

Centre No.						Paper Reference							Surname	Initial(s)	
Candidate No.						5	5	4	3	H	/	11	A	Signature	

Paper Reference(s)

5543H/11A

Edexcel GCSE

Mathematics B (Modular) – 2544

Paper 11 – Section A (Calculator)

Higher Tier

Unit 3 Test

Thursday 8 March 2007 – Afternoon

Time for Section A: 30 minutes

Examiner's use only

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Team Leader's use only

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Section	Leave Blank
A	
B	



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 8 questions. The total mark for this section is 25. The total mark for this paper is 50. There are 8 pages in this question paper. Any blank pages are indicated. **Calculators may be used for Section A 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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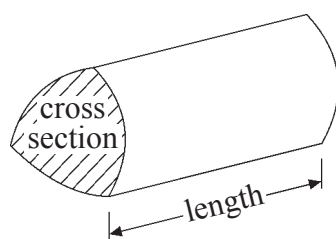
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GCSE Mathematics (Modular) 2544

Formulae: Higher Tier

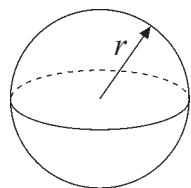
**You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.**

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



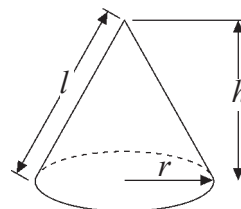
Volume of sphere = $\frac{4}{3}\pi r^3$

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

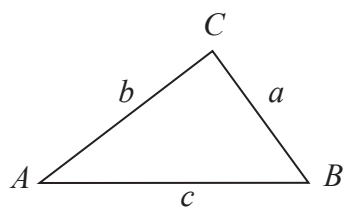


Volume of cone = $\frac{1}{3}\pi r^2 h$

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 A

Answer ALL EIGHT questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1.

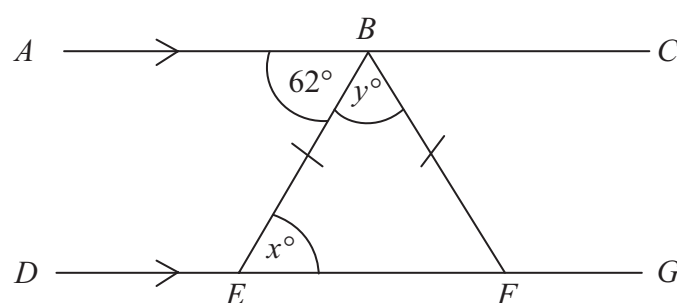


Diagram **NOT**
accurately drawn

ABC and $DEFG$ are straight lines.

AC is parallel to DG .

$BE = BF$.

Angle $ABE = 62^\circ$.

(a) (i) Find the value of x .

$x = \dots\dots\dots$

(ii) Give a reason for your answer.

$\dots\dots\dots$ (2)

(b) Work out the value of y .

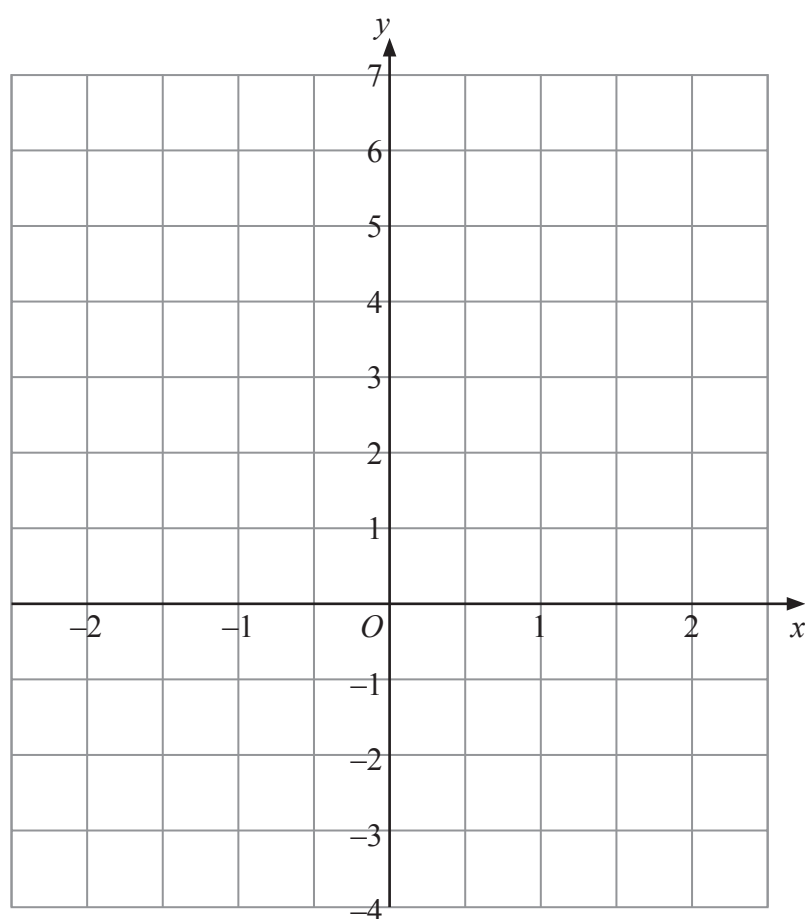
$y = \dots\dots\dots$ (2)

(Total 4 marks)

Q1



2. On the grid, draw the graph of $y = 2x + 1$
Use values of x from -2 to $+2$



(Total 3 marks)

Leave
blank

Q2



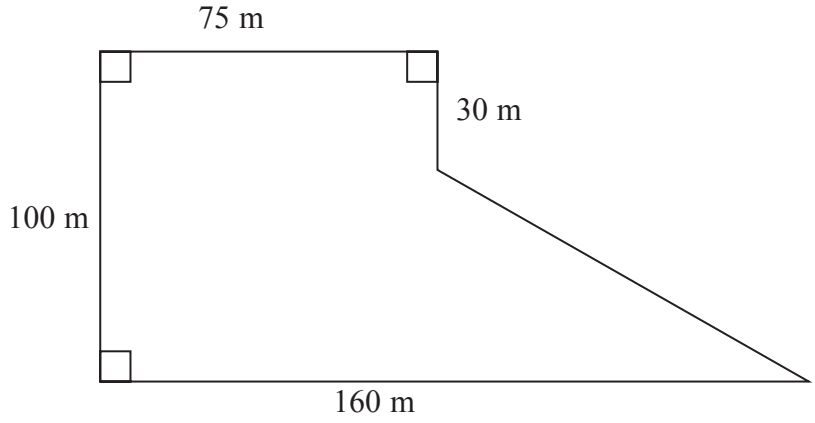


<p>3. Use your calculator to work out the value of $\sqrt{7.08^2 - 6.57^2}$</p> <p>(a) Write down all the figures on your calculator display.</p> <p>.....</p> <p>(2)</p> <p>(b) Write your answer to part (a) correct to 2 significant figures.</p> <p>.....</p> <p>(1)</p> <p>(Total 3 marks)</p>	<p>Leave blank</p> <p>Q3</p> <div></div>
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N 2 8 9 8 7 A 0 5 0 8



<p>4.</p> <div data-bbox="499 587 1260 982"></div> <p>Diagram NOT accurately drawn</p> <p>The diagram shows the plan of a field. The farmer sells the field for £3 per square metre.</p> <p>Work out the total amount of money the farmer should get.</p> <div data-bbox="1255 2086 1570 2154"><p>£ (Total 5 marks)</p></div>	<p>Leave blank</p> <p>Q4</p> <div data-bbox="1614 2086 1659 2154"><input type="text"/></div>



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<p>5.</p> <div data-bbox="619 647 1360 1062"> </div> <p>Diagram NOT accurately drawn</p> <p>In the diagram Q and R are points on the circumference of a circle. TQ and TR are tangents to the circle. $PQ = PR$. Angle $RQT = \text{angle } QRT = 70^\circ$. Angle $RPQ = 120^\circ$.</p> <p>Explain why P is not the centre of the circle.</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p style="text-align: right;">(Total 2 marks)</p>	<p>Leave blank</p> <p style="text-align: right;">Q5</p> <div data-bbox="1612 1635 1661 1709" style="border: 1px solid black; width: 23px; height: 25px; margin: 0 auto;"></div>
<p>6. Factorise fully $8x^2 - 12xy$</p> <p style="text-align: right;">.....</p> <p style="text-align: right;">(Total 2 marks)</p>	<p style="text-align: right;">Q6</p> <div data-bbox="1612 2012 1661 2092" style="border: 1px solid black; width: 23px; height: 27px; margin: 0 auto;"></div>



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<p>7. A and B are numbers written as the products of their prime factors.</p> $A = 3^2 \times 5 \times 7 \qquad B = 2 \times 3^3 \times 5^2$ <p>(i) Find the highest common factor (HCF) of A and B.</p> <p>.....</p> <p>(ii) Find the lowest common multiple (LCM) of A and B.</p> <p>.....</p> <p>(Total 3 marks)</p>	<p>Leave blank</p> <p>Q7</p> <input type="text"/>
<p>8. Simplify fully $\frac{3x+6}{x^2-4}$</p> <p>.....</p> <p>(Total 3 marks)</p>	<p>Q8</p> <input type="text"/>
<p>TOTAL FOR SECTION A: 25 MARKS</p> <p>END</p>	

