

OXFORD CAMBRIDGE AND RSA EXAMINATIONS
FSMQ

6993

ADVANCED LEVEL

Additional Mathematics

PRINTED ANSWER BOOK

WEDNESDAY 30 MAY 2012: Afternoon

DURATION: 2 hours

plus your additional time allowance

MODIFIED ENLARGED

Candidates answer on the Printed Answer Book.

OCR SUPPLIED MATERIALS:

Question Paper 6993 (inserted)

OTHER MATERIALS REQUIRED:

Scientific or graphical calculator

READ INSTRUCTIONS OVERLEAF

INSTRUCTIONS TO CANDIDATES

These instructions are the same on the Printed Answer Book and the Question Paper.

- **The Question Paper will be found in the centre of the Printed Answer Book.**
- **Write your name, centre number and candidate number in the spaces provided on the Printed Answer Book. Please write clearly and in capital letters.**
- **WRITE YOUR ANSWER TO EACH QUESTION IN THE SPACE PROVIDED IN THE PRINTED ANSWER BOOK.** Additional paper may be used if necessary but you must clearly show your candidate number, centre number and question number(s).
- **Use black ink. HB pencil may be used for graphs and diagrams only.**
- **Answer ALL the questions.**
- **Read each question carefully. Make sure you know what you have to do before starting your answer.**
- **You are permitted to use a scientific or graphical calculator in this paper.**
- **Final answers should be given correct to three significant figures where appropriate.**

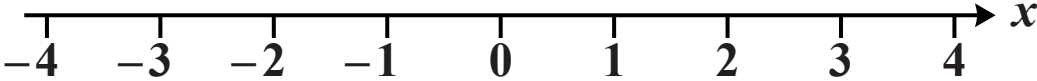
INFORMATION FOR CANDIDATES

This information is the same on the Printed Answer Book and the Question Paper.

- **The number of marks is given in brackets [] at the end of each question or part question on the Question Paper.**
- **You are advised that an answer may receive NO MARKS unless you show sufficient detail of the working to indicate that a correct method is being used.**
- **The total number of marks for this paper is 100.**

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SECTION A

1 (i)	
1 (ii)	

2 (i)	

2 (ii)	

3 (i)	

3 (ii)	

4

(answer space continued on next page)

4	(continued)

5 (i)	

5 (ii)	

6 (i)	

6 (ii)	

7 (i)	

7 (ii)	

8 (i)	
8 (ii)	

8 (iii)	

9 (i)	
9 (ii)	

9 (iii)	

SECTION B

10 (i)	

10 (ii)	

10 (iii)	

10 (iv)	

10 (v)	

11 (i)	

11 (ii)	

11 (iii)	
	(answer space continued on next page)

(answer space continued on next page)

11 (iii)	(continued)

12 (i)	

12 (ii)	
12 (iii)	

13 (i)	

13 (ii)	
13 (iii)	

13 (iv)	
13 (v)	<p>Take P to be the point (2, 16)</p> <p>Take Q to be the point (2 + h, (2 + h)⁴)</p> <p>The gradient of the chord PQ is given by</p> $\frac{(2+h)^4 - 16}{h} =$ <p style="text-align: right;">(answer space continued on next page)</p>

13 (v) (continued)	
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