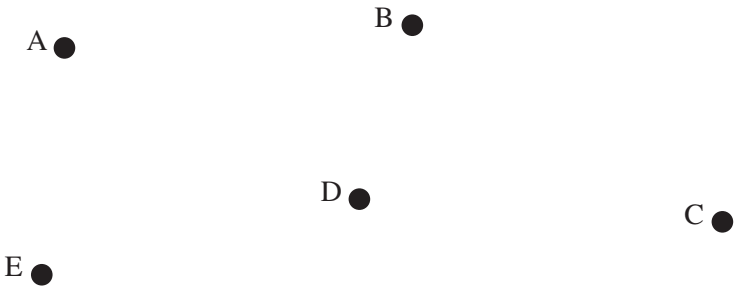
run 1	A
run 2	A
run 3	A
run 4	A
run 5	A
run 6	A
run 7	A
run 8	A
run 9	A
run 10	A

Probability of exiting at A: ……

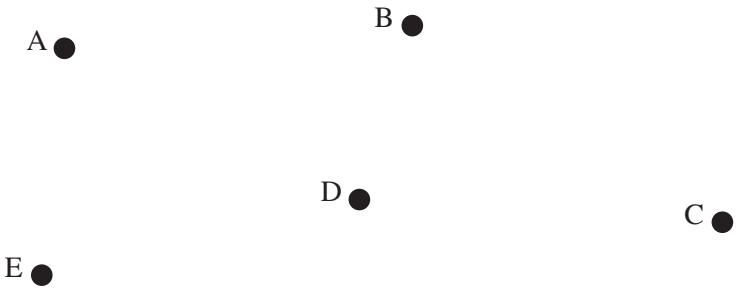
Probability of exiting at B: ……

Probability of exiting at C: ……

5 **(i)**



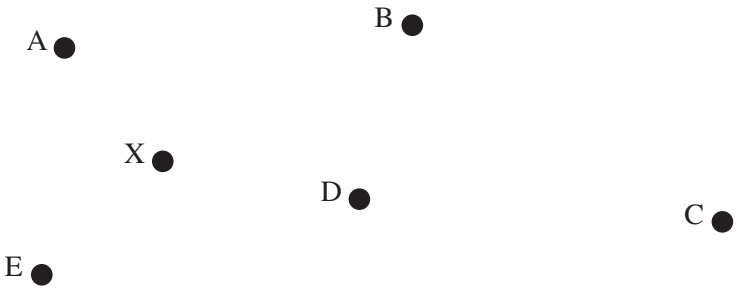
(ii)



Order of inclusion:

Total length:

(iii)



Total length:

Advice:

(iv)

6 (i)&(ii)

Minimum completion time:

Critical activities:

(iii)

H																							
G																							
F																							
E																							
D																							
C																							
B																							
A																							

Least time:

Explanation:

(iii) **SPARE COPY OF CHART FOR QUESTION 6(iii)**

H																							
G																							
F																							
E																							
D																							
C																							
B																							
A																							

PLEASE DO NOT WRITE ON THIS PAGE