

Paper Reference 9FM0/3D
Pearson Edexcel
Level 3 GCE

Total Marks

Further Mathematics

Advanced

PAPER 3D: Decision Mathematics 1

Friday 23 June 2023 – Afternoon

Time: 1 hour 30 minutes

Answer Booklet

**In the boxes below, write your name,
centre number and candidate number.**

Surname					
Other names					
Centre Number					
Candidate Number					

Read the instructions on the next page.

Y72799A



Pearson

INSTRUCTIONS

Do not return the Question Paper with the Answer Booklet.

**THIS ANSWER BOOKLET MUST BE
RETURNED WITH THE
DIAGRAM BOOKLET AT THE END OF
THE EXAMINATION.**

Turn over

- 1. Refer to Diagram 1, Diagram 2 and Diagram 3 in the Diagram Booklet.**

Answer lines continue on the next four pages.

1. continued.

Turn over

1. continued.

Turn over

1. continued.

Turn over

1. continued.

(continued on the next page)

Turn over

1. continued.

(e) Initial time matrix

	A	B	C	D	E
A	—				
B		—			
C			—		
D				—	
E					—

(continued on the next page)

Turn over

1. (e) continued.

Spare copy for Initial time matrix

	A	B	C	D	E
A	—				
B		—			
C			—		
D				—	
E					—

(continued on the next page)

Turn over

1. continued.

(f) Final iteration

	A	B	C	D	E
A	—				
B		—			
C			—		
D				—	
E					—

(continued on the next page)

Turn over

1. (f) continued.

Spare copy for Final iteration

	A	B	C	D	E
A	–				
B		–			
C			–		
D				–	
E					–

(Total for Question 1 is 7 marks)

Turn over

2. Refer to Diagram 4, Diagram 5, Diagram 6 and Diagram 7 in the Diagram Booklet.

Answer lines continue on the next four pages.

2. continued.

Turn over

2. continued.

Turn over

2. continued.

Turn over

2. continued.

(Total for Question 2 is 7 marks)

3. Refer to Diagram 8 and Diagram 9 in the Diagram Booklet.

Answer lines continue on the next four pages.

Turn over

3. continued.

Turn over

3. continued.

Turn over

3. continued.

Turn over

3. continued.

(Total for Question 3 is 8 marks)

22

4.

15	22	3	9	23	x
5	4	18	20	13	

Answer lines continue on the next
eighteen pages.

Turn over

23

4. continued.

15	22	3	9	23	x
5	4	18	20	13	

Turn over

24

4. continued.

15	22	3	9	23	x
5	4	18	20	13	

Turn over

4. continued.

15	22	3	9	23	x
5	4	18	20	13	

Turn over

4. continued.

15

22

3

9

23

X

5

4

18

20

13

Turn over

4. continued.

15	22	3	9	23	x
5	4	18	20	13	

Turn over

4. continued.

15	22	3	9	23	x
5	4	18	20	13	

Turn over

4. continued.

15	22	3	9	23	x
5	4	18	20	13	

Turn over

30

4. continued.

15	22	3	9	23	x
5	4	18	20	13	

Turn over

4. continued.

15	22	3	9	23	x
5	4	18	20	13	

Turn over

4. continued.

15	22	3	9	23	x
5	4	18	20	13	

Turn over

4. continued.

15

22

3

9

23

X

5

4

18

20

13

Turn over

4. continued.

15	22	3	9	23	x
5	4	18	20	13	

Turn over

4. continued.

15

22

3

9

23

X

5

4

18

20

13

Turn over

4. continued.

15	22	3	9	23	x
5	4	18	20	13	

Turn over

4. continued.

15

22

3

9

23

X

5

4

18

20

13

Turn over

4. continued.

15	22	3	9	23	x
5	4	18	20	13	

[illegible]

Turn over

40

4. continued.

15	22	3	9	23	x
5	4	18	20	13	

(Total for Question 4 is 12 marks)

Turn over

5. Refer to Diagram 10 and Diagram 11 in the Diagram Booklet.

Answer lines continue on the next eleven pages.

Turn over

5. continued.

Turn over

5. continued.

Turn over

5. continued.

Turn over

5. continued.

Turn over

5. continued.

Turn over

5. continued.

[illegible]

Turn over

5. continued.

Turn over

5. continued.

Turn over

5. continued.

Turn over

5. continued.

Turn over

5. continued.

(Total for Question 5 is 13 marks)

- 6. Refer to Diagram 12 and Diagram 13 in the Diagram Booklet.**

Answer space and lines continue on the next six pages.

6. continued.

Turn over

6. continued.

Turn over

6. continued.

Turn over

6. continued.

Turn over

6. continued.

Turn over

6. continued.

(Total for Question 6 is 9 marks)

Turn over

7. Refer to Diagram 14 and Diagram 15 in the Diagram Booklet.

Answer lines continue on the next seven pages.

Turn over

7. continued.

Turn over

7. continued.

Turn over

7. continued.

Turn over

7. continued.

Turn over

7. continued.

Turn over

7. continued.

Turn over

7. continued.

(continued on the next page)

Turn over

7. continued.

b.v.	x	y	z								Value
P											
I											

(continued on the next page)

Turn over

7. continued.

Spare copy

b.v.	x	y	z															Value
P																		
I																		

Parts (c), (d) and (e) to be answered on the following pages.

Turn over

7. continued.

b.v.	x	y	z	s ₁	s ₂	s ₃	s ₄	Value	Row Ops
P									

(continued on the next page)

Turn over

7. continued.

Spare copy

b.v.	x	y	z	s ₁	s ₂	s ₃	s ₄	Value	Row Ops
P									

(continued on the next page)

Turn over

7. continued.

Answer lines continue on the next page.

Turn over

7. continued.

(Total for Question 7 is 19 marks)

TOTAL FOR PAPER IS 75 MARKS
END OF PAPER
