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

Monday 12 November 2007 – Afternoon

Time for Section A: 30 minutes

Examiner's use only		

Team Leader's use only		

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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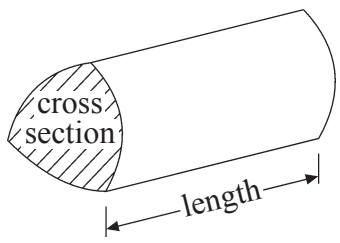
GCSE Mathematics (Modular) 2544

Formulae: Higher Tier

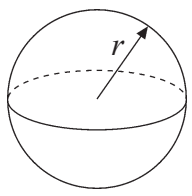
You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

Volume of a prism = area of cross section × length



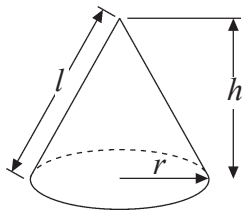
Volume of sphere $= \frac{4}{3}\pi r^3$

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

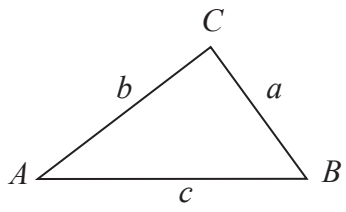


Volume of cone $= \frac{1}{3}\pi r^2 h$

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

Leave blank

SECTION A

Answer ALL EIGHT questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1. Here is part of Mrs Cook's gas bill.

Gas Bill	
New reading	6549 units
Old reading	5137 units
Cost per unit 52p	

Work out the **total** cost of the units of gas she used.

£ .....

Q1

(Total 4 marks)

2. (a) Expand $3(x + 2)$

.....

(1)

(b) Factorise $5t + 20$

.....

(1)

Q2

(Total 2 marks)

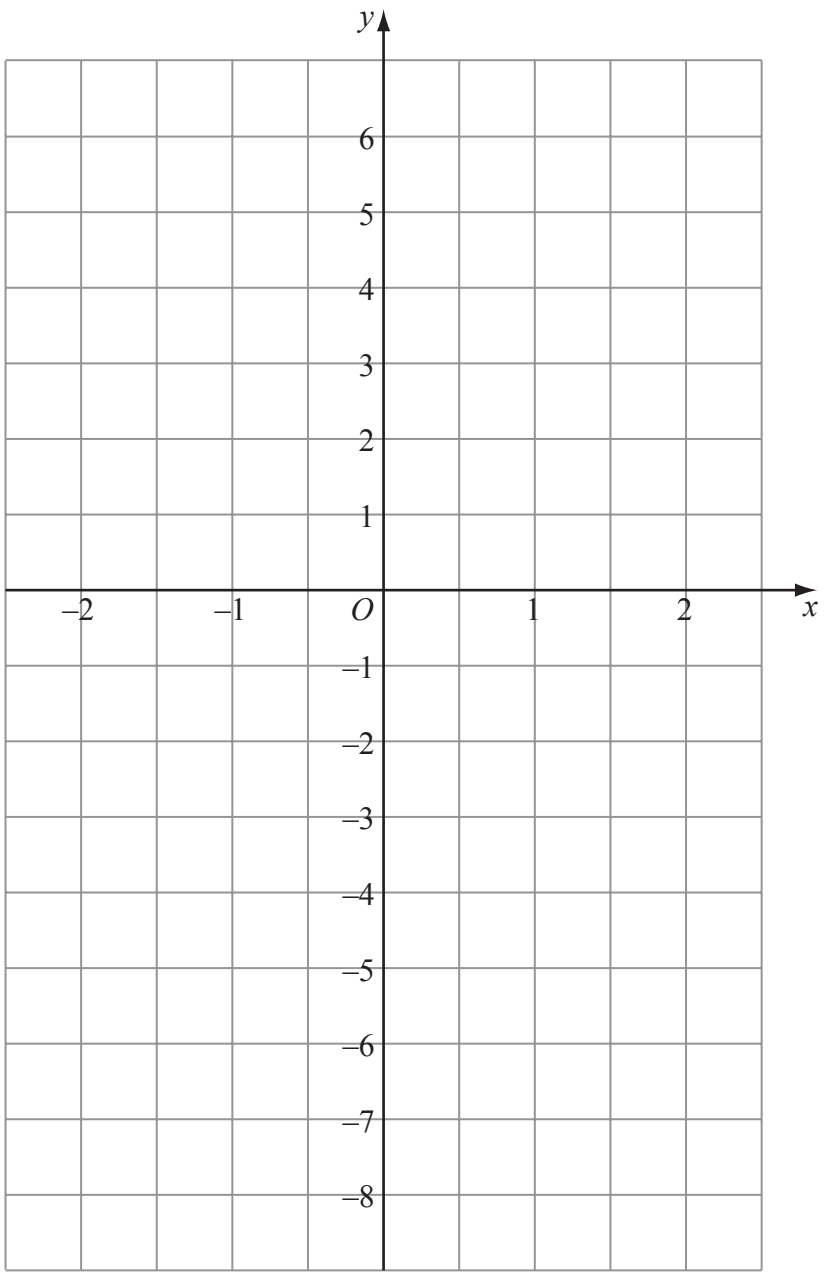
Leave blank

3. (a) Complete the table of values for $y = 3x - 1$

x	–2	–1	0	1	2
y		–4		2	

(2)

(b) On the grid, draw the graph of $y = 3x - 1$



(2)

Q3

(Total 4 marks)

Leave blank

4. Here are the first five terms of an arithmetic sequence.

3 5 7 9 11

Find, in terms of n, an expression for the nth term of the sequence.

.....

Q4

(Total 2 marks)

5.

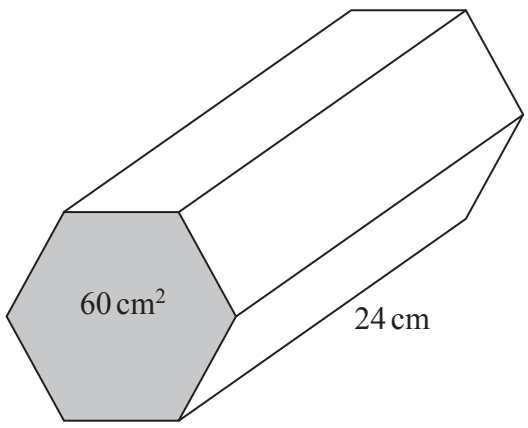


Diagram **NOT** accurately drawn

The diagram shows a solid hexagonal prism.

The area of the cross-section of the prism is 60 cm^2.
The length of the prism is 24 cm.

(a) Work out the volume of the prism.

..... cm^3

(2)

The prism is made from wood.
The prism has a mass of 648 g.

(b) Work out the density of the wood.

..... g/cm^3

(2)

Q5

(Total 4 marks)

Turn over

Leave blank

6. Work out $(9 \times 10^7) \div (3 \times 10^2)$

Give your answer in standard form.

.....

Q6

(Total 2 marks)

7.

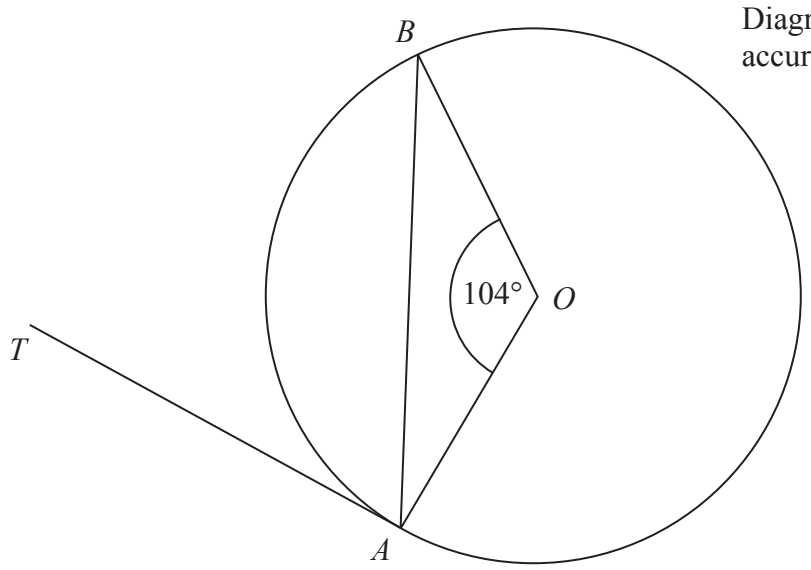


Diagram **NOT** accurately drawn

A and *B* are two points on the circumference of a circle, centre *O*.
TA is a tangent to the circle.
Angle *BOA* = 104°.

Work out the size of angle *BAT*.

.....°

Q7

(Total 3 marks)

Leave blank

8. Write as a single fraction in its simplest form

$$\frac{4}{x+5}+\frac{1}{x-3}$$

.....

Q8

(Total 4 marks)

TOTAL FOR SECTION A: 25 MARKS

END

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