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

Tuesday 2 March 2010 – Afternoon

Time: 30 minutes

Examiner's use only		

Team Leader's use only		

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)**.
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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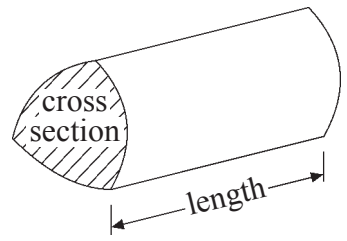
GCSE Mathematics 2381

Formulae: Higher Tier

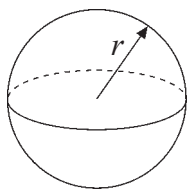
You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

Volume of a prism = area of cross section × length



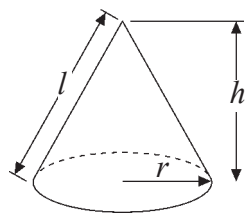
Volume of sphere $= \frac{4}{3}\pi r^3$

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

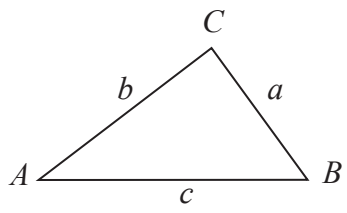


Volume of cone $= \frac{1}{3}\pi r^2 h$

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. The weight of a chocolate bar is 120 grams.
15% of the weight is protein.

Work out the weight of the protein in the chocolate bar.

..... g

Q1

(Total 2 marks)

2.

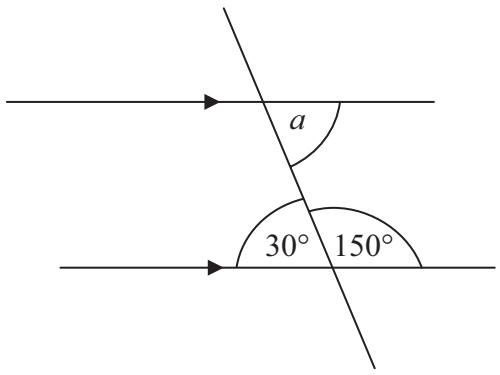


Diagram **NOT** accurately drawn

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

..... °

(ii) Give a reason for your answer.

.....

.....

Q2

(Total 2 marks)

Turn over

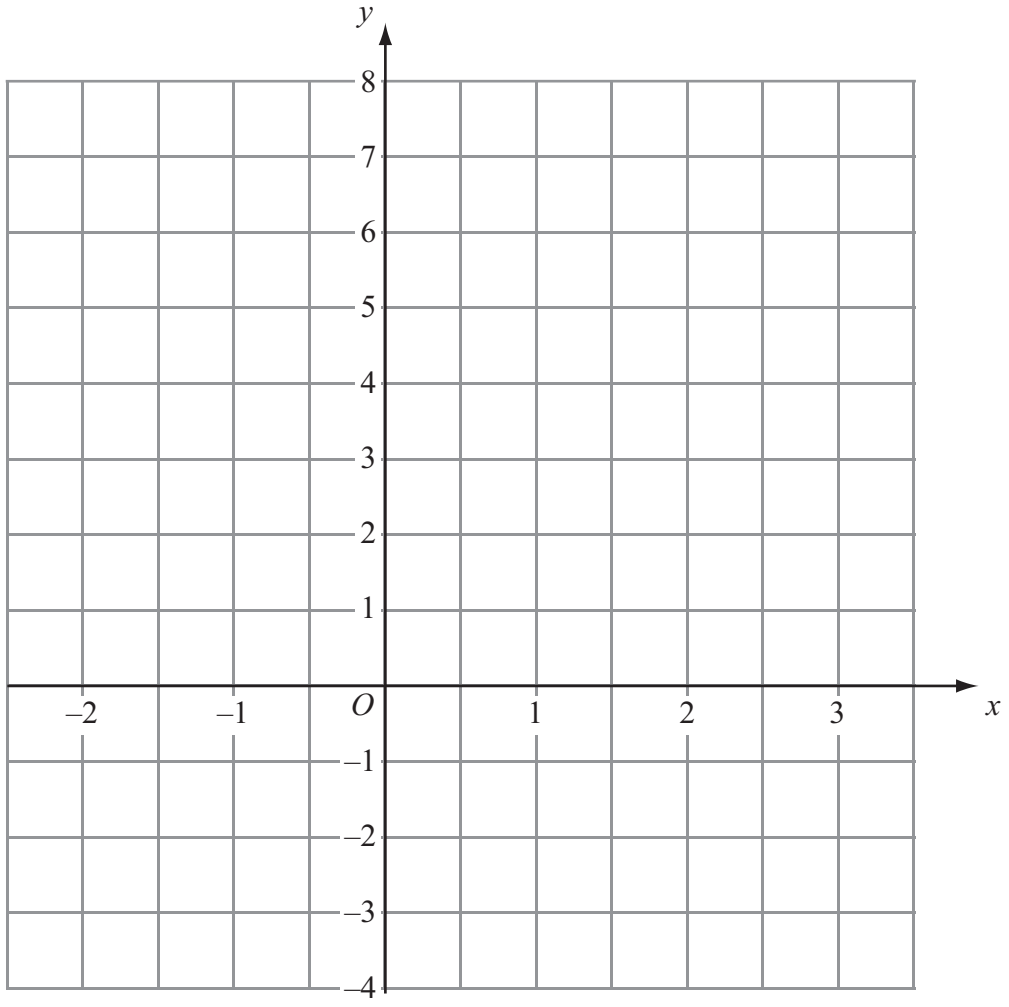
Leave blank

3. (a) Complete the table of values for $y = 2x + 1$

x	– 2	– 1	0	1	2	3
y		– 1			5	

(2)

(b) On the grid, draw the graph of $y = 2x + 1$



(2) **Q3**

(Total 4 marks)

Leave blank

4.

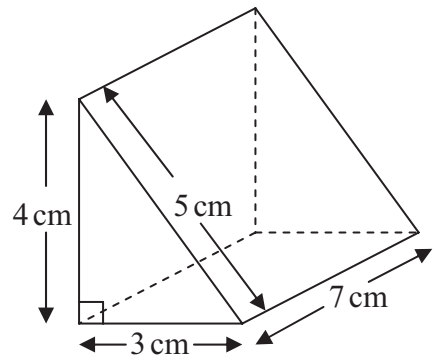


Diagram **NOT** accurately drawn

Work out the volume of the triangular prism.

..... cm^3

(Total 2 marks)

Q4

5. (a) Expand $x(x - 5)$

.....

(1)

(b) Factorise $4y + 6$

.....

(1)

(c) Factorise $x^2 - 36$

.....

(1)

Q5

(Total 3 marks)

Leave blank

6. (a) Write 2.7×10^5 as an ordinary number.

.....

(1)

(b) Work out the value of $(4 \times 10^9) \times (3 \times 10^{-2})$

Give your answer in standard form.

.....

(2) **Q6**

(Total 3 marks)

7.

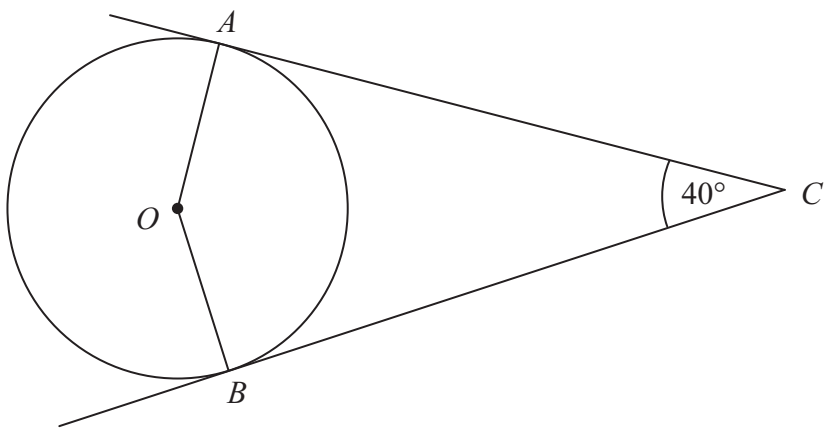


Diagram **NOT** accurately drawn

A and *B* are points on the circumference of a circle, centre *O*.
AC and *BC* are tangents to the circle.

Angle *ACB* = 40°.

Find the size of angle *ABO*.

..... °

Q7

(Total 3 marks)

Leave blank

8. Simplify fully $\dfrac{3x^2 + 6x}{2x^2 + x - 6}$

.....

Q8

(Total 3 marks)

9. Prove that the recurring decimal $0.4\dot{2}\dot{7}$ can be written as the fraction $\dfrac{47}{110}$

Q9

(Total 3 marks)

TOTAL FOR PAPER: 25 MARKS

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