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

Paper Reference(s)

4400/2F

London Examinations IGCSE

Mathematics

Paper 2F

Foundation Tier

Tuesday 9 May 2006 – Morning

Time: 2 hours

Examiner's use only

Team Leader's use only

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Total	

Materials required for examination

Ruler graduated in centimetres and millimetres, 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, 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.

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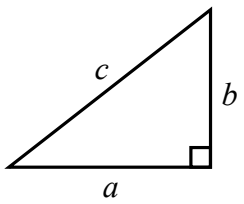
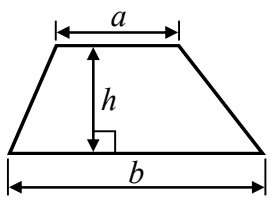
IGCSE MATHEMATICS 4400

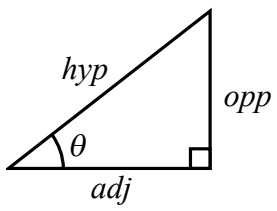
FORMULA SHEET – FOUNDATION TIER

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



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





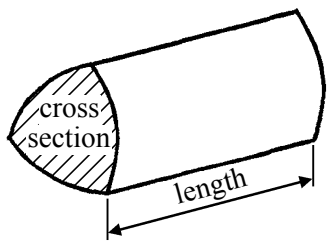
adj = hyp × cos θ
opp = hyp × sin θ
opp = adj × tan θ

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

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

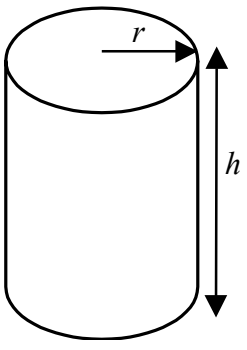
$\tan\theta = \frac{\text{opp}}{\text{adj}}$

Volume of prism = area of cross section × length



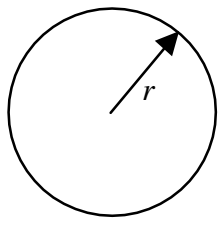
Circumference of circle = $2\pi r$

Area of circle = πr^2



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

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



N 2 4 6 4 5 A 0 2 2 0

Leave blank

Answer ALL TWENTY-ONE questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1. (a) Write these numbers in order of size.

Start with the smallest.

1009 909 999 10 000 1099

.....

(1)

(b) Which of these numbers is the lowest?

4 –3 7 –8 1

.....

(1)

(c) Which of these numbers are multiples of 3?

7 9 10 14 24 31

.....

(2)

(d) Write down all the factors of 35

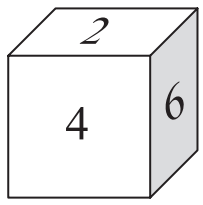
.....

(2) **Q1**

(Total 6 marks)

Leave blank

2. A dice has six faces.
Each face has a different number printed on it.
The numbers on the faces are 1, 2, 3, 4, 5 and 6
When the dice is thrown, the number facing upwards is the score.
All scores are equally likely.



Mohindar throws the dice once.

Certain	Likely	Unlikely	Impossible

Write down the word from the box that best describes each outcome.

(i) The score is more than 1

.....

(1)

(ii) The score is 6

.....

(1)

(iii) The score is 7

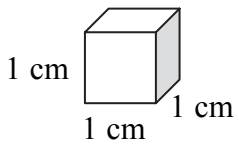
.....

(1) **Q2**

(Total 3 marks)

Leave blank

3. A solid prism is made from 1 cm cubes.



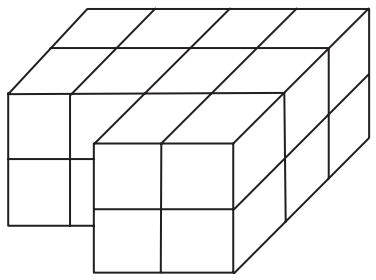


Diagram **NOT** accurately drawn

Work out the volume of the solid prism.
Give the units of your answer.

....

Q3

(Total 2 marks)

Leave blank

4. Here are seven numbers.

2 6 3 3 10 4 7

(a) Find the mode.

.....

(1)

(b) Find the median.

.....

(2)

(c) Work out the range.

.....

(1)

(d) Work out the mean.

.....

(2) **Q4**

(Total 6 marks)

Leave blank

5. The diagram shows a solid.

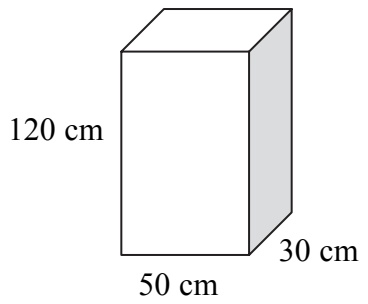


Diagram **NOT** accurately drawn

(a) What is the mathematical name for this solid?

.....

(1)

(b) How many faces does this solid have?

.....

(1)

(c) (i) Calculate the volume of this solid.

..... cm^3

(ii) Convert your answer to litres.

..... litres

(3)

Q5

(Total 5 marks)

Leave blank

6. There are 72 players in a football club.

$\frac{3}{4}$ of these players are male.

(a) How many of the players are female?

.....

(3)

(b) 30 players from the club went on a tour.
What fraction of the 72 players went on the tour?
Give your answer in its simplest form.

.....

(2)

(c) On the first day of the tour, the players left home at 10.30 a.m.
The journey took 4 hours 40 minutes.
At what time did they arrive?
Give your answer as a time on the 24-hour clock.

.....

(2)

(d) Ice creams cost £0.85 each.
The captain has £25 to spend on ice creams.
Can the captain buy ice creams for all 30 players? .....

You must show your working.

.....

.....

.....

(3)

Q6

(Total 10 marks)

Leave blank

7. Here are some patterns made from sticks.



Pattern number 1 | Pattern number 2 | Pattern number 3

(a) Draw Pattern number 4

(1)

(b) Work out the number of sticks in Pattern number 6

.....

(2)

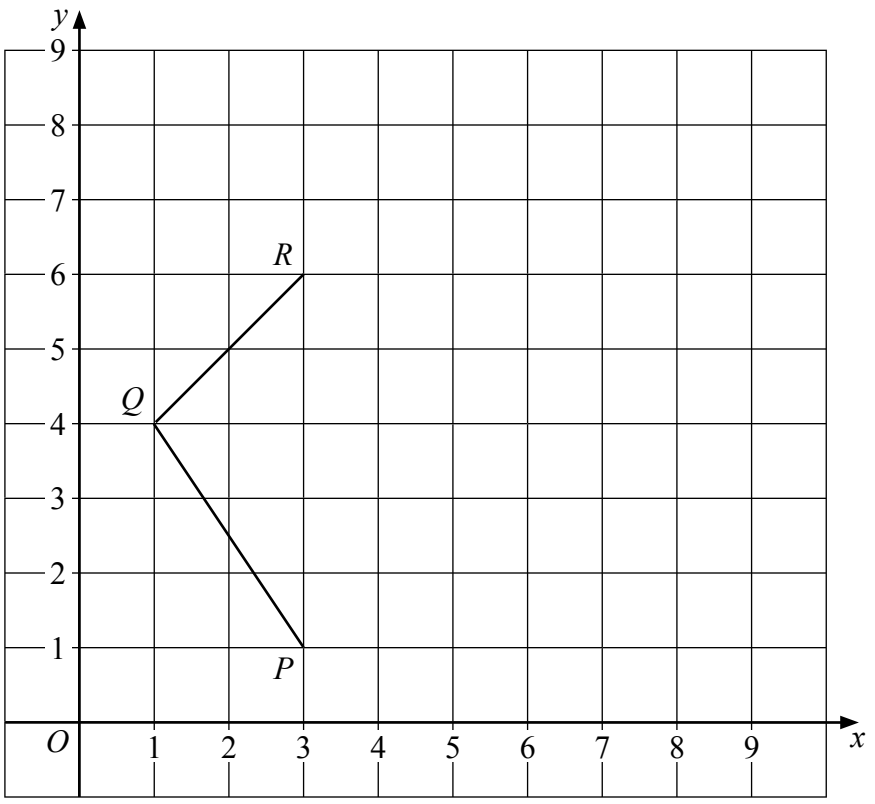
Q7

(Total 3 marks)

N 2 4 6 4 5 A 0 9 2 0

Leave blank

8. The diagram shows three points, P, Q and R, on a 1 cm grid.



(a) Write down the coordinates of Q.

(..... , ...)

(1)

The line PR is the line of symmetry of the quadrilateral $PQRS$.

(b) Complete the quadrilateral $PQRS$.

(1)

(c) Find the area of $PQRS$.

..... cm^2

(2)

(d) On the grid, reflect $PQRS$ in the mirror line $x = 5$

(2) **Q8**

(Total 6 marks)

Leave blank

9. 1000 books are shared between 325 people.
Each person receives the same number of books.

(a) How many books does each person receive?

.....
(1)

(b) How many books are left over?

.....
(2) **Q9**

(Total 3 marks)

10. The rule for calculating each term of a certain sequence is

term = 5 + 3 × term number.

(a) Work out the term when the term number is 2

.....
(2)

(b) One of the terms in this sequence is 35
Find the term number of this term.

.....
(3) **Q10**

(Total 5 marks)

Leave blank

11. Here are three white discs and two grey discs.



In an experiment, a white disc and a grey disc are taken at random.
The **difference** between the numbers on these two discs is recorded.
The discs are then replaced.

(a) Complete the table to show all the possible differences.

White disc \ Grey disc	**9**	**7**
3	6	
5		
2		

(2)

(b) Find the probability that the difference will be 4

.....

(2)

(c) Trevor does the experiment 30 times.
Work out an estimate for the number of times the difference will be 4

.....

(2)

Q11

(Total 6 marks)

Leave blank

12. (a) Solve $3v = 12$

$v =$ .....

(1)

(b) Solve $w - 6 = 3$

$w =$ .....

(1)

(c) Solve $\frac{x}{5} = 6$

$x =$ .....

(1)

(d) Solve $3(y + 4) = 27$

$y =$ .....

(3) **Q12**

(Total 6 marks)

Leave blank

13. The exchange rate between pounds (£) and dollars ($) is £1 = $1.80

(a) James changes £250 into dollars.
How much does he receive in dollars?

$.....

(2)

(b) Kiri changes $630 into pounds.
How much does she receive in pounds?

£.....

(2)

(c) £1 = 100 pence.
Work out what $1 is worth in pence.

..... pence

(2)

Q13

(Total 6 marks)

14. Work out $\frac{6}{7} \times \frac{2}{3}$

Give your answer as a fraction in its lowest terms.

.....

Q14

(Total 2 marks)

Leave blank

15. In the diagram, *ABC* and *ADE* are straight lines.
CE and *BD* are parallel.
AB = *AD*.
Angle *BAD* = 38°.

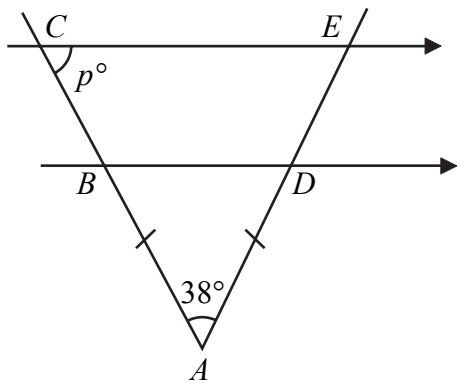


Diagram **NOT** accurately drawn

Work out the value of *p*.

Give a reason for each step in your working.

Q15

(Total 4 marks)

N 2 4 6 4 5 A 0 1 5 2 0

Leave blank

16. (a) Factorise $3x^2 - 2x$

.....

(1)

(b) Expand $y^3(y - 4)$

.....

(2)

(c) Here is a formula used in physics.

$$v = u + at$$

Find the value of t when $v = 30$, $u = 5$ and $a = 10$

$t =$ .....

(2) **Q16**

(Total 5 marks)

17. Arul had x sweets.
Nikos had four times as many sweets as Arul.

(a) Write down an expression, in terms of x, for the number of sweets Nikos had.

.....

(1)

Nikos gave 6 of his sweets to Arul.
Now they both have the same number of sweets.

(b) Use this information to form an equation in x.

.....

(2)

(c) Solve your equation to find the number of sweets that Arul had at the start.

.....

(2) **Q17**

(Total 5 marks)

Leave blank

18. (a) The diagram shows triangle PQR.
$PQ = 4$ cm.
$PR = 8$ cm.
Angle $PQR = 90^o$.

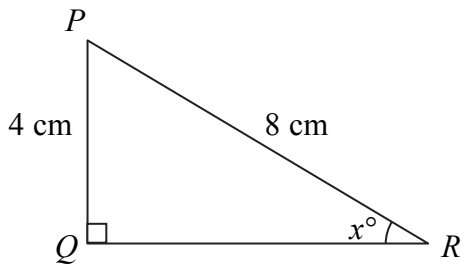


Diagram **NOT** accurately drawn

Calculate the value of x.

$x =$ .....
(3)

(b) The diagram shows triangle LMN.
$MN = 12$ cm.
Angle $LMN = 32^o$.
Angle $MLN = 90^o$.

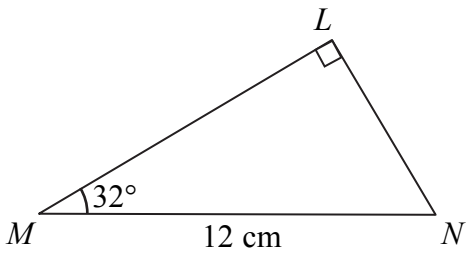


Diagram **NOT** accurately drawn

Calculate the length of ML.
Give your answer correct to 3 significant figures.

.....cm
(3)

Q18

(Total 6 marks)

Leave blank

19. (a) A = {Quadrilaterals with two pairs of parallel sides}
B = {Quadrilaterals with at least one right angle}

Write down the mathematical name for the quadrilaterals in

(i) A,

.....

(ii) $A \cap B$.

.....

(2)

(b) The universal set $\mathscr{E}$ = {Positive whole numbers}
P = {Multiples of 3 less than 11}
Q = {Multiples of 5 less than 11}

(i) What is $P \cap Q$?

.....

(ii) Is it true that $10 \in P \cup Q$?

.....

Explain your answer.

.....

.....

(2)

Q19

(Total 4 marks)

N 2 4 6 4 5 A 0 1 8 2 0

Leave blank

20.

Symbols
+ − × ÷ ( )

Using only symbols from the box, make the following into true statements.

(a) 2 3 4 = 14

(1)

(b) 2 3 4 = 1.25

(1)

(c) 2 3 4 = $2\frac{2}{3}$

(1) **Q20**

(Total 3 marks)

21. (a) Three numbers have a mode of 5 and a mean of 6
Find the three numbers.

.....

(2)

(b) Find four numbers which have a mode of 7 and a median of 6

.....

(2) **Q21**

(Total 4 marks)

TOTAL FOR PAPER: 100 MARKS

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