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

Paper Reference(s)

5383H/10

Examiner's use only

Team Leader's use only

Edexcel GCSE

Mathematics (Modular) – 2381

Paper 10 (Calculator)

Higher Tier

Unit 2 Stage 2

Thursday 11 June 2009 – Afternoon

Time: 30 minutes

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 10 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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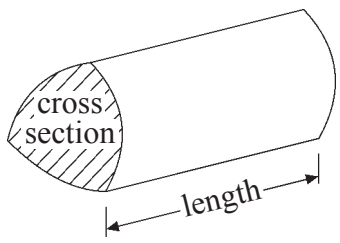
GCSE Mathematics

Formulae: Higher Tier

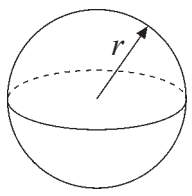
You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

Volume of a prism = area of cross section × length



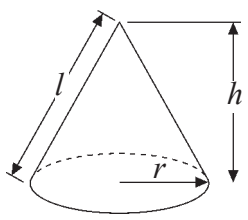
Volume of sphere $= \frac{4}{3}\pi r^3$

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

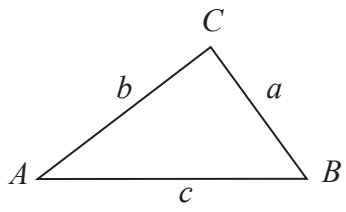


Volume of cone $= \frac{1}{3}\pi r^2 h$

Curved surface area of cone $= \pi r l$



In any triangle ABC



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

The Quadratic Equation

The solutions of $ax^2 + bx + c = 0$ where $a \neq 0$, are given by

$$x = \frac{-b \pm \sqrt{(b^2 - 4ac)}}{2a}$$

Leave blank

Answer ALL TEN questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1. Work out $\dfrac{3.4^2 - 2.6^2}{1.6}$

.....

(Total 2 marks)

Q1

2.

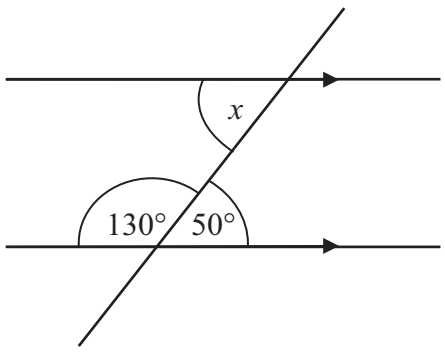


Diagram **NOT** accurately drawn

(a) Write down the size of the angle marked x.

.....°

(1)

(b) Give a reason for your answer.

.....

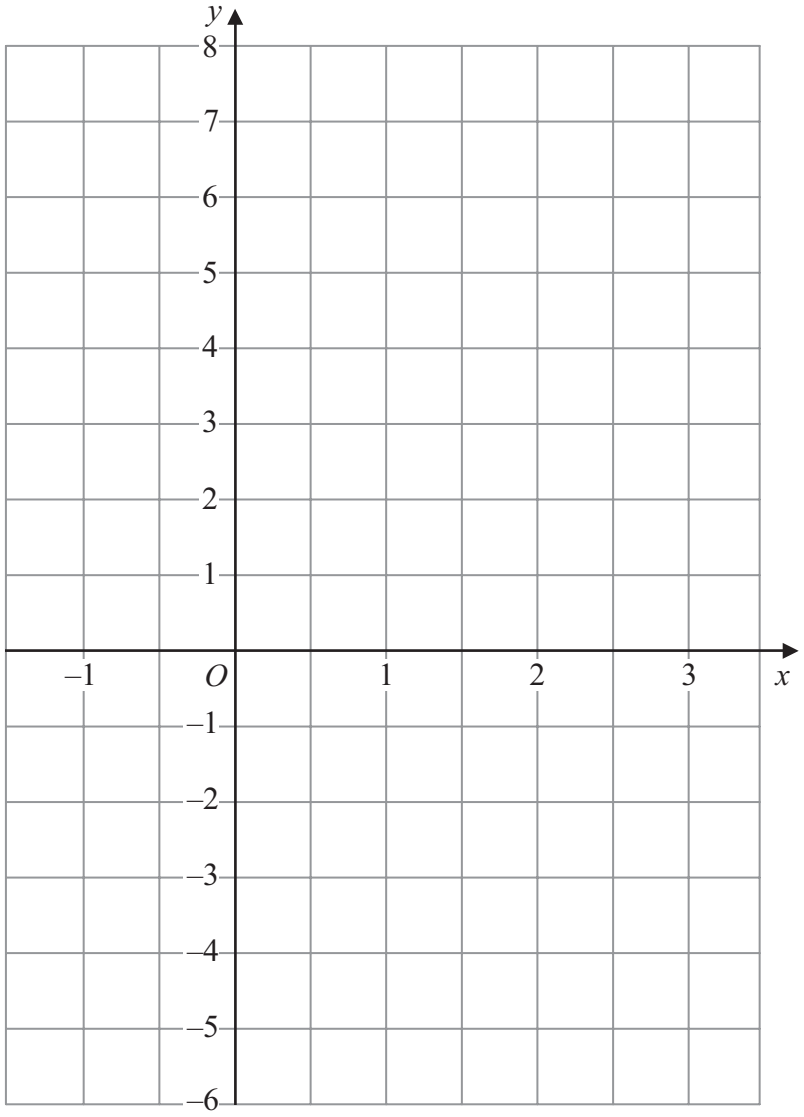
(1)

(Total 2 marks)

Q2

Leave blank

3. Draw the graph of $y = 3x - 2$ for values of x from -1 to 3



Q3

(Total 3 marks)

Leave blank

4. The diagram shows a prism.

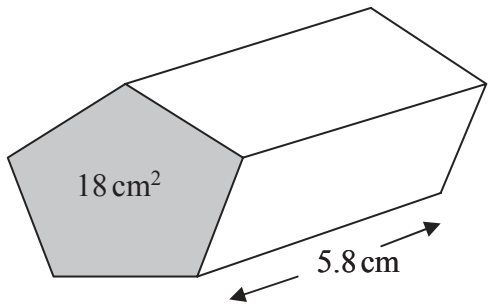


Diagram **NOT** accurately drawn

The area of the cross section of the prism is 18 cm^2.
The length of the prism is 5.8 cm.

Work out the volume of the prism.

..... cm^3

Q4

(Total 2 marks)

5. (a) Expand and simplify $3(2x + 3) + 2(x + 1)$

.....

(2)

(b) Expand and simplify $(y - 3)(y + 4)$

.....

(2)

Q5

(Total 4 marks)

Turn over

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6.

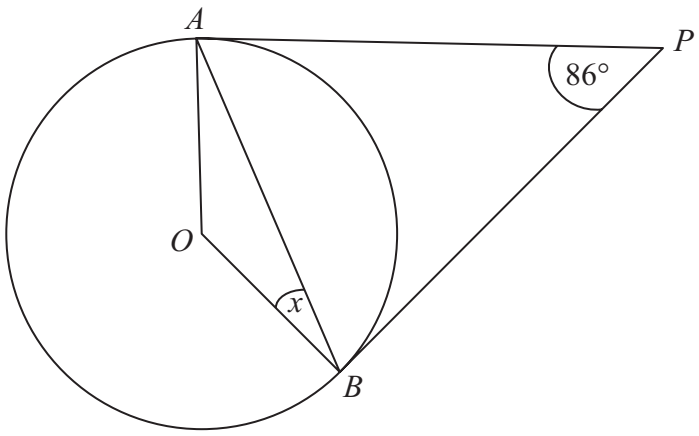

Diagram **NOT** accurately drawn

A and *B* are points on the circumference of a circle, centre *O*.
PA and *PB* are tangents to the circle.
Angle *APB* is 86°.

Work out the size of the angle marked *x*.

..... °

Q6

(Total 2 marks)

7. Work out $(3 \times 10^{6}) \times (5 \times 10^{-4})$

Give your answer in standard form.

..... **Q7**

(Total 2 marks)

Leave blank

8. Prove that the recurring decimal $0.\dot{1}\dot{7} = \frac{17}{99}$

Q8

(Total 2 marks)

9. Simplify fully $\frac{2x^2 + 3x + 1}{x^2 - 3x - 4}$

Q9

.....

(Total 3 marks)

Leave blank

10. The density of juice is 4 grams per cm^3.
The density of water is 1 gram per cm^3.

315 cm^3 of drink is made by mixing 15 cm^3 of juice with 300 cm^3 of water.

Work out the density of the drink.

..... grams per cm^3 **Q10**

(Total 3 marks)

TOTAL FOR PAPER: 25 MARKS

END