



Oxford Cambridge and RSA

Wednesday 22 June 2022 – Afternoon

A Level Further Mathematics B (MEI)

Y434/01 Numerical Methods

Printed Answer Booklet

Time allowed: 1 hour 15 minutes



You must have:

- Question Paper Y434/01 (inside this document)
- the Formulae Booklet for Further Mathematics B (MEI)
- 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 your final answers to a degree of accuracy that is appropriate to the context.

INFORMATION

- This document has **12** pages.

ADVICE

- Read each question carefully before you start your answer.

1(a)	
1(b)	
1(c)	

2(a)	
2(b)	
2(c)	
2(d)	

3(a)	
3(b)	
$x_5 =$	
$x_6 =$	
3(c)	
3(d)	
3(e)	

4(a)	
4(b)	
4(c)(i)	
4(c)(ii)	
4(d)	

5(a)	

5(b)	<table border="1" style="margin: auto;"> <thead> <tr> <th></th> <th>F</th> <th>G</th> <th>H</th> <th>I</th> </tr> </thead> <tbody> <tr> <td>3</td> <td>n</td> <td>M_n</td> <td>T_n</td> <td>S_{2n}</td> </tr> <tr> <td>4</td> <td>1</td> <td>0.2436699</td> <td>0.1479020</td> <td></td> </tr> <tr> <td>5</td> <td>2</td> <td>0.2306967</td> <td></td> <td></td> </tr> </tbody> </table>					F	G	H	I	3	n	M_n	T_n	S_{2n}	4	1	0.2436699	0.1479020		5	2	0.2306967		
		F	G	H	I																			
	3	n	M_n	T_n	S_{2n}																			
	4	1	0.2436699	0.1479020																				
	5	2	0.2306967																					

5(c)	

6(a)	

6(b)	<i>r</i>	x_r	difference	ratio
	0	0		
	1			
	2			
	3			
	4		-0.000192	
	5		-1.99×10^{-7}	0.00103
	6		-1.82×10^{-10}	0.000914
6(c)				
6(d)				
6(e)				

7(a)	<i>t</i>	<i>M</i>	ΔM	$\Delta^2 M$	$\Delta^3 M$
	0	88.3			
	10	80.05			
	20	78.7			
	30	78.85			

7(b)	

7(c)

7(d)

t	M	ΔM	$\Delta^2 M$	$\Delta^3 M$	$\Delta^4 M$
0	88.3				
10	80.05				
20	78.7				
30	78.85				
40	78.7				
50	80.05				

7(e)

(answer space continued on next page)

7(e)	(continued)
7(f)	

