

**FREE-STANDING MATHEMATICS QUALIFICATION
ADVANCED LEVEL**

Additional Mathematics

6993

PRINTED ANSWER BOOK

Candidates answer on this printed answer book.

OCR supplied materials:

- Question paper 6993 (inserted)

Other materials required:

- Scientific or graphical calculator

**Monday 13 June 2011
Morning**

Duration: 2 hours



Candidate forename		Candidate surname	
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Centre number						Candidate number				
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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. Pencil may be used for graphs and diagrams only.
- Read each question carefully. Make sure you know what you have to do before starting your answer.
- Answer **all** the questions.
- Do **not** write in the bar codes.
- 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**.
- The printed answer book consists of **20** pages. The question paper consists of **8** pages. Any blank pages are indicated.

Section A

1	
2	

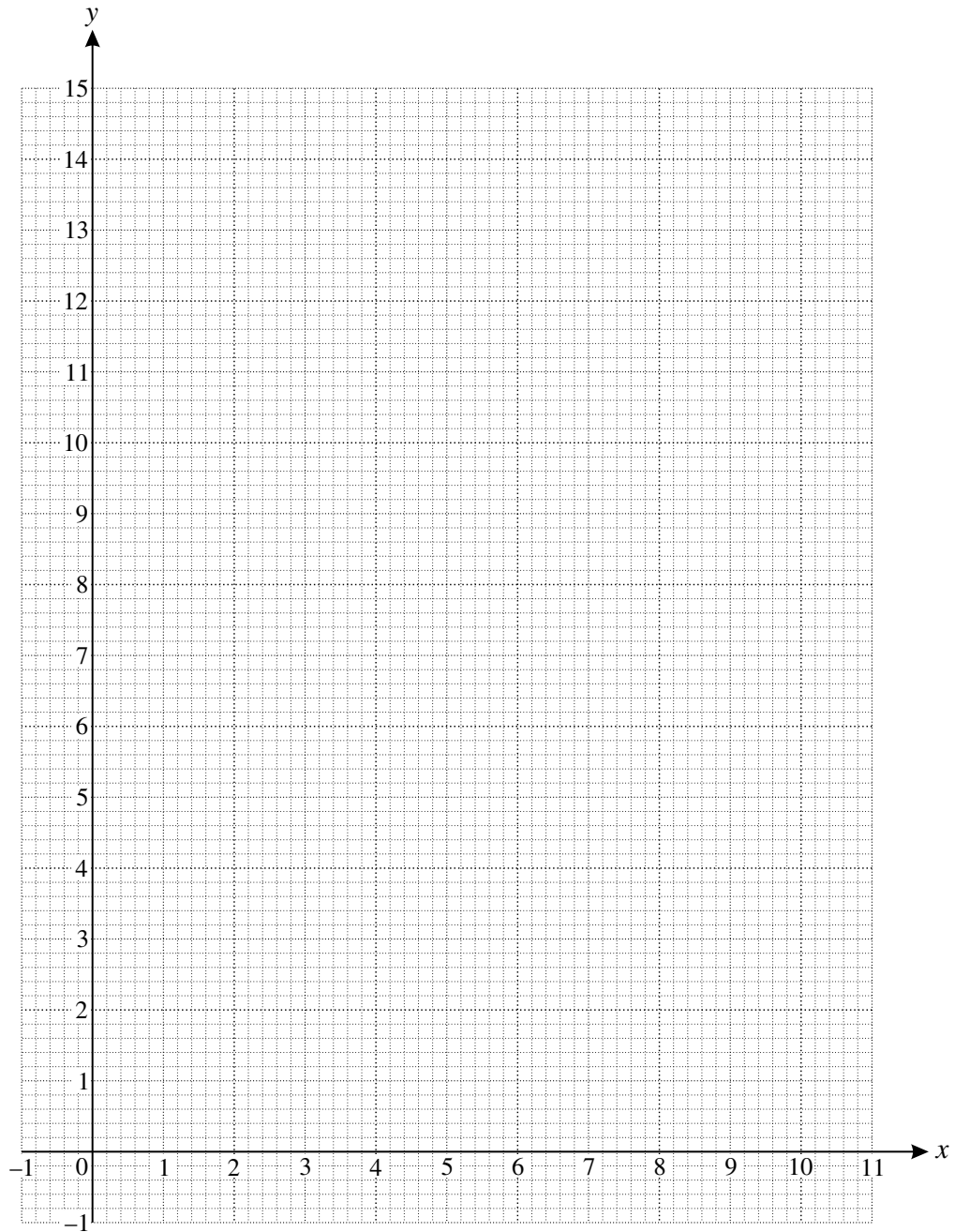
4	
5(a)	

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

6	
7(a)(i)	

7(a)(ii)	
7(b)(i)	
7(b)(ii)	

8(i)



There is a spare copy of this grid on page 18. If you wish any work on page 18 to be marked then you must cross through any work on this grid.

8(ii)

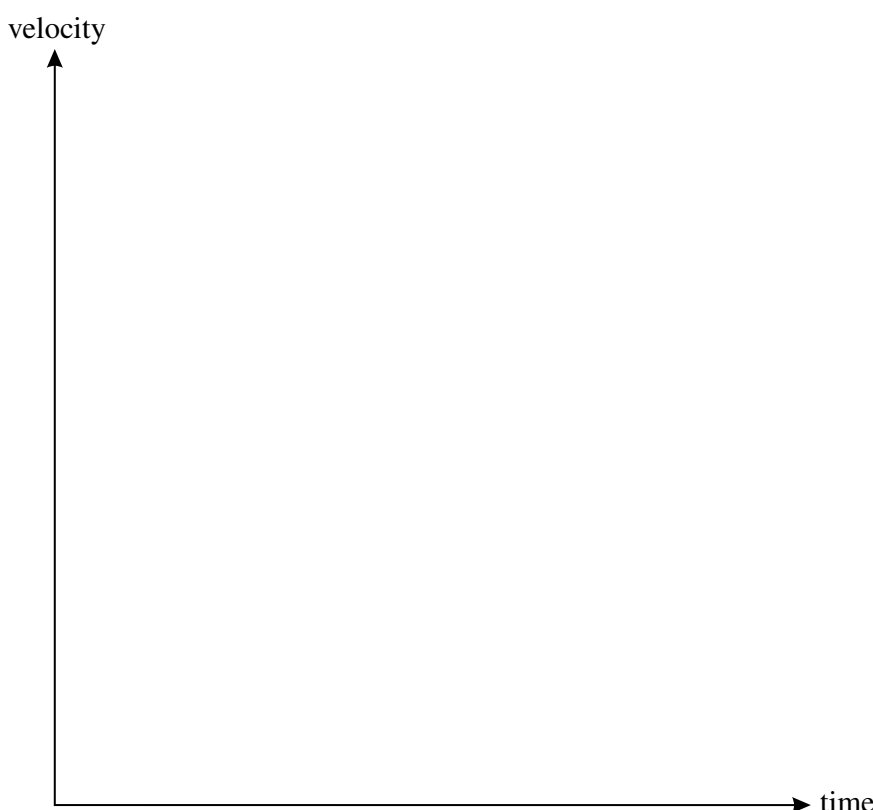
9	

10	

Section B

11(i)	
11(ii)	

12(a)	
12(b)	

12(c)(i)	
12(c)(ii)	
12(d)	 <p><i>There is a spare copy of these axes on page 19. If you wish any work on page 19 to be marked then you must cross through any work on these axes.</i></p>

13(i)	
13(ii)	

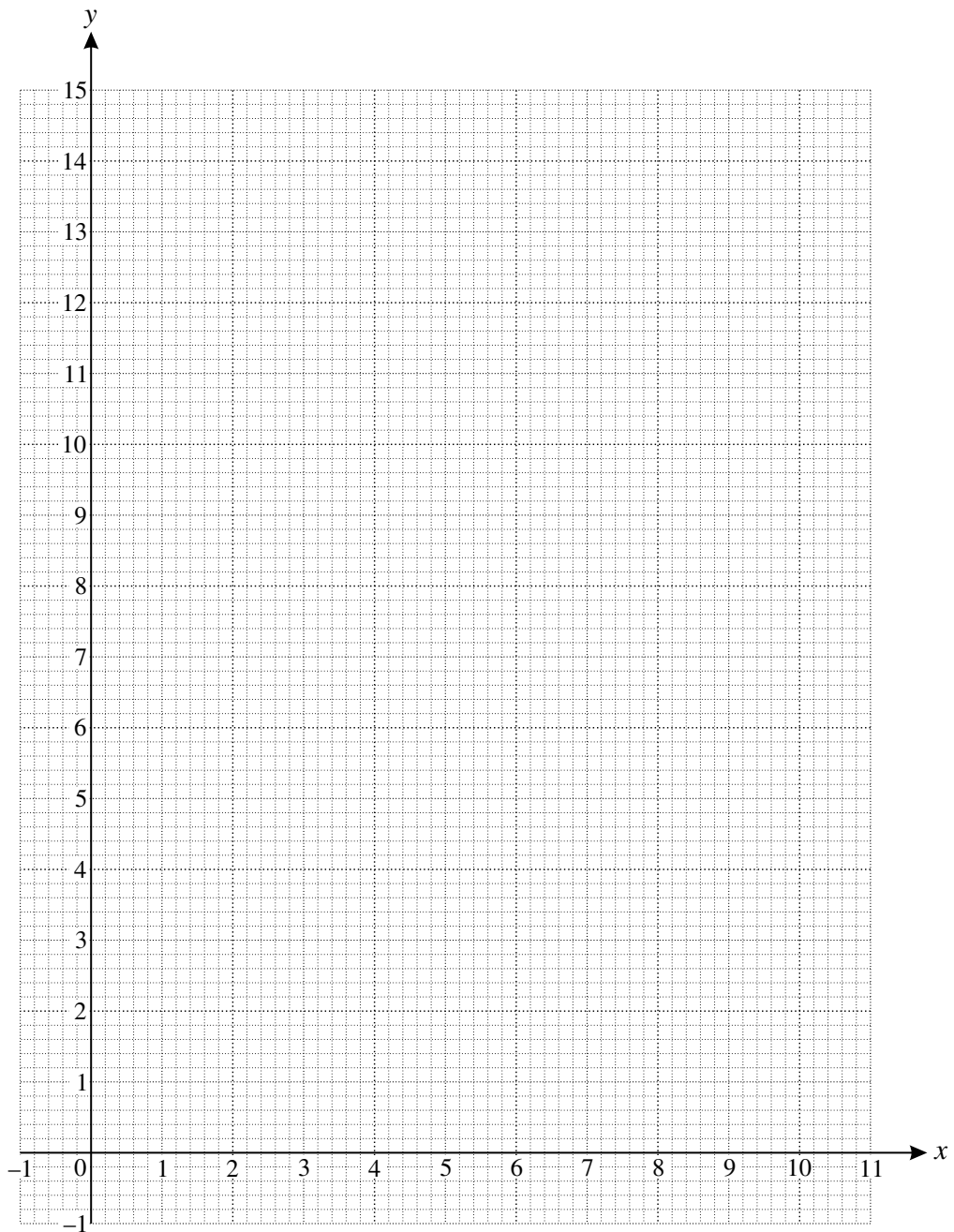
13(iii)	
13(iv)	
13(v)	

14(a)(i)	
14(a)(ii)	
14(b)	

This is a spare copy of the grid for Question 8 (i).

Only write on this page if you want to replace your work on the grid on page 8.

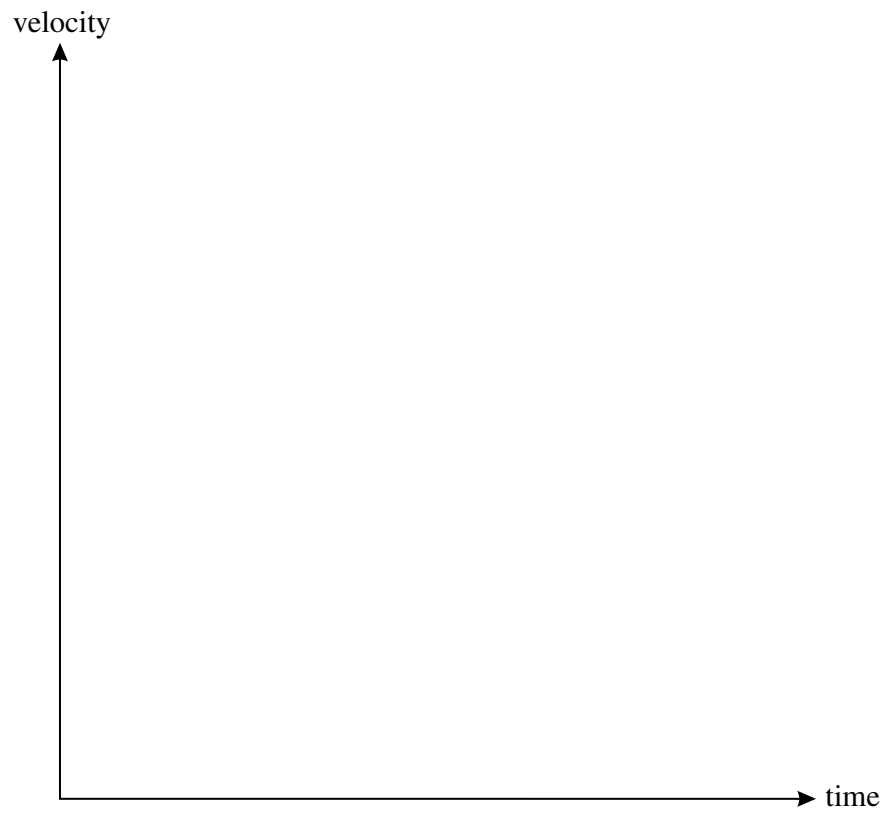
If you do so, then you must cross through the work on the grid on page 8.



This is a spare copy of the axes for Question 12 (d).

Only write on this page if you want to replace your work on the axes on page 13.

If you do so, then you must cross through the work on the axes on page 13.



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