

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

Thursday 8 March 2007 – 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 π button, take the value of π 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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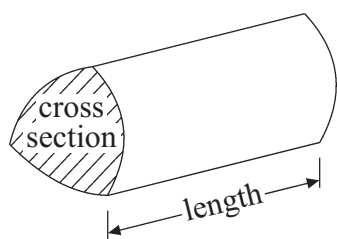
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GCSE Mathematics 1387/8

Formulae: Higher Tier

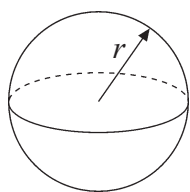
**You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.**

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



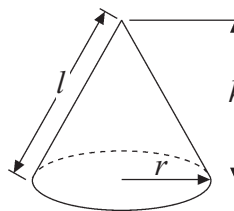
Volume of sphere = $\frac{4}{3} \pi r^3$

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

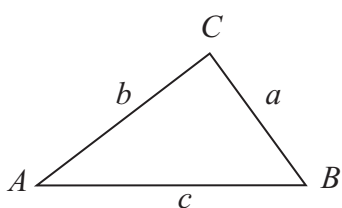


Volume of cone = $\frac{1}{3} \pi r^2 h$

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



In any triangle ABC



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 = $\frac{1}{2} ab \sin C$

The Quadratic Equation

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

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



Leave
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SECTION B

Answer ALL FIVE questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

- 1.** The equation

$$x^3 + 2x = 200$$

has a solution between 5 and 6
Use a trial and improvement method to find this solution.
Give your answer correct to 1 decimal place.
You must show **all** your working.

$x = \dots\dots\dots$
(Total 4 marks)

Q1



2. John completes 30 crossword puzzles.
The table shows some information about the time, in minutes, John takes to complete each crossword puzzle.

Time (t minutes)	Frequency
$10 < t \leq 15$	4
$15 < t \leq 20$	5
$20 < t \leq 25$	7
$25 < t \leq 30$	9
$30 < t \leq 35$	3
$35 < t \leq 40$	2

- (a) Complete the cumulative frequency table.

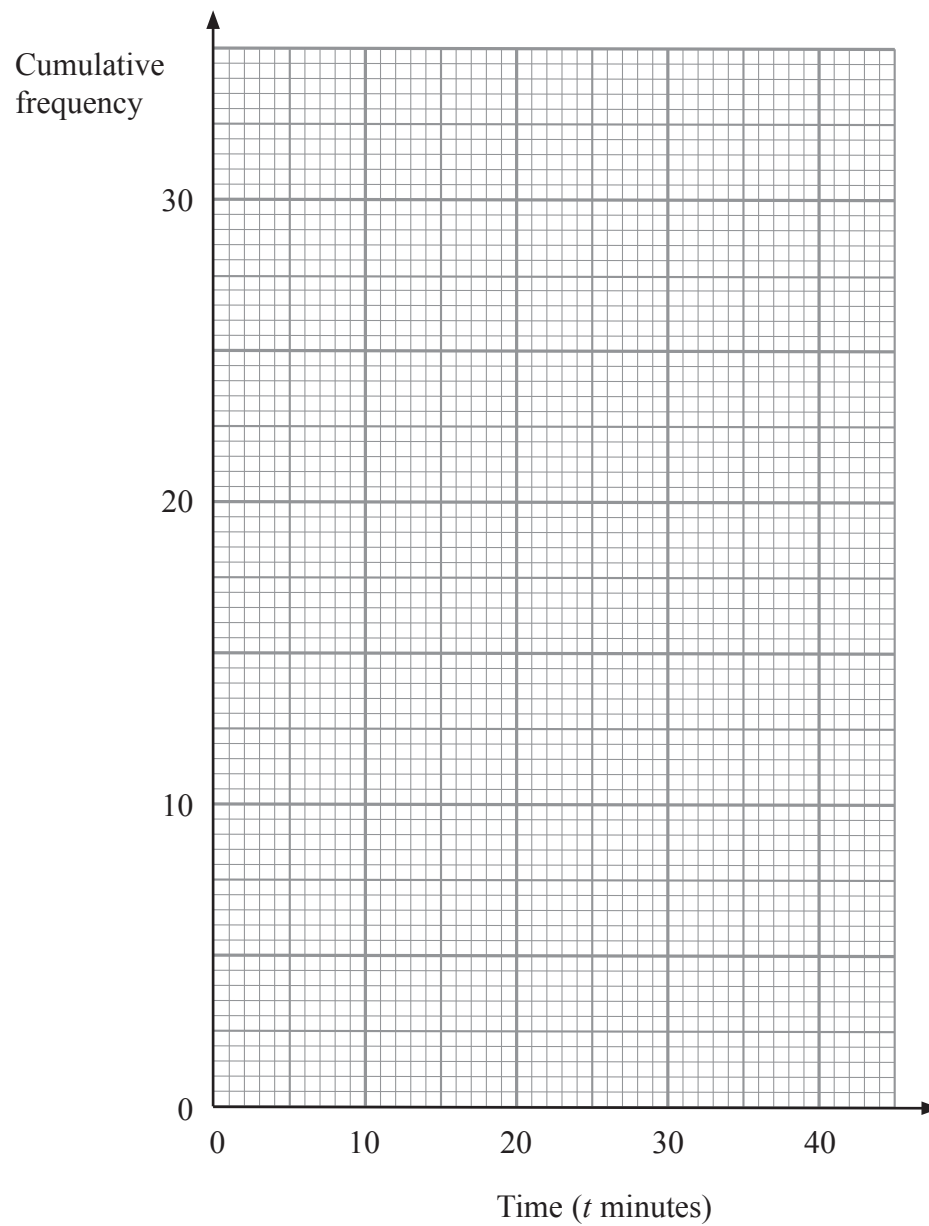
Time (t minutes)	Cumulative frequency
$0 < t \leq 15$	4
$0 < t \leq 20$	
$0 < t \leq 25$	
$0 < t \leq 30$	
$0 < t \leq 35$	
$0 < t \leq 40$	

(1)



Leave blank

(b) On the grid, draw a cumulative frequency graph to show this information.



(2)

(c) Use your graph to find an estimate for the median time.

..... minutes
(1)

(d) Use your graph to find an estimate for the number of crossword puzzles that John takes more than 22 minutes to complete.

.....
(2)

Q2

(Total 6 marks)



<p>3. (a) Write 7.38×10^5 as an ordinary number.</p> <p>.....</p> <p style="text-align: right;">(1)</p> <p>(b) Write 0.0205 as a number in standard form.</p> <p>.....</p> <p style="text-align: right;">(1)</p> <p style="text-align: right;">(Total 2 marks)</p>	<p>Leave blank</p> <p>Q3</p> <input type="text"/>
<p>4. <i>A</i> is the point with coordinates (6, 2). <i>B</i> is the point with coordinates (-2, 0).</p> <p>Calculate the length of the line segment <i>AB</i>.</p> <p>.....</p> <p style="text-align: right;">(Total 3 marks)</p>	<p>Q4</p> <input type="text"/>



5.

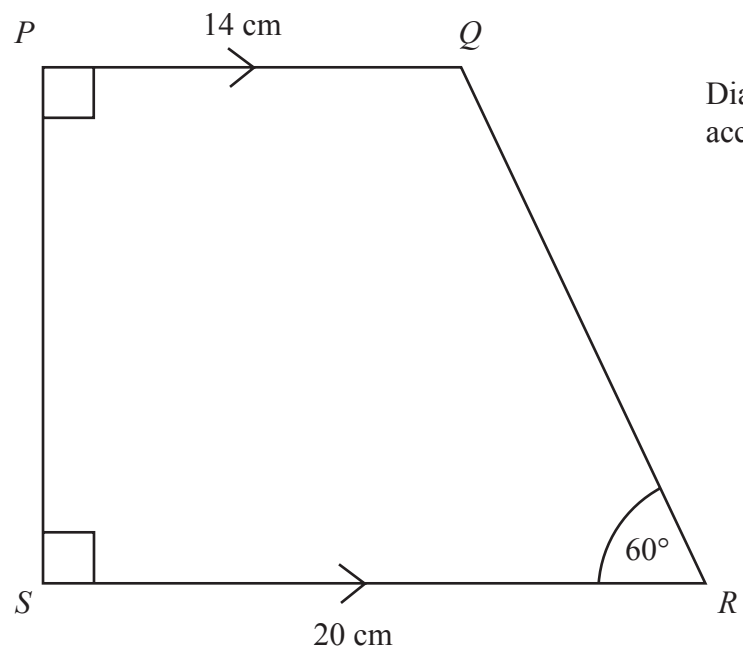


Diagram **NOT** accurately drawn

$PQRS$ is a trapezium.
 PQ is parallel to SR .
Angle $SPQ =$ angle $PSR = 90^\circ$.
Angle $QRS = 60^\circ$.
 $PQ = 14$ cm.
 $SR = 20$ cm.

Work out the area of the trapezium.
Give your answer correct to 3 significant figures.

..... cm²

Q5

(Total 4 marks)

TOTAL FOR SECTION B: 19 MARKS
TOTAL FOR PAPER: 38 MARKS

END



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