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

Paper Reference(s)

5543H/11B

Examiner's use only

Team Leader's use only

Edexcel GCSE

Mathematics B (Modular) – 2544

Paper 11 – Section B (Non-Calculator)

Higher Tier

Unit 3 Test

Monday 18 June 2007 – Afternoon

Time for Section B: 30 minutes

Materials required for examination
Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser.
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 9 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.

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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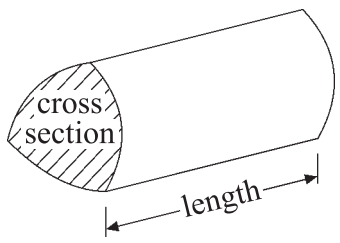
GCSE Mathematics (Modular) 2544

Formulae: Higher Tier

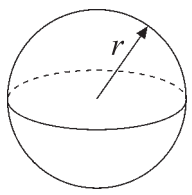
You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

Volume of a prism = area of cross section × length



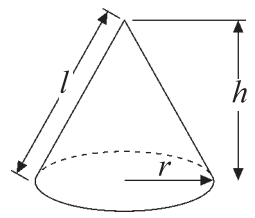
Volume of sphere $= \frac{4}{3}\pi r^3$

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

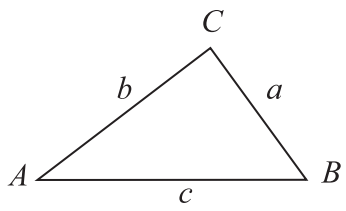


Volume of cone $= \frac{1}{3}\pi r^2 h$

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 B

Answer ALL NINE questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

You must NOT use a calculator for this section.

1. Here is a trapezium.

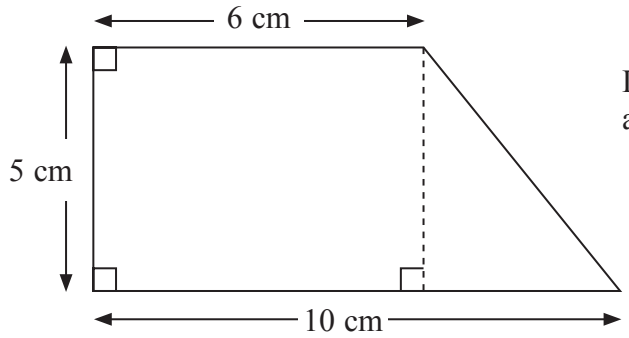


Diagram **NOT** accurately drawn

Work out the area of the trapezium.

..... cm²

Q1

(Total 2 marks)

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

4 7 10 13 16

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

.....

Q2

(Total 2 marks)

Leave blank

3. Work out 25.6×1.6
You **must** show **all** your working.

.....

(Total 3 marks)

Q3

4. Bob measures the length of his book.
The length of the book is 22 cm correct to the nearest centimetre.

(i) Write down the maximum possible length it could be.

..... cm

(ii) Write down the minimum possible length it could be.

..... cm

(Total 2 marks)

Q4

5. Write 450 000 in standard form.

.....

(Total 1 mark)

Q5

Leave blank

6. (a) Expand $3(5p - 2)$

.....
(1)

(b) Expand and simplify $3(2x + 1) + 2(3x - 1)$

.....
(2)

(c) Factorise $a^2 - 16a + 64$

.....
(2) **Q6**

(Total 5 marks)

7. (a) Work out $3^6 \div 3^2$

.....
(1)

(b) Write down the value of $36^{\frac{1}{2}}$

.....
(1)

(c) $3^n = \frac{1}{9}$

Find the value of n.

n = ...
(1) **Q7**

(Total 3 marks)

Leave blank

8.

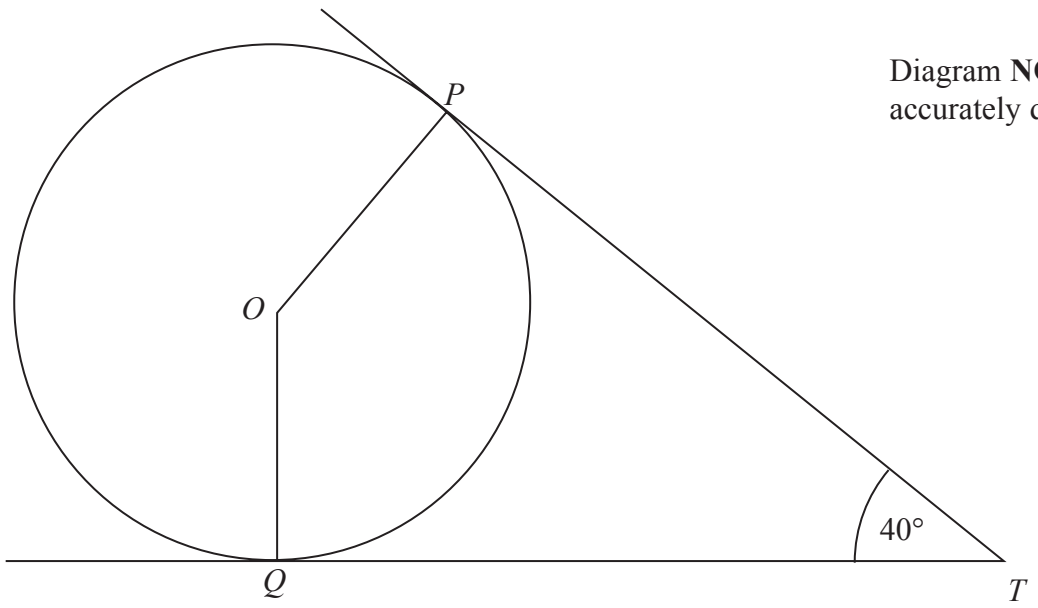


Diagram **NOT** accurately drawn

P and *Q* are two points on a circle centre *O*.

The tangents to the circle at *P* and *Q* intersect at the point *T*.

(a) Write down the size of angle *OQT*.

.....°

(1)

(b) Calculate the size of the obtuse angle *POQ*.

.....°

(2)

(c) Give reasons why angle *PQT* is 70°

.....

.....

(2)

Q8

(Total 5 marks)

Leave blank

9. Write $\frac{x}{x-2} - \frac{3}{x(x-2)}$ as a single fraction in its simplest form.

.....

Q9

(Total 2 marks)

TOTAL FOR SECTION B: 25 MARKS

TOTAL FOR PAPER: 50 MARKS

END

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