

Centre No.						Paper Reference					Surname	Initial(s)	
Candidate No.						5	5	1	3	/	13	B	Signature

Paper Reference(s)

5513/13B

Edexcel GCSE

Mathematics B – 1388

Paper 13 – Section B (Calculator)

Higher Tier

Module Test 2

Tuesday 7 November 2006 – Afternoon

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 7 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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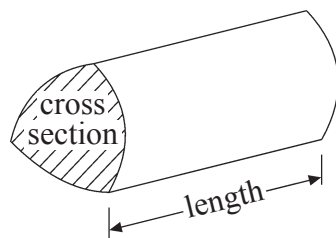
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GCSE Mathematics 1387/8

Formulae: Higher Tier

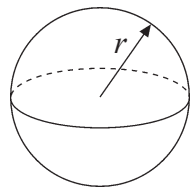
**You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.**

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



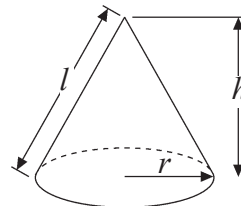
Volume of sphere = $\frac{4}{3}\pi r^3$

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

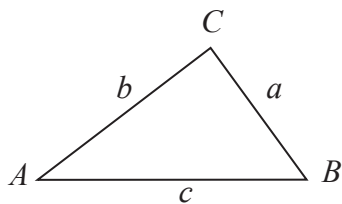


Volume of cone = $\frac{1}{3}\pi r^2 h$

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



In any triangle ABC



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



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SECTION B

Answer ALL SEVEN questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1. Saskia has a biased dice.
The probability that the dice will land on a two is 0.6
Saskia is going to throw the dice 300 times.

Work out an estimate for the number of times the dice will land on a two.

.....
(Total 2 marks)

Q1

2. Solve the inequality $3(x - 2) < 8 - 2x$

.....
(Total 3 marks)

Q2

3. Make p the subject of the formula $c = 5p - 2$

$p =$
(Total 2 marks)

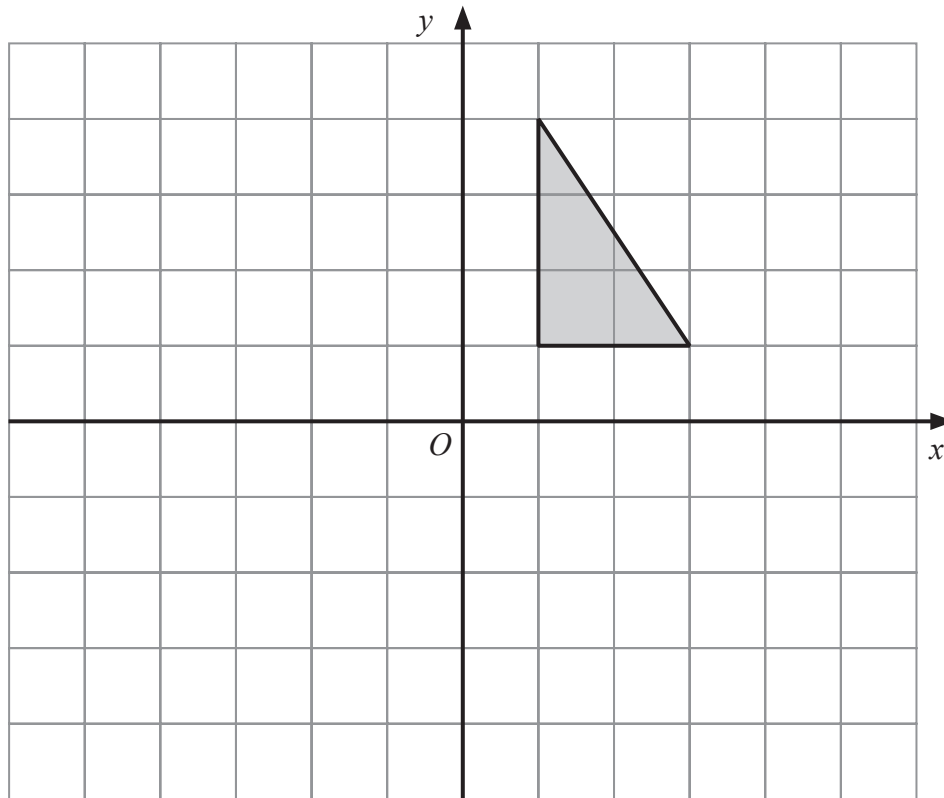
Q3



<p>4. For solid cuboids made from silver, the mass of a cuboid is directly proportional to its volume.</p> <p>A solid silver cuboid has a volume of 20 cm^3 and a mass of 210 g. Another solid silver cuboid has a volume of 46 cm^3.</p> <p>Calculate the mass of this 46 cm^3 cuboid.</p> <p style="text-align: right;">..... g</p> <p style="text-align: right;">(Total 2 marks)</p>	<p>Leave blank</p> <p style="text-align: center;">Q4</p> <input style="width: 20px; height: 20px;" type="text"/>
<p>5. Solve the equation $3x^2 + 7x - 5 = 0$ Give your answers correct to 4 significant figures.</p> <p style="text-align: right;">.....</p> <p style="text-align: right;">(Total 3 marks)</p>	<p style="text-align: center;">Q5</p> <input style="width: 20px; height: 20px;" type="text"/>



6.



Transformation **P** is a reflection in the x axis.
Transformation **Q** is a reflection in the line with equation $y = x$.

Describe fully the **single** transformation that is equivalent to the combined transformation of **P** followed by **Q**.

You may use the diagram to help you.

.....
.....

(Total 3 marks)

Q6



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7. The diagram shows an isosceles triangle ABC .

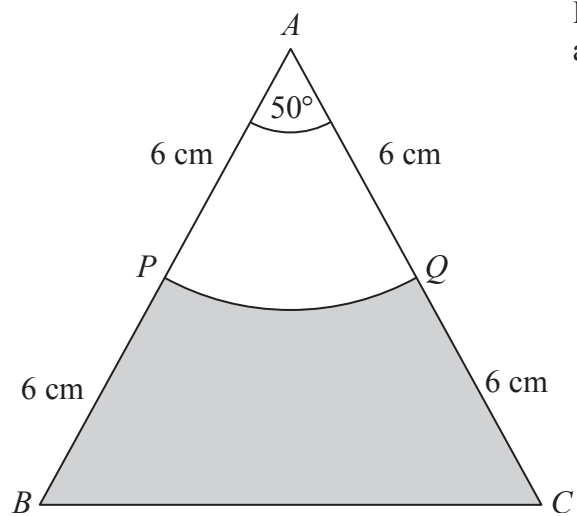


Diagram **NOT** accurately drawn

$AB = AC = 12\text{cm}$.

P is the midpoint of AB .

Q is the midpoint of AC .

Angle $PAQ = 50^\circ$.

APQ is a sector of a circle, centre A .

Calculate the area of the shaded region.

Give your answer correct to 3 significant figures.

..... cm^2

(Total 4 marks)

Q7

TOTAL FOR SECTION B: 19 MARKS

TOTAL FOR PAPER: 38 MARKS

END



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