

GENERAL CERTIFICATE OF SECONDARY EDUCATION MATHEMATICS C (GRADUATED ASSESSMENT)

8 B248A

MODULE M8 - SECTION A

TUESDAY 13 MARCH 2007

Morning

Time: 30 minutes

Candidates answer on the question paper.

Additional materials: Geometrical instruments

Tracing paper (optional)

Candidate Name		
Centre Number	Candidate Number	

INSTRUCTIONS TO CANDIDATES

- Write your name, Centre Number and Candidate Number in the boxes above.
- Answer all the questions.
- Use blue or black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure you know what you have to do before starting your answer.
- In many questions marks will be given for a correct method even if the answer is incorrect.
- Do not write in the bar code.
- Do not write outside the box bordering each page.
- WRITE YOUR ANSWER TO EACH QUESTION IN THE SPACE PROVIDED. ANSWERS WRITTEN ELSEWHERE WILL NOT BE MARKED.

INFORMATION FOR CANDIDATES

- The number of marks is given in brackets [] at the end of each question or part question.
- The total number of marks for this Section is 25.

WARNING
You are not allowed to use a calculator in Section A of this paper.

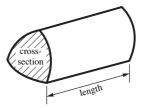
For Examiner's Use		
Section A		
Section B		
Total		

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Formulae Sheet

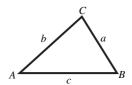
Volume of prism = (area of cross-section) ×length



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

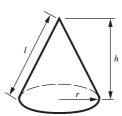
Volume of sphere =
$$\frac{4}{3}\pi r^3$$

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



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

Curved surface area of cone = πrl



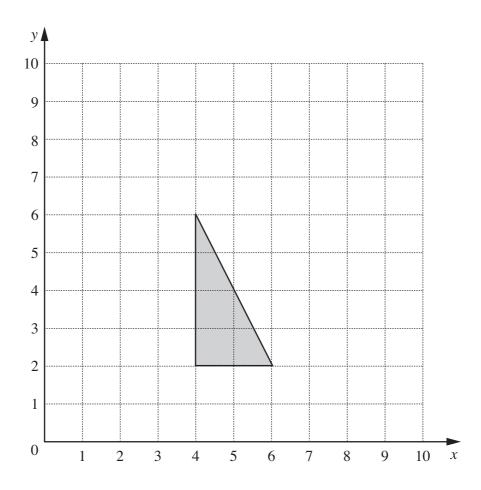
The Quadratic Equation

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

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

PLEASE DO NOT WRITE ON THIS PAGE

1



(a) Enlarge the triangle using scale factor 1.5 and centre (0, 0). [3]

(b) State a property of the triangle which is **not** changed by the enlargement.



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- 2 (a) Work out.
 - (i) $\frac{2}{5} \div \frac{3}{4}$

Give your answer as a fraction.

(ii) $3\frac{2}{3} \times 2\frac{1}{4}$

Give your answer as a mixed number.

(b) Work out.

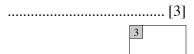
$$2 \times 10^{-3} + 4 \times 10^{-4}$$

Give your answer in standard index form.



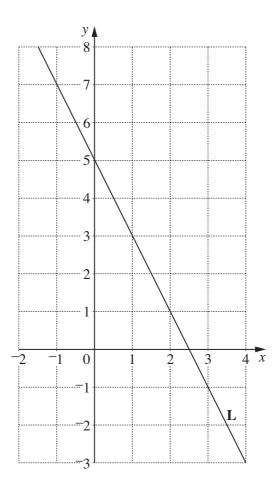
Expand and simplify.

$$(x-3)(x+5)$$



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4



Find the equation of line L.

.....[3]

3

5	(a)	Make <i>r</i> the subject of this formula
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$$F = \frac{\pi h r^2}{3}$$

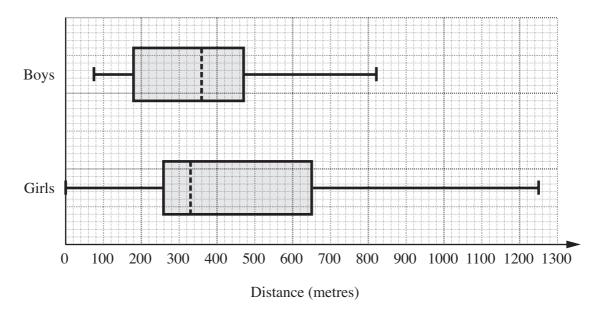
	(a)[3]
(b)	Given that r and h represent lengths, decide whether $F = \frac{\pi h r^2}{3}$ represents a length, an area or a volume.
	Give a reason for your answer.
	because
	[1]
	4

TURN OVER FOR QUESTION 6

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6 Class 8P went swimming last week.

These box plots represent data for the distances swum by the boys and the girls.



(a) Find the interquartile range for the girls.

	(a) m [2
(b)	Make two comparisons between the distances swum by the boys and the girls.
	1
	2
	[2

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