

Centre No.						Paper Reference					Surname	Initial(s)		
Candidate No.						5	5	1	0	/	10	B	Signature	

Paper Reference(s)

**5510/10B**

**Edexcel GCSE**

**Mathematics B – 1388**

Paper 10 – Section B (Calculator)

**Higher Tier**

Module Test 1

Tuesday 7 November 2006 – Morning

Time for Section B: 25 minutes

Examiner's use only

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Team Leader's use only

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**Materials required for examination**

Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used.

**Items included with question papers**

Nil

**Instructions to Candidates**

In the boxes above, write your centre number, candidate number, your surname, initials and signature. Check that you have the correct question paper.

Answer ALL the questions. Write your answers in the spaces provided in this question paper.

**You must NOT write on the formulae page. Anything you write on the formulae page will gain NO credit.**

If you need more space to complete your answer to any question, use additional answer sheets.

**Information for Candidates**

The marks for individual questions and the parts of questions are shown in round brackets: e.g. (2). This section has 5 questions. The total mark for this section is 19. The total mark for this paper is 38. There are 8 pages in this question paper. Any blank pages are indicated.

**Calculators may be used for Section B only.**

If your calculator does not have a  $\pi$  button, take the value of  $\pi$  to be 3.142 unless the question instructs otherwise.

**Advice to Candidates**

Show all stages in any calculations.

Work steadily through the paper. Do not spend too long on one question.

If you cannot answer a question, leave it and attempt the next one.

Return at the end to those you have left out.

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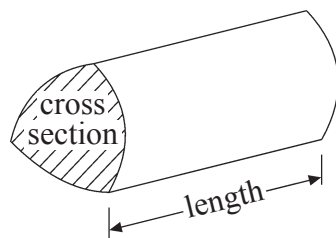
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GCSE Mathematics 1387/8

Formulae: Higher Tier

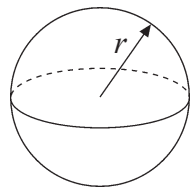
**You must not write on this formulae page.  
Anything you write on this formulae page will gain NO credit.**

**Volume of a prism** = area of cross section  $\times$  length



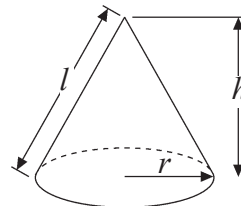
**Volume of sphere** =  $\frac{4}{3}\pi r^3$

**Surface area of sphere** =  $4\pi r^2$

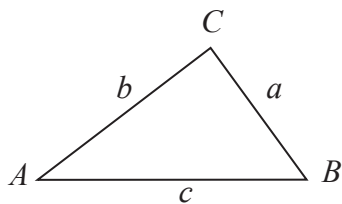


**Volume of cone** =  $\frac{1}{3}\pi r^2 h$

**Curved surface area of cone** =  $\pi r l$



**In any triangle ABC**



**The Quadratic Equation**

The solutions of  $ax^2 + bx + c = 0$   
where  $a \neq 0$ , are given by

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

**Sine Rule**  $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

**Cosine Rule**  $a^2 = b^2 + c^2 - 2bc \cos A$

**Area of triangle** =  $\frac{1}{2}ab \sin C$



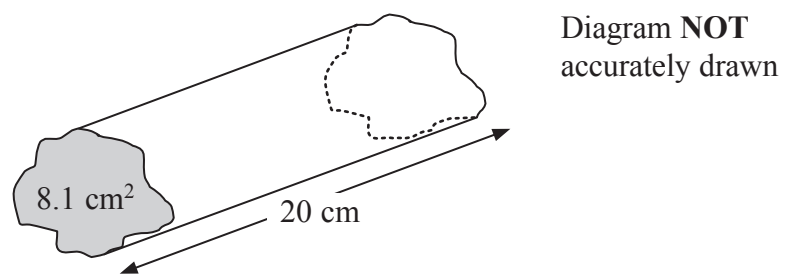
**SECTION B**

**Answer ALL FIVE questions.**

**Write your answers in the spaces provided.**

**You must write down all stages in your working.**

1. The diagram shows a prism.



The area of cross section of the prism is  $8.1 \text{ cm}^2$ .  
The length of the prism is  $20 \text{ cm}$ .

Work out the volume of the prism.

..... $\text{cm}^3$

**(Total 2 marks)**

**Q1**



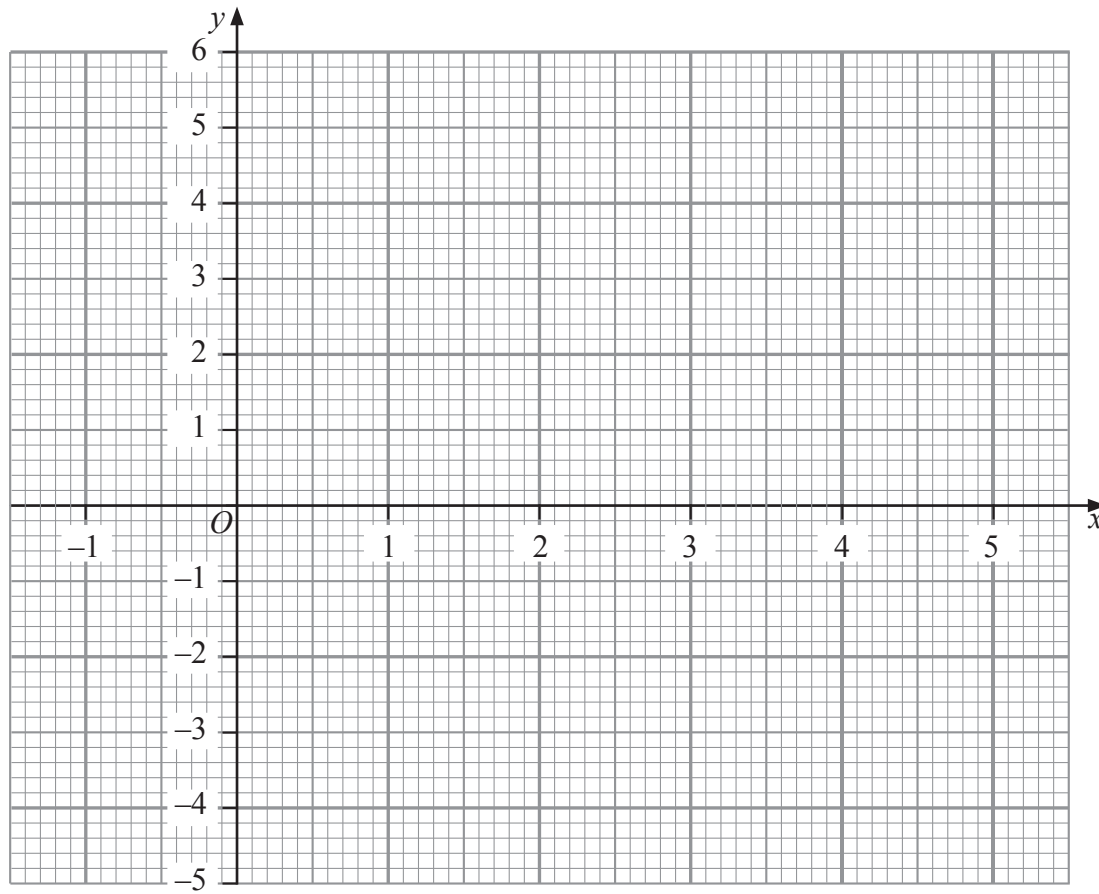
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2. (a) Complete the table of values for  $y = x^2 - 4x$

$x$	-1	0	1	2	3	4	5
$y$	5		-3		-3		

(2)

(b) On the grid, draw the graph of  $y = x^2 - 4x$



(2)

Q2

(Total 4 marks)



Leave  
blank

3. The equation

$$x^3 - x = 140$$

has a solution between 5 and 6

Use a trial and improvement method to find this solution.

Give your solution correct to 1 decimal place.

You must show **all** your working.

$x = \dots\dots\dots$

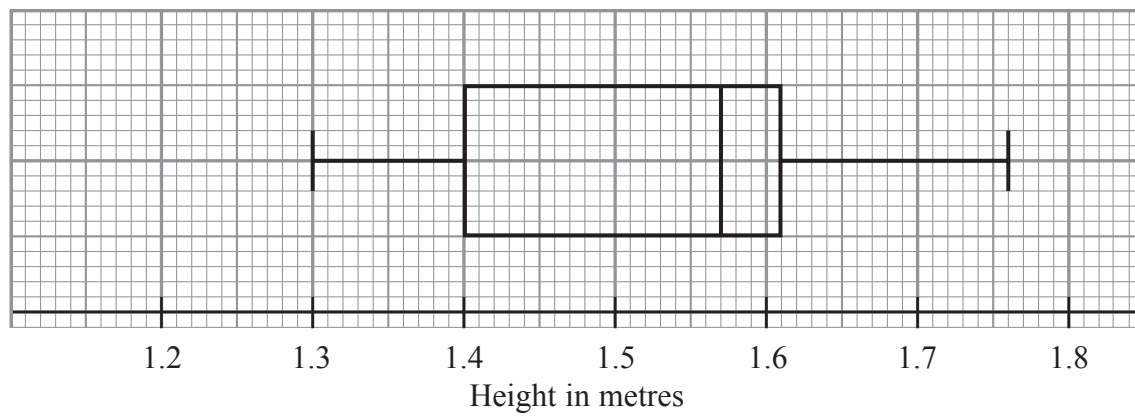
Q3

(Total 4 marks)



Leave blank

4. Julie measured the heights, in metres, of some of her friends.  
The box plot summarises this information.



- (a) Write down the median height.

..... m  
(1)

- (b) Write down the lower quartile of the heights.

..... m  
(1)

- (c) Find the range of the heights.

..... m  
(1)

Q4

(Total 3 marks)



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5.

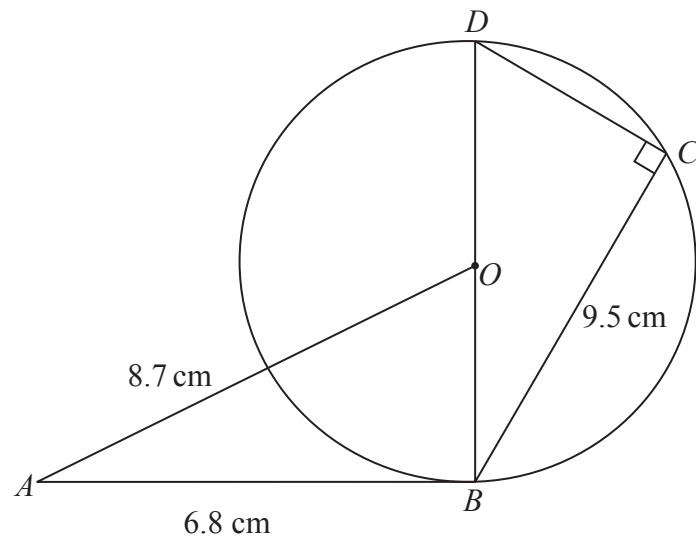


Diagram **NOT** accurately drawn

$B$ ,  $C$  and  $D$  are points on a circle, centre  $O$ .  
 $BOD$  is a diameter of the circle.  
 $AB$  is the tangent to the circle at  $B$ .  
Angle  $BCD = 90^\circ$ .  
 $OA = 8.7$  cm,  $AB = 6.8$  cm,  $BC = 9.5$  cm.

Calculate the size of angle  $CBD$ .  
Give your answer correct to 1 decimal place.

.....<sup>°</sup>

Q5

(Total 6 marks)

**TOTAL FOR SECTION B: 19 MARKS**

**TOTAL FOR PAPER: 38 MARKS**

**END**



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