Centre No.						Paper Reference								Surname	Initial(s)
Candidate No.						5	3	8	3	H	/	1	0	Signature	

Paper Reference(s)

5383H/10

Edexcel GCSE

Mathematics (Modular) – 2381

Paper 10 (Calculator)

Higher Tier

Unit 2 Stage 2

Thursday 13 November 2008 – Afternoon

Time: 30 minutes

Materials required for examination	Items included with question papers
Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used.	Nil

Examiner's use only

Team Leader's use only

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)**.
There are 9 questions in this question paper. The total mark for this paper is 25.
There are 8 pages in this question paper. Any blank pages are indicated.
Calculators may be used.
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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Turn over

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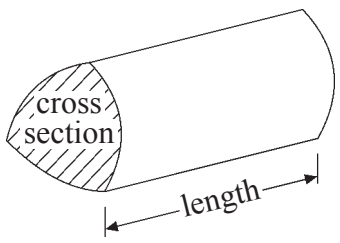
GCSE Mathematics

Formulae: Higher Tier

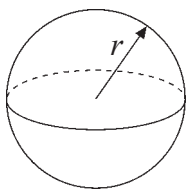
You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

Volume of a prism = area of cross section × length



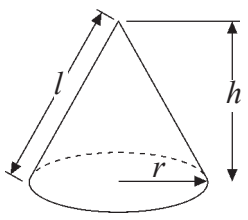
Volume of sphere $= \frac{4}{3}\pi r^3$

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

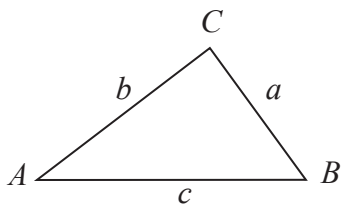


Volume of cone $= \frac{1}{3}\pi r^2 h$

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

Answer ALL NINE questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1. Use your calculator to work out

$$\sqrt{12.63 + 18^2}$$

Write down all the figures on your calculator display.

.....

(Total 2 marks)

Q1

2. (a) Simplify

$$8e - 3f - e - 3f$$

.....

(2)

(b) Expand

$$2(3c - 2)$$

.....

(1)

(c) Factorise

$$xy + 3x$$

.....

(1)

Q2

(Total 4 marks)

Leave blank

3.

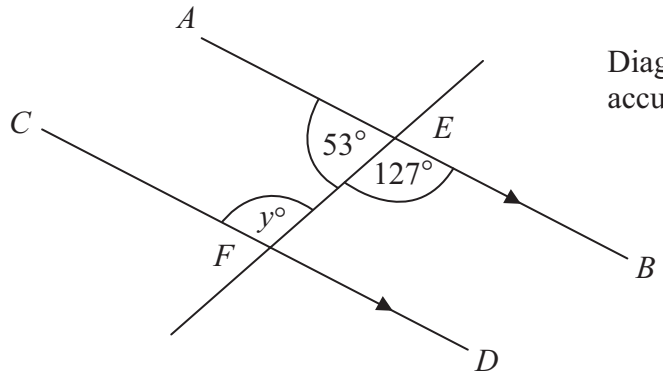


Diagram **NOT** accurately drawn

AB is parallel to *CD*.
Angle *BEF* = 127°

(i) Write down the value of *y*.

y = ...

(ii) Give a reason for your answer.

.....

Q3

(Total 2 marks)

4. Work out $(8 \times 10^6) \div (2 \times 10^{18})$
Give your answer in standard form.

.....

Q4

(Total 2 marks)

Leave blank

5.

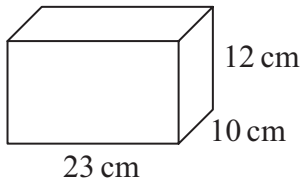


Diagram **NOT** accurately drawn

(a) Work out the volume of this solid cuboid.

..... cm^3

(2)

The solid cuboid is made of plastic.
The plastic has a density of 0.8 grams per cm^3.

(b) Work out the mass of the cuboid.

..... grams

(2)

Q5

(Total 4 marks)

6. (a) Expand and simplify $(y + 2)(y + 3)$

.....

(2)

(b) Simplify $\dfrac{3(x-2)}{x^2-7x+10}$

.....

(2)

Q6

(Total 4 marks)

Leave blank

7.

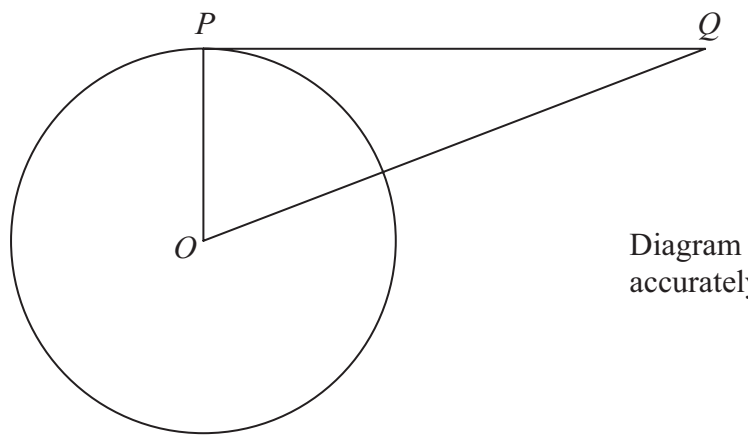


Diagram **NOT** accurately drawn

P is a point on the circumference of the circle, centre *O*.
PQ is a tangent to the circle.

(i) Write down the size of angle *OPQ*.

..... °

(ii) Give a reason for your answer.

.....

.....

Q7

(Total 2 marks)

8. Simplify fully $\frac{x+3}{4} + \frac{x-5}{3}$

.....

Q8

(Total 3 marks)

Leave blank

9. Prove that $0.4\dot{7}\dot{3}$ can be written as the fraction $\frac{469}{990}$

Q9

(Total 2 marks)

TOTAL FOR PAPER: 25 MARKS

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