Centre No.						Surname	Initial(s)
Candidate No.						Signature	

Paper Reference(s)

4400/1F

London Examinations IGCSE

Mathematics

Paper 1F

Foundation Tier

Friday 4 November 2005 – Morning

Time: 2 hours

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 and candidate number, your surname, initial(s) and signature.
The paper reference is shown at the top of this page. Check that you have the correct question paper.
Answer **ALL** the questions in the spaces provided in this question paper.
Show all the steps in any calculations.

Information for Candidates

There are 20 pages in this question paper. All blank pages are indicated.
The total mark for this paper is 100. The marks for parts of questions are shown in round brackets: e.g. **(2)**.
You may use a calculator.

Advice to Candidates

Write your answers neatly and in good English.

Examiner's use only

Team Leader's use only

Page Number	Leave Blank
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
Total	

This publication may be reproduced only in accordance with Edexcel Limited copyright policy.
©2005 Edexcel Limited.

Printer's Log. No.
N23066A
W850/R4400/57570 4/3/3/3/1300

N 2 3 0 6 6 A 0 1 2 0

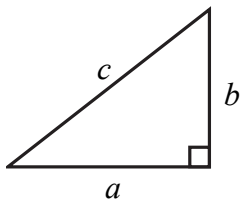
Turn over

edexcel INTERNATIONAL

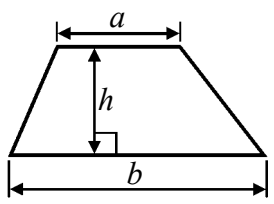
IGCSE MATHEMATICS 4400

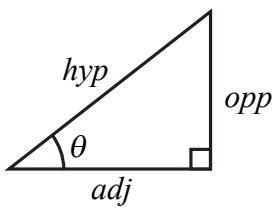
FORMULA SHEET – FOUNDATION TIER

Pythagoras' Theorem
$a^2 + b^2 = c^2$



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





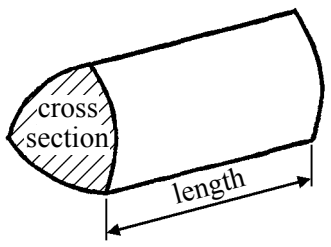
adj = hyp × cos θ
opp = hyp × sin θ
opp = adj × tan θ

or $\sin\theta = \frac{\text{opp}}{\text{hyp}}$

$\cos\theta = \frac{\text{adj}}{\text{hyp}}$

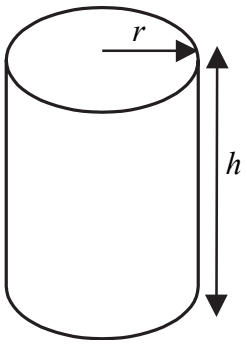
$\tan\theta = \frac{\text{opp}}{\text{adj}}$

Volume of prism = area of cross section × length



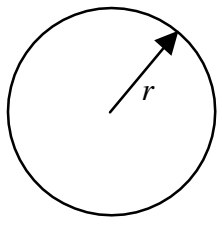
Circumference of circle = $2\pi r$

Area of circle = πr^2



Volume of cylinder = $\pi r^2 h$

Curved surface area of cylinder = $2\pi rh$



N 2 3 0 6 6 A 0 2 2 0

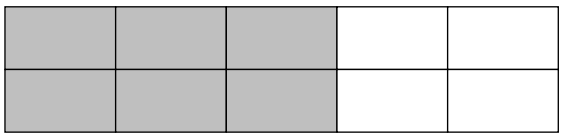
Leave blank

Answer ALL TWENTY ONE questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1. (a) (i)



What fraction of this shape is shaded?
Give your fraction in its simplest form.

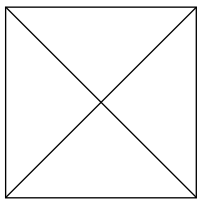
.....

(ii) Write your answer to part (i) as a decimal.

.....

(3)

(b) (i) Shade 75% of this square.



(ii) What percentage of the square is unshaded?

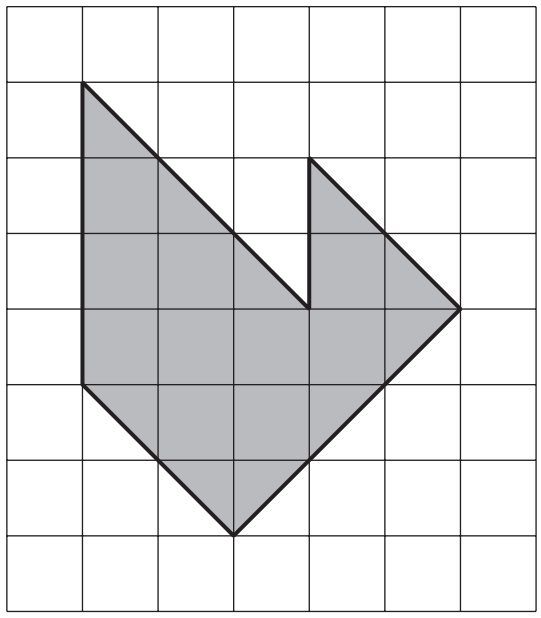
.....%

(2) **Q1**

(Total 5 marks)

Leave blank

2. A shaded shape is shown on a grid of centimetre squares.



(a) Mark with arrows (>) a pair of parallel lines.

(1)

(b) Mark with crosses (×) a pair of perpendicular lines.

(1)

(c) Mark with the letter R a reflex angle.

(1)

(d) Work out the area of the shaded shape.

..... cm^2

(2)

Q2

(Total 5 marks)

N 2 3 0 6 6 A 0 4 2 0

Leave blank

3. Jan thought of a number.
Here is a list of all the factors of her number.

1 2 4 5 10 20

(a) Write down the number Jan thought of.

.....

(1)

(b) From the numbers in the list, write down

(i) all the even numbers,

.....

(ii) all the multiples of 5,

.....

(iii) a square number,

.....

(iv) a prime number.

.....

(5)

(Total 6 marks)

Q3

Leave blank

4. The pictogram shows the number of gold medals won by each of 5 countries at the Olympic Games in 2004.

USA	⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ◔
China	⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕
Russia	⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ◔
Australia	
Japan	⊕ ⊕ ⊕ ⊕
Germany	⊕ ⊕ ⊕ ◖

⊕ represents 4 gold medals

(a) How many gold medals did China win?

.....

(1)

(b) How many gold medals did Russia win?

.....

(1)

(c) Australia won 17 gold medals.
Show this information on the pictogram.

(1)

(d) Write down the ratio of the number of gold medals won by the USA to the number of gold medals won by Germany.
Give your answer in its simplest form.

.....

(2)

Q4

(Total 5 marks)

Leave blank

5. A bottle of cola costs £1.26
Bill has £10 to spend.
He buys as many bottles of cola as he can.
He pays with a £10 note.

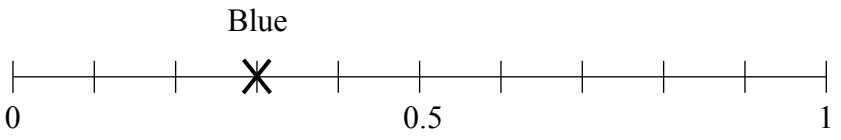
How much change should he receive?

£.....

(Total 3 marks)

Q5

6. A bag contains blue beads, red beads and green beads.
Mel is going to take a bead at random from the bag.
The probability that she will take a blue bead is shown on the probability scale.



The number of red beads is double the number of blue beads.

(a) On the probability scale, mark with a cross (×) the probability that Mel will take a red bead. Label it R.

(1)

(b) On the probability scale, mark with a cross (×) the probability that Mel will take a green bead. Label it G.

(1)

(c) On the probability scale, mark with a cross (×) the probability that Mel will take a yellow bead. Label it Y.

(1)

(d) Explain why the total number of beads in the bag cannot be 15

.....

.....

(2)

(Total 5 marks)

Q6

Leave blank

7. The 6-sided polygon is made from a square and 2 equilateral triangles.

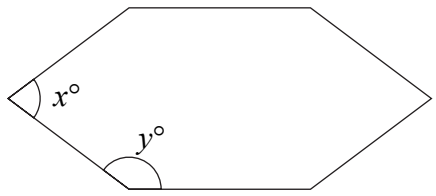


Diagram **NOT** accurately drawn

(a) Write down the special name for a 6-sided polygon.

.....

(1)

(b) Explain why this polygon is not a regular polygon.

.....

(1)

(c) For the polygon, write down

(i) how many lines of symmetry it has,

.....

(ii) its order of rotational symmetry.

.....

(2)

(d) The length of each side of the square is 7 cm.
Work out the perimeter of the polygon.

..... cm

(2)

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

$x =$ .....

(ii) Work out the value of y.

$y =$ .....

(2) **Q7**

(Total 8 marks)

N 2 3 0 6 6 A 0 8 2 0

Leave blank

8. (a) Write these numbers in order of size.
Start with the lowest.

–2 0 –6 –4

.....

(1)

(b) Work out

(i) 9 – 14

.....

(ii) 3 – (–8)

.....

(iii) –8 × –7

.....

(iv) $\frac{-36}{4}$

.....

(v) $(-5)^2$

.....

(5) **Q8**

(Total 6 marks)

N 2 3 0 6 6 A 0 9 2 0

Leave blank

9.

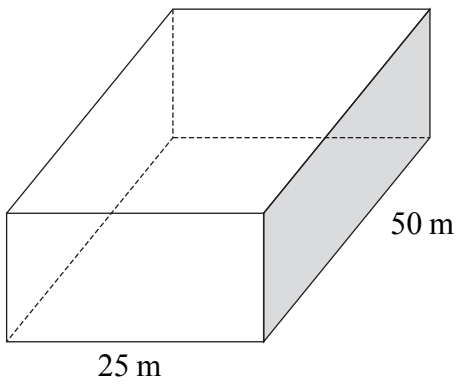


Diagram **NOT** accurately drawn

A swimming pool is in the shape of a cuboid.
The length of the pool is 50 m and its width is 25 m.
The volume of water in the pool is 3 750 000 litres.

The floor of the pool is horizontal.
1 m^3 = 1000 litres.

Work out the depth of the water in the pool.

..... m

(Total 3 marks)

Q9

10. Solve $x + 5 + x - 8 = 6$

x = ...

(Total 4 marks)

Q10

Leave blank

11. The table shows information about the number of bananas the students in class 1B ate in one week.

Number of bananas	Frequency
0	1
1	6
2	5
3	2
4	7
5	4

(a) Find the mode of the number of bananas.

.....

(1)

(b) Find the median of the number of bananas.

.....

(2)

(c) Work out the mean of the number of bananas.

.....

(3)

There are 575 students in the school.
The numbers of bananas eaten by students in class 1B are typical of the numbers eaten by students in the whole school.

(d) Work out an estimate for the number of students in the whole school who will eat exactly one banana next week.

.....

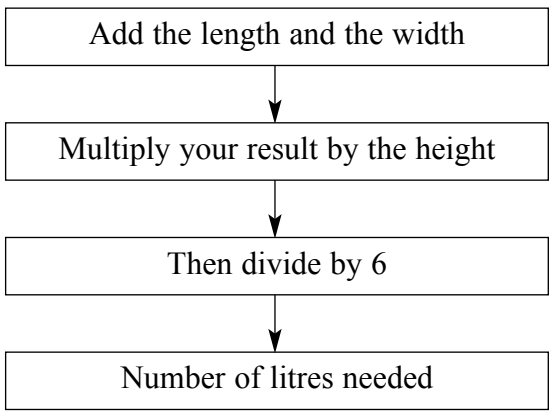
(3)

Q11

(Total 9 marks)

Leave blank

12. This rule can be used to work out the number of litres of paint needed to cover the walls of a room, using the length, width and height, in metres, of the room.



The length of a living room is 8 m.
Its width is 4 m and its height is 3 m.

(a) Work out the number of litres of paint needed to cover the walls of the living room.

..... litres
(2)

The length of a bedroom is 6 m and its width is 4 m.
5 litres of paint are needed to cover the walls of the bedroom.

(b) Work out the height of the bedroom.

..... m
(2)

The length of a bathroom is 5.5 m.
Its height is 2.4 m.
4 litres of paint are needed to cover the walls of the bathroom.

(c) Work out the width of the bathroom.

..... m
(2)

Leave blank

A room has length L metres, width W metres and height H metres.
N litres of paint are needed to cover the walls of the room.

(d) Find a formula for N in terms of L, W and H.

.....

(3)

Q12

(Total 9 marks)

13. (a) Use your calculator to work out the value of

$$2.6 - \frac{9.8}{2.7 + 1.2}$$

Write down all the figures on your calculator display.

.....

(2)

(b) Give your answer to part (a) correct to 2 significant figures.

.....

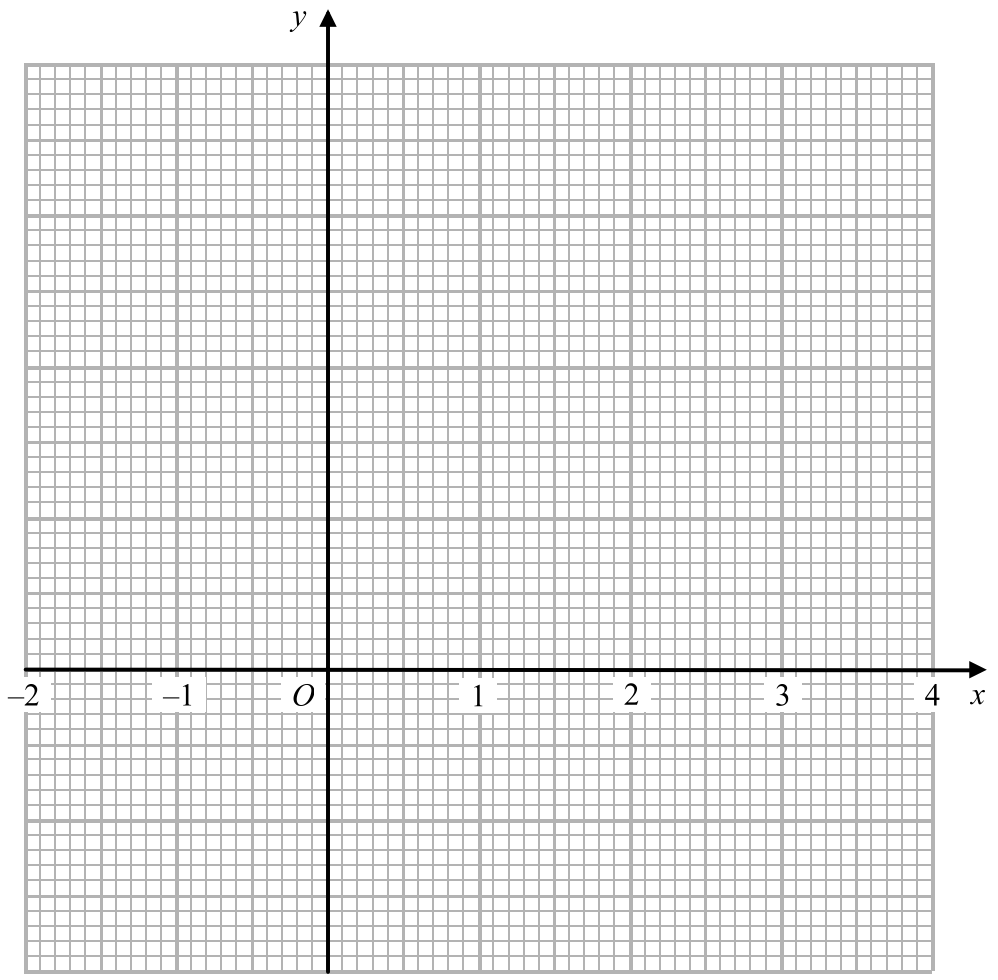
(1)

Q13

(Total 3 marks)

Leave blank

14. On the grid, draw the graph of $y = 3x + 5$ from $x = -2$ to $x = 4$



Q14

(Total 3 marks)

Leave blank

15. The lengths of two of the sides of a kite are 7.6 cm and 4.3 cm.
The length of the shorter diagonal of the kite is 5.2 cm.

In the space below, use ruler and compasses to **construct** an accurate, full-size drawing of the kite.
You must show all construction lines.

Q15

(Total 4 marks)

16. Pat drops a ball onto a wooden floor.
The ball bounces to a height which is 26% less than the height from which it is dropped.

Pat drops the ball from a height of 85 cm.

Calculate the height to which it first bounces.

..... cm

Q16

(Total 3 marks)

Leave blank

17.

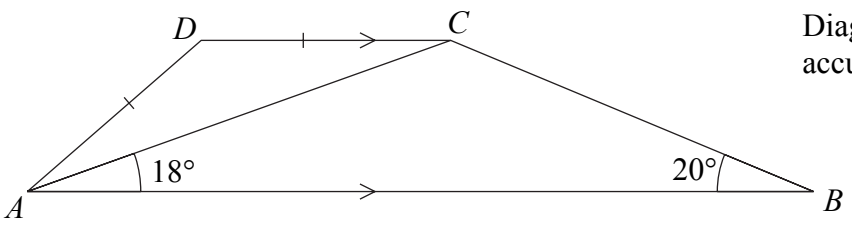


Diagram **NOT** accurately drawn

ABCD is a trapezium.
AB is parallel to *DC*.
Angle *BAC* = 18°.
Angle *ABC* = 20°.
AD = *DC*.

Calculate the size of angle *ADC*.
Give a reason for each step in your working.

°

.....

(Total 5 marks)

Q17

Leave blank

18. $$f = \frac{uv}{u+v}$$

Work out the value of f when $u = 5.7$ and $v = -7.6$

$f =$ .....

Q18

(Total 3 marks)

19. The amount of petrol a car uses is directly proportional to the distance it travels.
A car uses 3 litres of petrol when it travels 50 km.

(a) Work out the amount of petrol the car uses when it travels 125 km.

..... litres

(2)

(b) Work out the distance the car travels when it uses 5.7 litres of petrol.

..... km

(2)

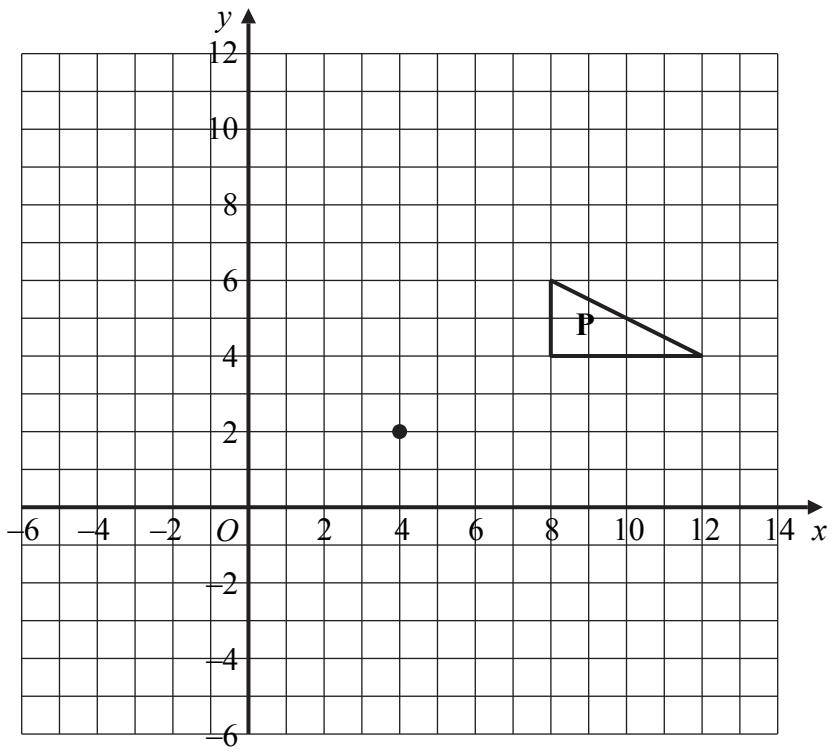
Q19

(Total 4 marks)

N 2 3 0 6 6 A 0 1 7 2 0

Leave blank

20. (a)



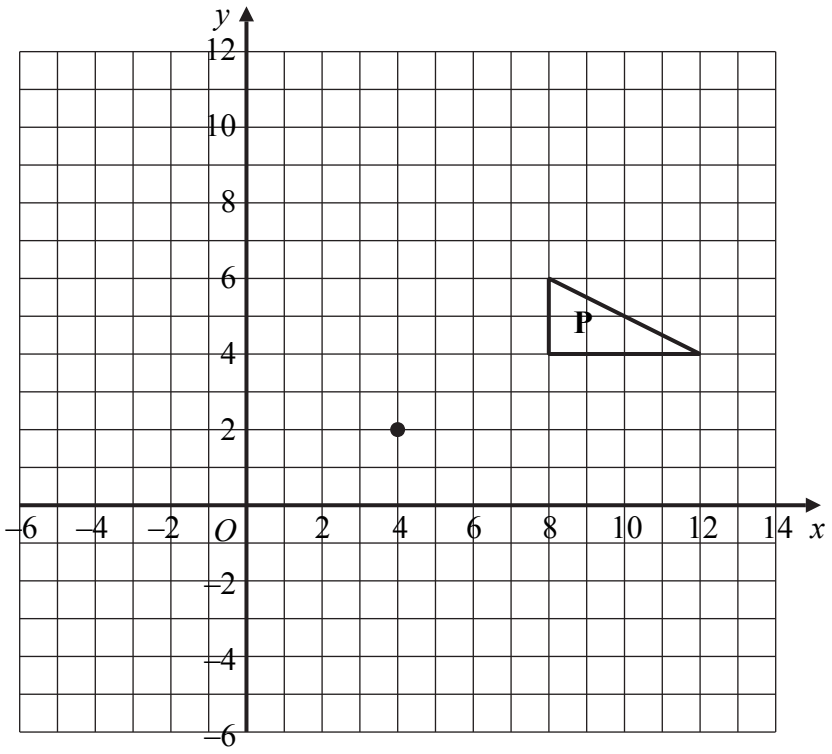
On the grid, rotate triangle **P** 90° anti-clockwise about the point (4, 2).

(2)

N 2 3 0 6 6 A 0 1 8 2 0

Leave blank

(b)



On the grid, enlarge triangle **P** with scale factor $\frac{1}{2}$ and centre (4, 2).

(2) **Q20**

(Total 4 marks)

Leave blank

21. Solve $\frac{5x+4}{3}=2$

$x =$ .....

Q21

(Total 3 marks)

TOTAL FOR PAPER: 100 MARKS

END