Centre No.						Paper Reference							Surname	Initial(s)
Candidate No.						5	5	1	3	/	13	A	Signature	

Paper Reference(s)

5513/13A

Examiner's use only

Team Leader's use only

Edexcel GCSE

Mathematics B – 1388

Paper 13 – Section A (Non-Calculator)

Higher Tier

Section	Leave Blank
A	
B	

Module Test 2

Tuesday 7 November 2006 – Afternoon

Time for Section A: 25 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 6 questions. The total mark for this section is 19. The total mark for this paper is 38.
There are 8 pages in this question paper. Any blank pages are indicated.
Calculators may be used for Section B 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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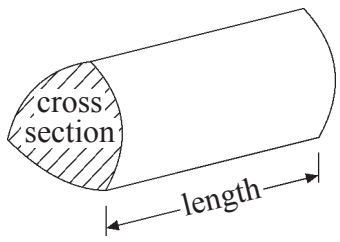
GCSE Mathematics 1387/8

Formulae: Higher Tier

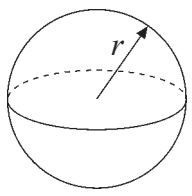
You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

Volume of a prism = area of cross section × length



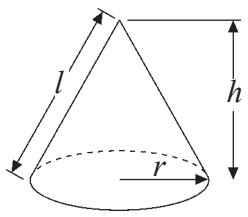
Volume of sphere $= \frac{4}{3}\pi r^3$

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

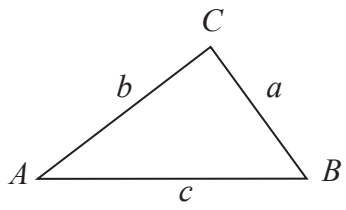


Volume of cone $= \frac{1}{3}\pi r^2 h$

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 SIX 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. The diagram shows a prism.

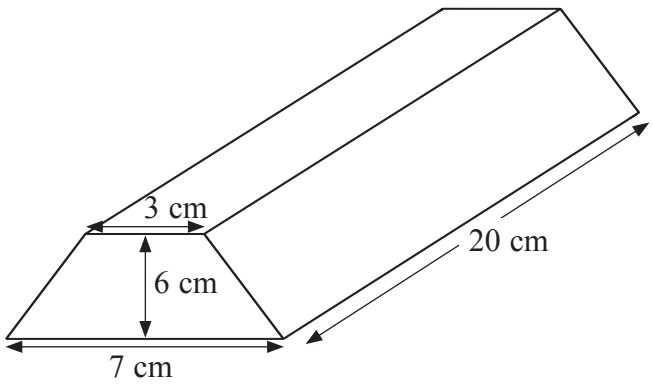


Diagram **NOT** accurately drawn

The cross section of the prism is a trapezium.

The parallel sides of the trapezium are 7 cm and 3 cm.
The height of the trapezium is 6 cm.
The length of the prism is 20 cm.

Work out the volume of the prism.

.....cm^3

(Total 3 marks)

Q1

Leave blank

2. (a) Simplify $6^8 \times 6^5$

.....
(1)

(b) Simplify $\frac{6^3}{6^{11}}$

.....
(1)

(c) Write down the value of 6^0

.....
(1)

(Total 3 marks)

Q2

3. Solve the simultaneous equations.

$4x + 2y = 5$

$3x - 5y = 7$

$x =$ .....

$y =$ .....

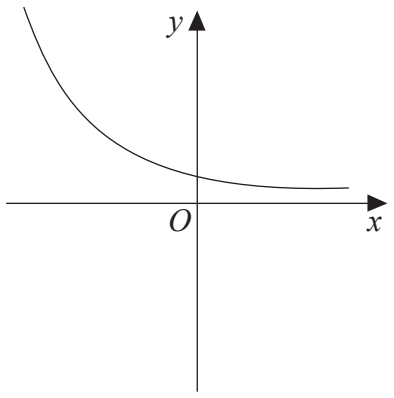
(Total 4 marks)

Q3

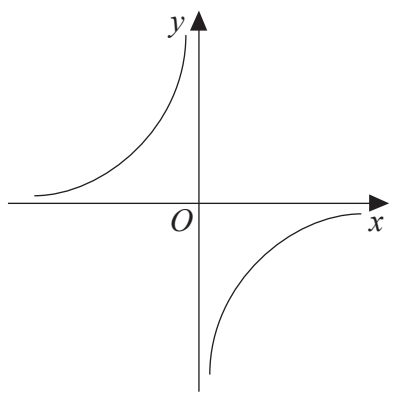
Leave blank

4.

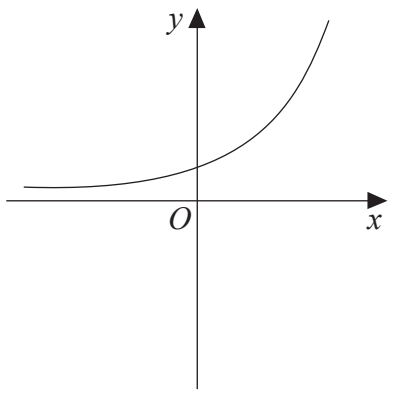
A



B



C



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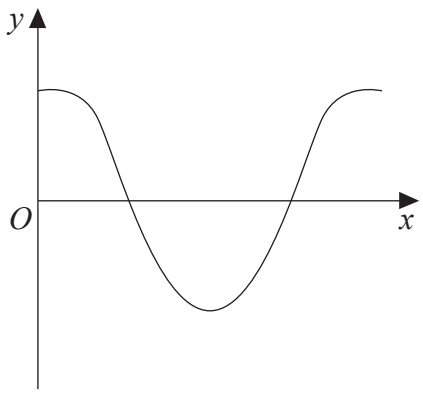

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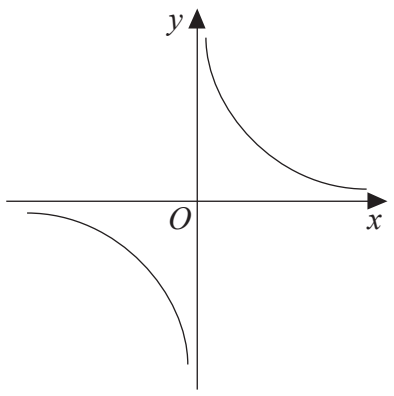
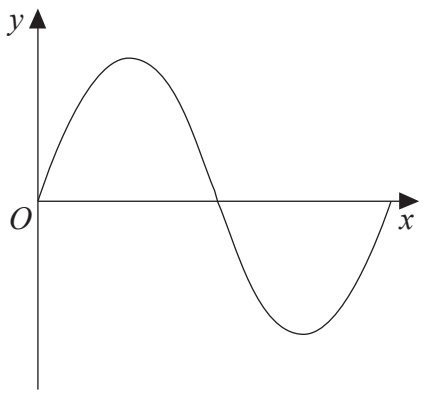


F



Write down the letter of the graph which could have the equation

(i) $y = \frac{2}{x}$ .....

(ii) $y = 2^x$ .....

(iii) $y = \sin x$ .....

(Total 3 marks)

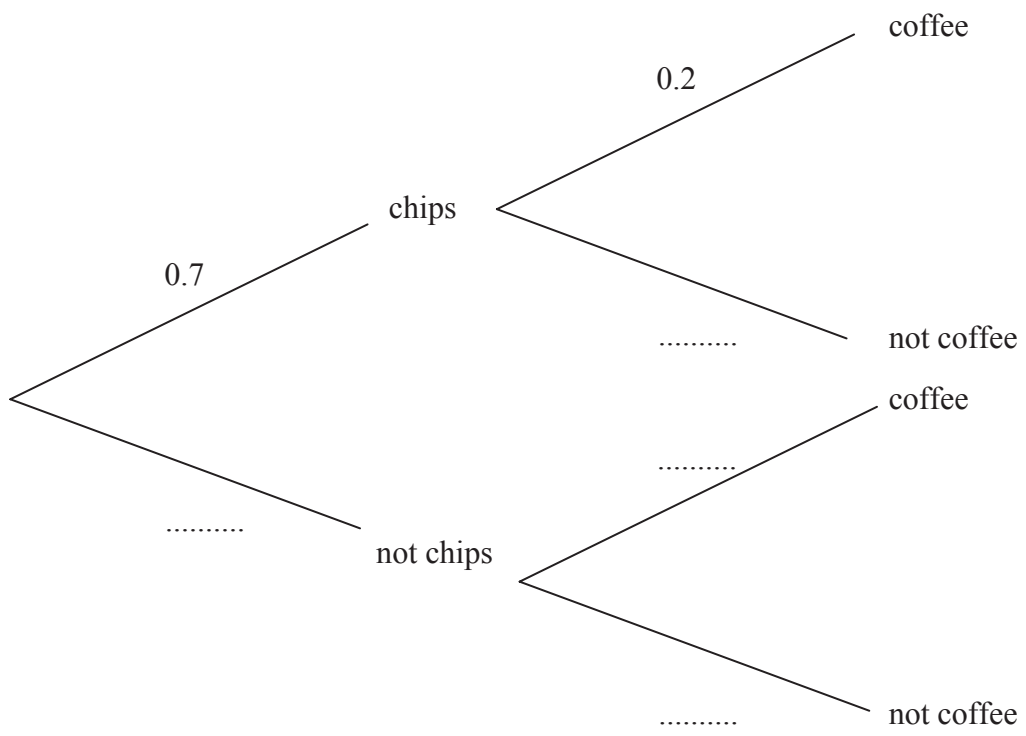
Q4

Turn over

Leave blank

5. In a café, the probability that a customer orders chips is 0.7
In the same café, the probability that a customer orders coffee is 0.2
The two events are independent.

(a) Complete the probability tree diagram.



(2)

(b) Work out the probability that a customer will order both chips and coffee.

.....

(2) **Q5**

(Total 4 marks)

Leave blank

6. $f = \frac{n}{r}$

n = 1.49 correct to 2 decimal places.

r = 0.5 correct to 1 significant figure.

Write down the value of n and the value of r which are substituted into the formula to calculate the upper bound of f.

n = ...

r = ... **Q6**

(Total 2 marks)

TOTAL FOR SECTION A: 19 MARKS

END

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