



Oxford Cambridge and RSA

Thursday 22 October 2020 – Afternoon

A Level Further Mathematics A

Y544/01 Discrete Mathematics

Printed Answer Booklet

Time allowed: 1 hour 30 minutes

You must have:

- Question Paper Y544/01 (inside this document)
- the Formulae Booklet for A Level Further Mathematics A
- a scientific or graphical calculator



Please write clearly in black ink. **Do not write in the barcodes.**

Centre number

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Candidate number

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First name(s)

Last name

INSTRUCTIONS

- Use black ink. You can use an HB pencil, but only for graphs and diagrams.
- Write your answer to each question in the space provided in the **Printed Answer Booklet**. If you need extra space use the lined pages at the end of the Printed Answer Booklet. The question numbers must be clearly shown.
- Answer **all** the questions.
- Where appropriate, your answer should be supported with working. Marks might be given for using a correct method, even if your answer is wrong.
- Give non-exact numerical answers correct to 3 significant figures unless a different degree of accuracy is specified in the question.
- The acceleration due to gravity is denoted by $g \text{ m s}^{-2}$. When a numerical value is needed use $g = 9.8$ unless a different value is specified in the question.

INFORMATION

- This document has **16** pages.

ADVICE

- Read each question carefully before you start your answer.

1(a)(i)	
1(a)(ii)	
1(b)(i)	

1(b)(ii)	
1(c)(i)	
1(c)(ii)	

2(a)(i) 2(a)(ii)		R	S	T
	K	(7, 3)	(2, 6)	(5, 3)
	L	(1, 5)	(8, 2)	(2, 5)
	M	(3, 2)	(1, 5)	(4, 6)
2(b)(i)				
2(b)(ii)				
2(c)				

2(d)

There is a spare grid on the next page.

Tick here if you want the **spare** grid marked **instead** of the grid below



(answer space continued on next page)

2(d) (continued) If you want this grid marked, instead of the first grid, please tick the box on the previous page.



2(e)

	R	S	T
K	(7, 3)	(2, 6)	(5, 3)
L	(1, 5)	(8, 2)	(2, 5)
M	(3, 2)	(1, 5)	(4, 6)

3(a)

3(b)

3(c)

P	x	y	z	s	t	RHS
1	-3	1	0	0	0	0
0	2	0	1	1	0	18
0	-1	2	3	0	1	20

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Tick here if you want the **spare** grid marked **instead** of the grid below

P	x	y	z	s	t	RHS

(answer space continued on next page)

4(a)																																						
4(b)																																						
4(c)	<table border="1"><tr><td>Seat 5</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Seat 6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Seat 7</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Seat 8</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	Seat 5										Seat 6									Seat 7									Seat 8								
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	Seat 8																																					
4(d)																																						

5(b)(i)	
	5(b)(ii)

(answer space continued on next page)

5(b)(ii)	(continued)
5(b)(iii)	
5(c)	
5(d)(i)	
5(d)(ii)	

6(b)

For working, if required

For working, if required

6(c)																																																																																																																																																																																																																																																																																																																																	
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<p>Space for working for 6(c), 6(d) and 6(e)</p> <table border="1" data-bbox="276 689 1453 898"><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> <table border="1" data-bbox="276 1055 1453 1263"><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> <table border="1" data-bbox="276 1420 1453 1628"><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> <table border="1" data-bbox="276 1785 1453 1993"><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>																																																																																																																																																																																																																																																																																																																																	

ADDITIONAL ANSWER SPACE

If additional space is required, you should use the following lined page(s). The question number(s) must be clearly shown in the margin(s).

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