Centre No.						Paper Reference							Surname	Initial(s)
Candidate No.						5	5	3	6	/	1	6	Signature	

Paper Reference(s)

5536/16

Examiner's use only

Team Leader's use only

Edexcel GCSE

Mathematics B – 1388

Paper 16 (Non-Calculator)

Intermediate Tier

Tuesday 7 June 2005 – Afternoon

Time: 1 hour 15 minutes

ND010043507

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 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

There are 19 questions in this question paper. The total mark for this paper is 62.
The marks for individual questions and the parts of questions are shown in round brackets: e.g. **(2)**.
Calculators must not be used.

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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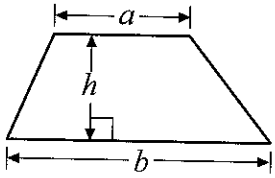
edexcel

GCSE Mathematics 1387/8

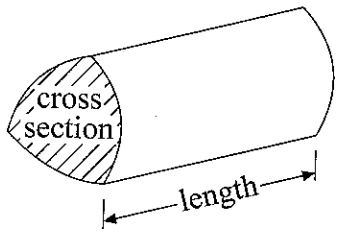
Formulae: Intermediate Tier

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

Area of trapezium = $\frac{1}{2}(a+b)h$



Volume of prism = area of cross section × length



Leave blank

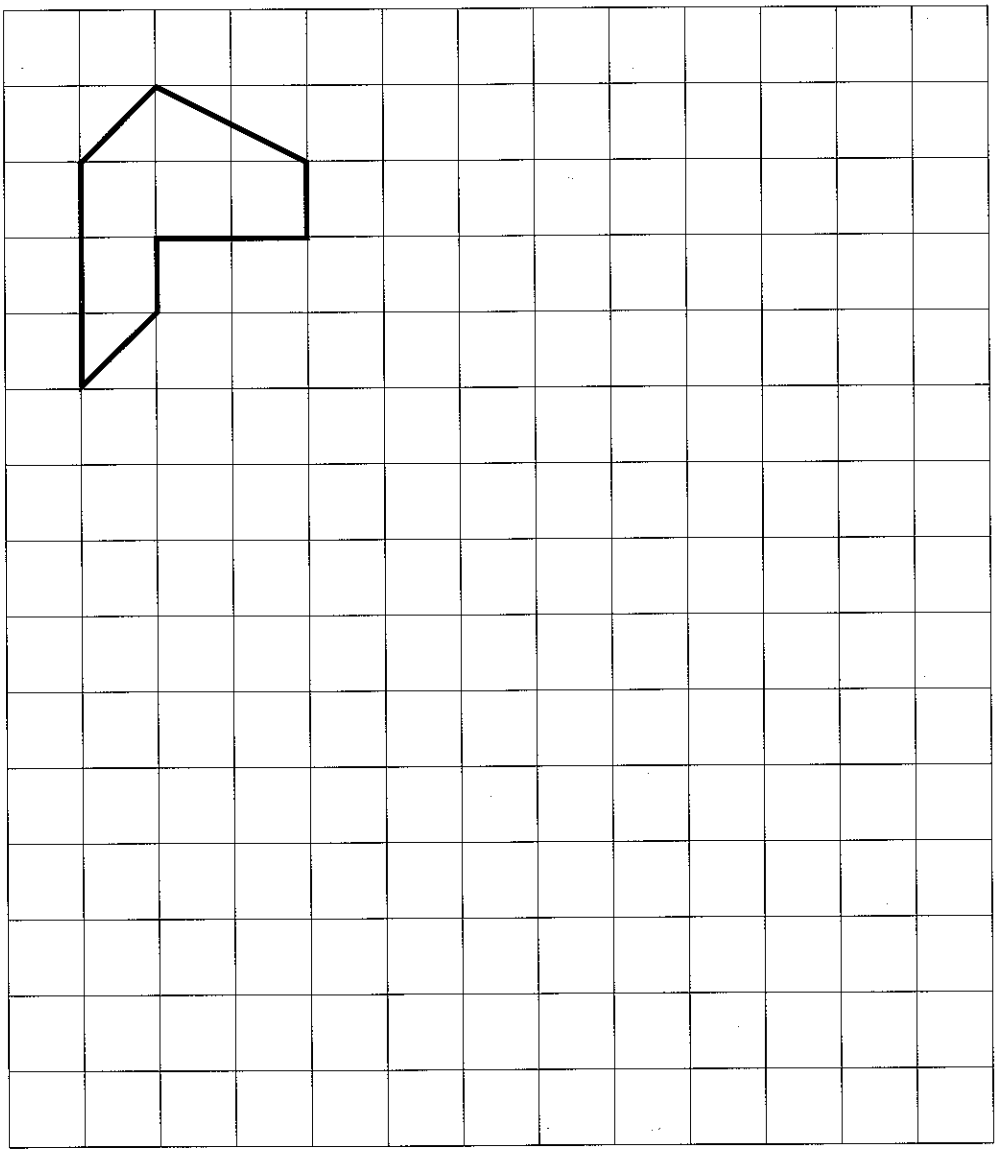
Answer ALL NINETEEN questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

You must NOT use a calculator.

1. On the grid, enlarge the shape with a scale factor of 2.



Q1

(Total 2 marks)

Leave blank

2. (a) Simplify $3y^2 - y^2$

.....

(1)

(b) Simplify $5c + 7d - 2c - 3d$

.....

(2)

(Total 3 marks)

Q2

3. The diagram shows a 5-sided shape.
All the sides of the shape are equal in length.

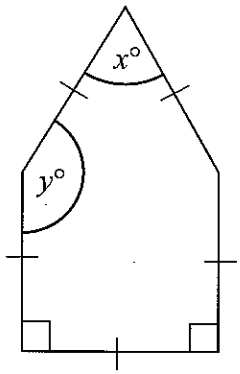


Diagram **NOT** accurately drawn

(a) (i) Find the value of x.

$x =$ .....

(ii) Give a reason for your answer.

.....

(2)

(b) Work out the value of y.

$y =$ .....

(2)

(Total 4 marks)

Q3

Leave blank

4. The cost of a calculator is £6.79

Work out the cost of 28 of these calculators.

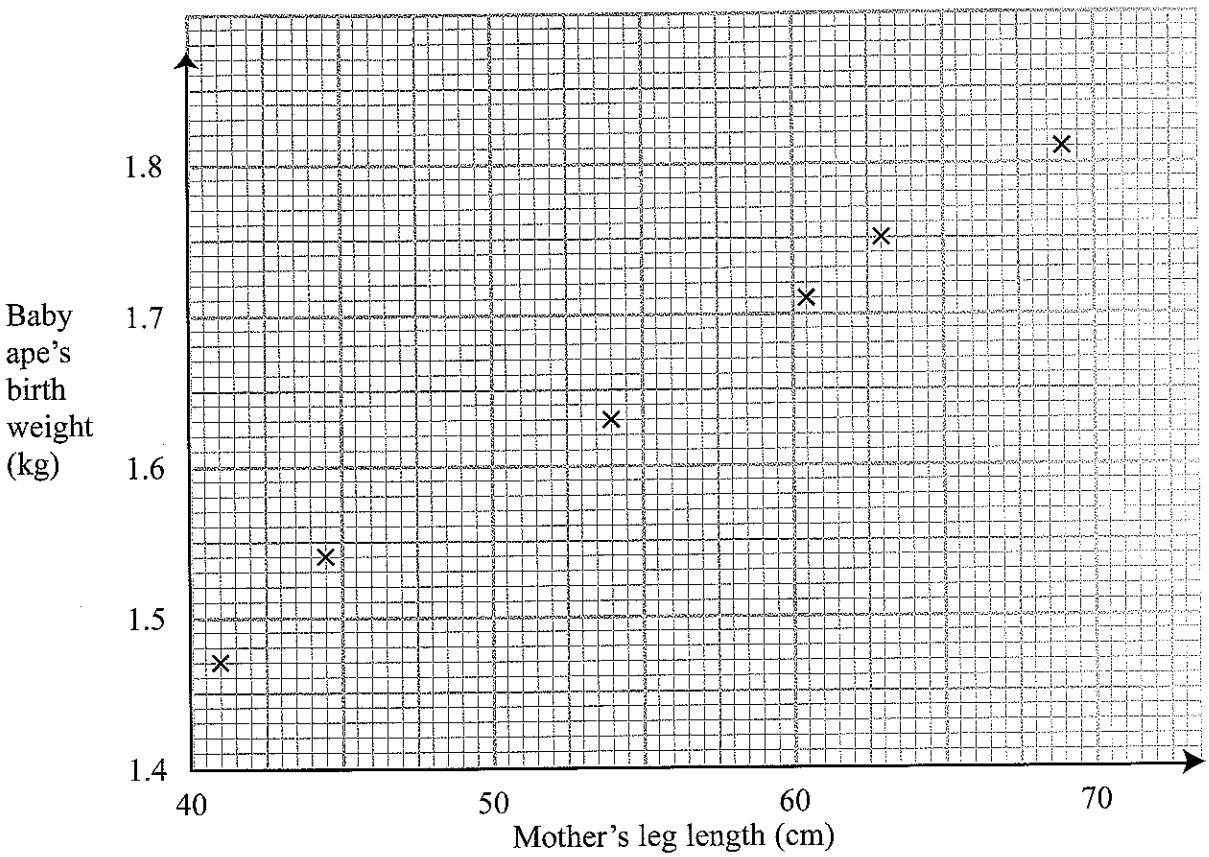
£ .....

Q4

(Total 3 marks)

Leave blank

5. The scatter graph shows some information about six new-born baby apes.
For each baby ape, it shows the mother's leg length and the baby ape's birth weight.



The table shows the mother's leg length and the birth weight of two more baby apes.

Mother's leg length (cm)	50	65
Baby ape's birth weight (kg)	1.6	1.75

(a) On the scatter graph, plot the information from the table.

(1)

(b) Describe the **correlation** between a mother's leg length and her baby ape's birth weight.

.....

(1)

(c) Draw a line of best fit on the diagram.

(1)

A mother's leg length is 55 cm.

(d) Use your line of best fit to estimate the birth weight of her baby ape.

..... kg

(1)

(Total 4 marks)

Q5

Leave blank

6. Here are the ingredients needed to make 500 m*l* of custard.

Custard

makes 500 m*l*

400 m*l* of milk
3 large egg yolks
50 g sugar
2 teaspoons of cornflour

(a) Work out the amount of sugar needed to make 2000 m*l* of custard.

..... g
(2)

(b) Work out the amount of milk needed to make 750 m*l* of custard.

..... m*l*
(2)

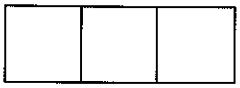
Q6

(Total 4 marks)

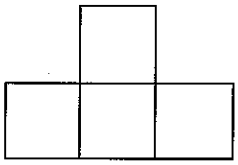
Leave blank

7. Here are the plan, front elevation and side elevation of a 3-D shape.

plan



front elevation



side elevation

In the space below, draw a sketch of the 3-D shape.

Q7

(Total 2 marks)

Leave blank

8. Work out an estimate for the value of $\dfrac{637}{3.2 \times 9.8}$

.....

Q8

(Total 2 marks)

9. (a) Write as a power of 5

(i) $5^4 \times 5^2$

.....

(ii) $5^9 \div 5^6$

.....

(2)

(b) $2^x \times 2^y = 2^{10}$

and

$2^x \div 2^y = 2^4$

Work out the value of x and the value of y.

$x =$ .....

$y =$ .....

(3)

Q9

(Total 5 marks)

Leave blank

10. (a) Solve $5-3x=2(x+1)$

$x =$ .....

(3)

(b) $-3 \leqslant y < 3$
y is an integer.

Write down all the possible values of y.

.....

(2)

(Total 5 marks)

Q10

11. Work out the value of $\frac{2}{3} \times \frac{3}{4}$

Give your answer as a fraction in its simplest form.

.....

(Total 2 marks)

Q11

Leave blank

12.

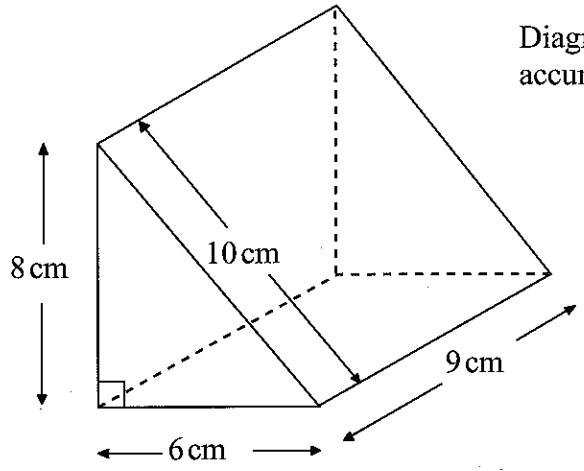


Diagram **NOT** accurately drawn

Work out the surface area of the triangular prism.
State the units with your answer.

.....

Q12

(Total 4 marks)

13. The table shows some expressions.
a, b, c and d represent lengths.
π and 3 are numbers which have no dimensions.

$3a^2$	$\frac{\pi ab^3}{3d}$	πbc	$ac+bd$	$\pi(a+b)$	$3(c+d)^3$	$3\pi bc^2$

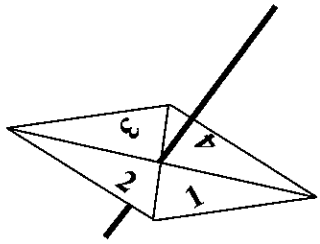
Tick (✔) the boxes underneath the **three** expressions which could represent volumes.

Q13

(Total 3 marks)

Leave blank

14. Here is a 4-sided spinner.



The sides of the spinner are labelled 1, 2, 3 and 4.
The spinner is biased.
The probability that the spinner will land on each of the numbers 2 and 3 is given in the table.
The probability that the spinner will land on 1 is equal to the probability that it will land on 4.

Number	1	2	3	4
Probability	x	0.3	0.2	x

(a) Work out the value of x.

$x =$ .....

(2)

Sarah is going to spin the spinner 200 times.

(b) Work out an estimate for the number of times it will land on 2

.....

(2)

(Total 4 marks)

Q14

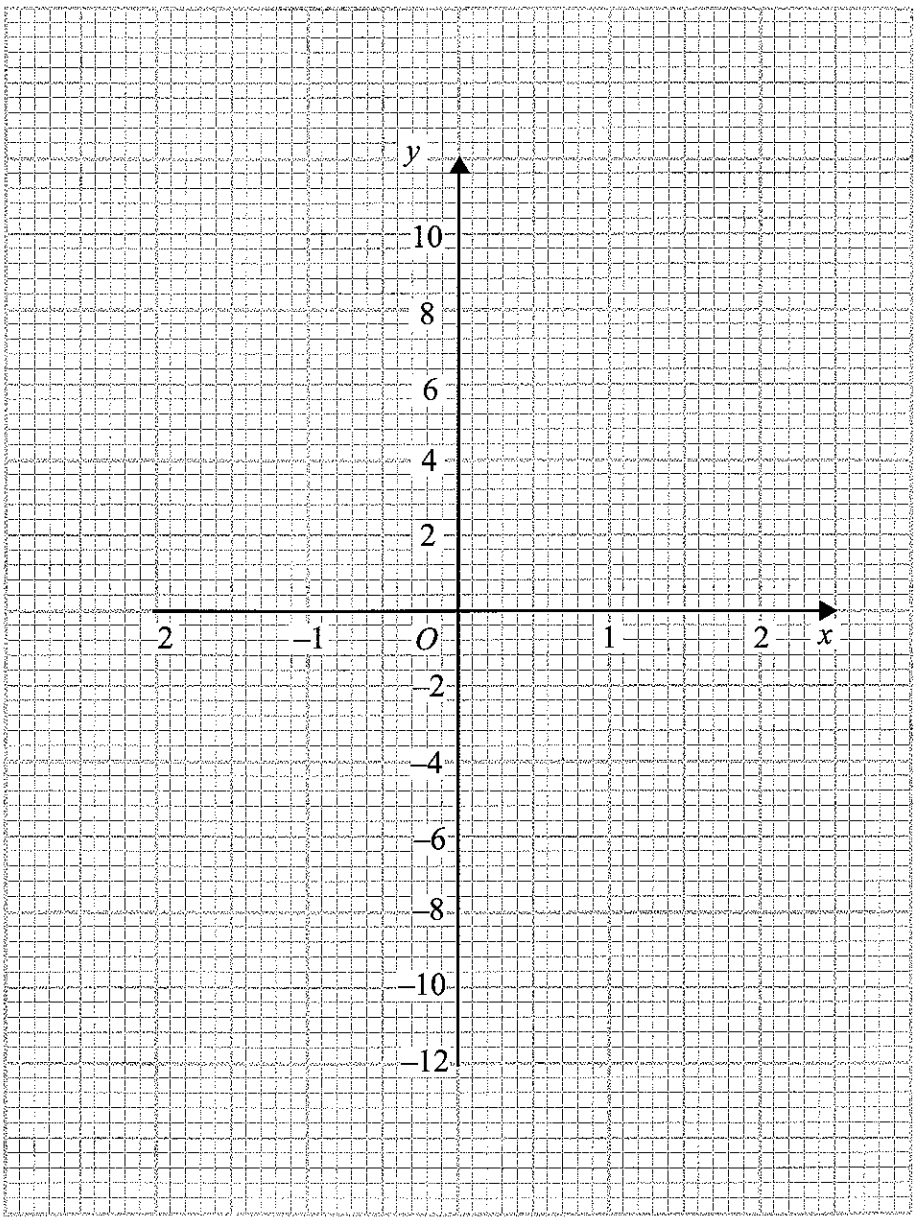
Leave blank

15. (a) Complete this table of values for $y = x^3 + x - 2$

x	–2	–1	0	1	2
y	–12			0	

(3)

(b) On the grid, draw the graph of $y = x^3 + x - 2$



(2)

(Total 5 marks)

Q15

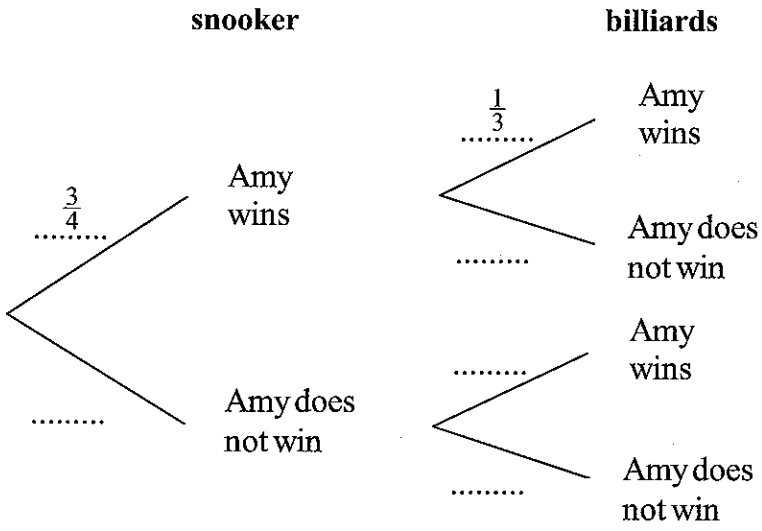
Leave blank

16. Amy is going to play one game of snooker and one game of billiards.

The probability that she will win the game of snooker is $\frac{3}{4}$

The probability that she will win the game of billiards is $\frac{1}{3}$

(a) Complete the probability tree diagram.



Q16

(Total 2 marks)

17. The number 40 can be written as $2^m \times n$, where m and n are prime numbers.

Find the value of m and the value of n.

m = ...

n = ...

Q17

(Total 2 marks)

Leave blank

18.

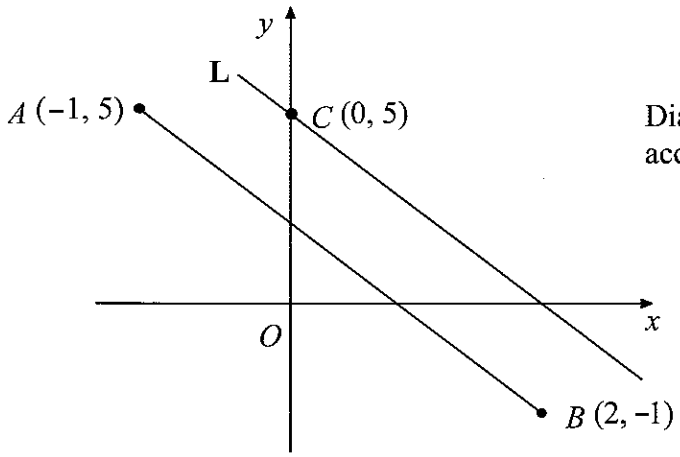


Diagram **NOT** accurately drawn

The diagram shows three points A (–1, 5), B (2, –1) and C (0, 5) .
The line **L** is parallel to AB and passes through C.

Find the equation of the line **L**.

.....

Q18

(Total 4 marks)

Leave blank

19.

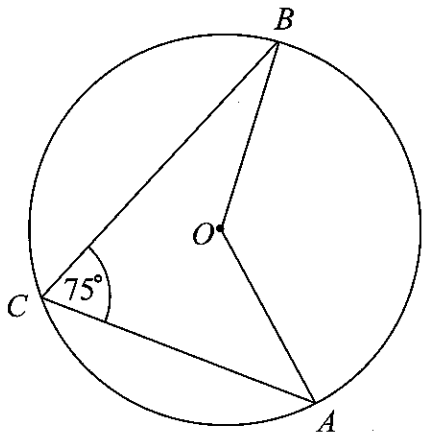


Diagram **NOT** accurately drawn

In the diagram, A, B and C are points on the circumference of a circle, centre O.
Angle $ACB = 75°$.

(i) Work out the size of angle AOB.

.....°

(ii) Give a reason for your answer.

.....

.....

Q19

(Total 2 marks)

TOTAL FOR PAPER: 62 MARKS

END