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

Paper Reference(s)

4400/1F

London Examinations IGCSE

Mathematics

Paper 1F

Foundation Tier

Monday 6 November 2006 – Morning

Time: 2 hours

Examiner's use only

Team Leader's use only

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18	
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Total	

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, 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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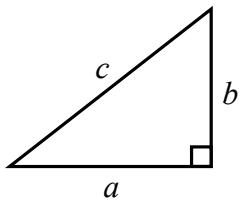
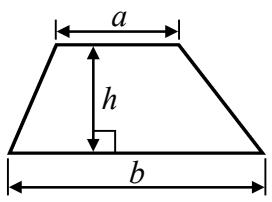
IGCSE MATHEMATICS 4400

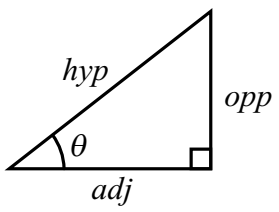
FORMULA SHEET – FOUNDATION TIER

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



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





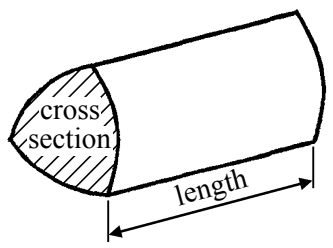
adj = hyp × cos θ
opp = hyp × sin θ
opp = adj × tan θ

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

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

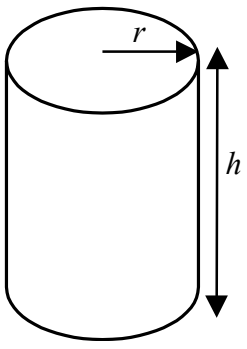
$\tan\theta = \frac{\text{opp}}{\text{adj}}$

Volume of prism = area of cross section × length



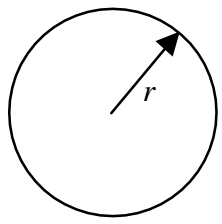
Circumference of circle = $2\pi r$

Area of circle = πr^2



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

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



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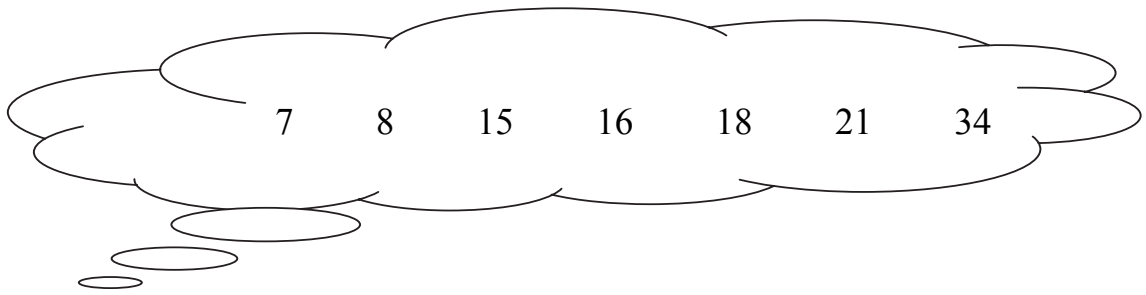
Answer ALL TWENTY-ONE questions.
Write your answers in the spaces provided.
You must write down all the stages in your working.

1.



(a) From the numbers in the cloud, write down the number which is

(i) a multiple of 5,

.....
(1)

(ii) a factor of 36,

.....
(1)

(iii) a square number,

.....
(1)

(iv) a prime number.

.....
(1)

(b) Which two numbers in the cloud add up to 31?

....., ...
(1)

(c) Use a number from the cloud to make the following a true statement.

$$15 \times \ldots\ldots = 315$$

.....
(1)

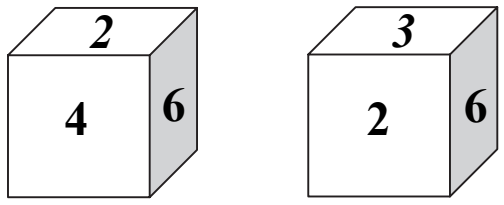
Q1

(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.

Jim has two of these dice.



He throws each dice once.
He finds the total of the scores on the two dice.

Certain	Likely	Unlikely	Impossible

Write down the word from the box that best describes the probability that this total is

(i) 2

.....

(ii) less than 13

.....

(Total 2 marks)

Q2

3. James has £20 to spend on CDs.
Each CD costs £4.70
He buys as many CDs as he can.

(a) How many CDs does James buy?

.....

(2)

James pays with a £20 note.

(b) How much change should he receive?

£ .....

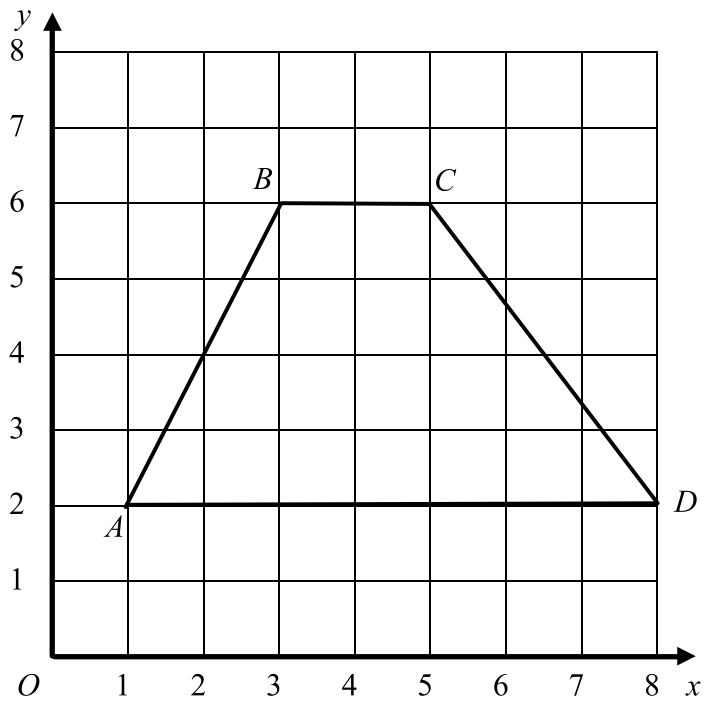
(2)

Q3

(Total 4 marks)

Leave blank

4. The diagram shows a quadrilateral *ABCD*, drawn on a centimetre grid.



(a) Write down the coordinates of *A*.

(..... , ...)
(1)

(b) What is the mathematical name for quadrilateral *ABCD*?

.....
(1)

(c) Find the area of quadrilateral *ABCD*.

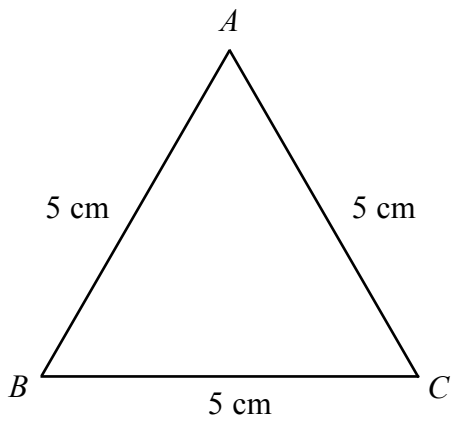
..... cm^2
(2)

Q4

(Total 4 marks)

Leave blank

5. The diagram shows a triangle ABC.
$AB = AC = BC = 5$ cm.



(a) How many lines of symmetry has triangle ABC?

.....

(1)

(b) On the diagram, draw the line of symmetry that goes through A.

(1)

(c) Write down the order of rotational symmetry of triangle ABC.

.....

(1)

Q5

(Total 3 marks)

Leave blank

6. Here are the heights, in centimetres, of five people.

143 157 158 149 143

(a) Find the mode.

..... cm
(1)

(b) Find the median.

..... cm
(2)

(c) Work out the range.

..... cm
(1)

(d) Work out the mean.

..... cm
(2)

(e) One of the five people is chosen at random.
Find the probability that this person's height is

(i) 157 cm,

.....

(ii) more than 148 cm.

.....
(3)

Q6

(Total 9 marks)

Leave blank

7. There are 5400 books in a library.
40% of these books are fiction.

(a) How many of the 5400 books are fiction?

.....
(2)

(b) What fraction of the 5400 books are **not** fiction?

.....
(2)

(c) $\frac{1}{3}$ of the 5400 books are paperbacks.

How many of the books are paperbacks?

.....
(2)

(d) The number of books in the library is increased by 5%.
Work out the number of books in the library after this increase.

.....
(2)

(e) The librarian starts work at 0845

She works for $6\frac{1}{2}$ hours.

She has a 45 minute lunch break, which is not included in the $6\frac{1}{2}$ hours.

At what time does she finish work?
Give your answer in 24-hour clock time.

.....
(3)

Q7

(Total 11 marks)

Leave blank

8. Here are the first four terms in a sequence.

14 11 8 5

(a) Write down the next two terms in the sequence.

....., ...

(2)

(b) Write down the rule for this sequence.

.....

.....

(1)

(c) Find the 21st term in the sequence.

.....

(2)

Q8

(Total 5 marks)

Leave blank

9. Here is a rectangle.

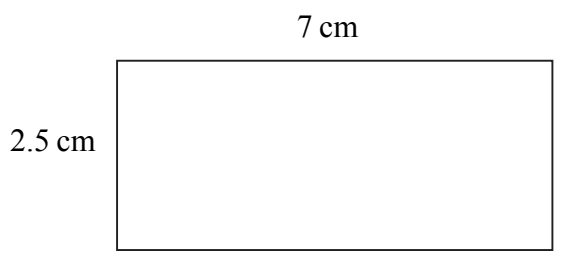


Diagram **NOT** accurately drawn

(a) Work out the perimeter of the rectangle.

..... cm
(1)

(b) Work out the area of the rectangle.
Give the units of your answer.

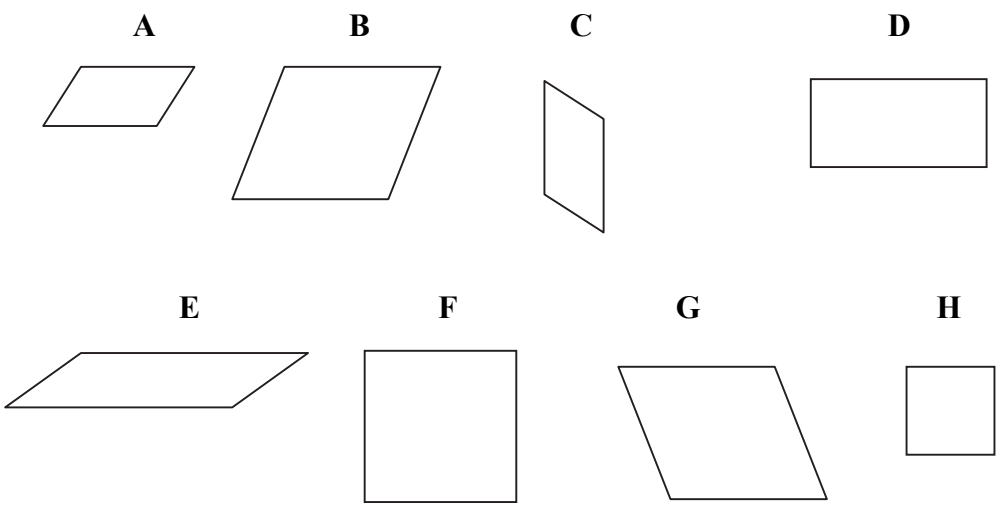
.....
(3)

(Total 4 marks)

Q9

Leave blank

10. Here are some shapes.



(a) Write down the letter of a shape that is an enlargement of shape **H**.

.....

(1)

(b) Write down the letters of two pairs of congruent shapes.

..... and .....

..... and .....

(2)

(Total 3 marks)

Q10

11. (a) Solve $6x - 5 = 16$

$x =$ .....

(2)

(b) Solve $4y + 9 = 3y + 4$

$y =$ .....

(3)

(Total 5 marks)

Q11

Leave blank

12. (a) Work out $3^6 \times 5^3$

.....

(2)

(b) Work out $\sqrt{\frac{32}{50}}$

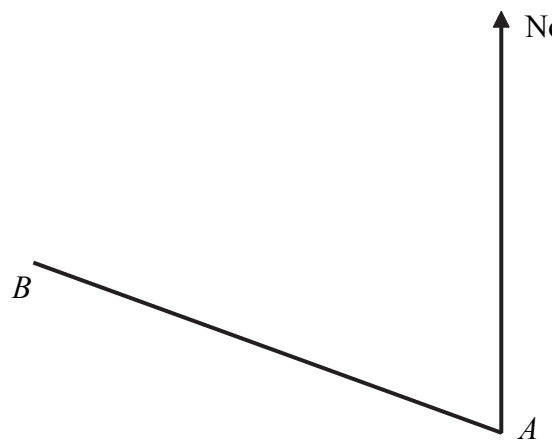
Give your answer as a fraction in its lowest terms.

.....

(2) **Q12**

(Total 4 marks)

13.



(a) By measurement, find the bearing of *B* from *A*.

°

.....

(2)

(b) The bearing of another point, *C*, from *A* is 226°.
Work out the bearing of *A* from *C*.

°

.....

(2) **Q13**

(Total 4 marks)

Leave blank

14. Rectangular tiles have width x cm and height $(x + 7)$ cm.

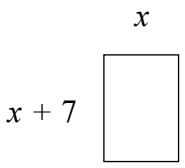


Diagram **NOT** accurately drawn

Some of these tiles are used to form a shape.
The shape is 6 tiles wide and 4 tiles high.

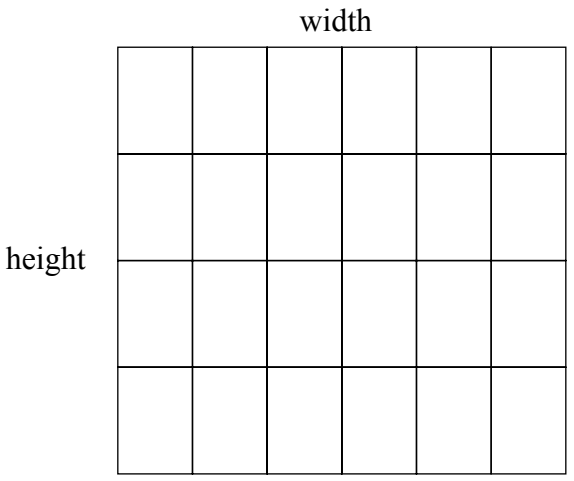


Diagram **NOT** accurately drawn

(a) Write down expressions, in terms of x, for the width and height of this shape.

width = ... cm

height = ... cm

(2)

(b) The width and the height of the shape are equal.

(i) Write down an equation in x.

.....

(ii) Solve your equation to find the value of x.

x = ...

(4) **Q14**

(Total 6 marks)

Leave blank

15.

Andrea's Café
Delicious cakes Only $4.00 each

Andrea buys 100 cakes to sell in her café.
She pays $1.80 for each cake.

On Monday she sells 60 cakes.
She sells these cakes for $4.00 each.

On Tuesday she reduces the price of each cake by $\frac{1}{5}$

She sells 35 cakes at this reduced price.

Andrea then gives away the 5 unsold cakes.

Calculate the total profit that Andrea makes on the cakes.

$.....

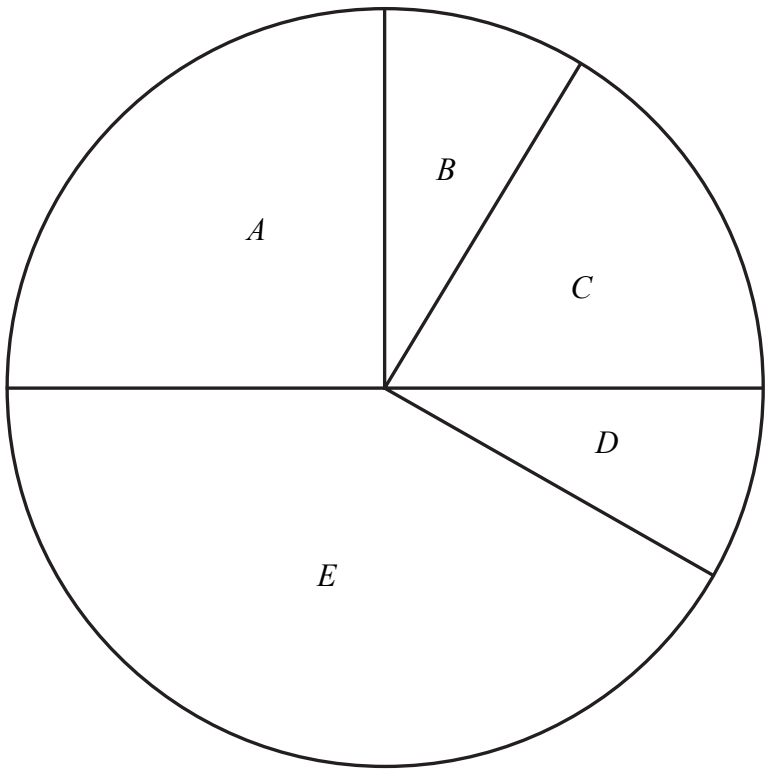
Q15

(Total 6 marks)

Leave blank

16. There are 5 classes in a school.

The pie chart shows information about the number of students in each class.
The pie chart is accurately drawn.



(a) There are 20 students in class *C*.
Work out the number of students in class *A*.

.....

(3)

(b) A student from the school is chosen at random.
Find the probability that this student is in class *E*.

.....

(2) **Q16**

(Total 5 marks)

Leave blank

17. The number of workers in a factory decreases from 60 to 48
Work out the percentage decrease in the number of workers.

..... %

Q17

(Total 3 marks)

18. Rajesh and Gudi share some money in the ratio 2:5
Rajesh receives £240

Work out the amount of money that Gudi receives.

£.....

Q18

(Total 2 marks)

19. Solve the inequality $9x - 2 < 5x + 4$

.....

Q19

(Total 3 marks)

Leave blank

20. Four girls run in a race.
The table shows the probability that each of three girls will win the race.

Name	Probability
Angela	0.5
Beverley	0.1
Caris	0.3
Danielle	

Calculate the probability that either Caris or Danielle will win the race.

.....

(Total 3 marks)

Q20

Leave blank

21. ABC is a triangle.
$AB = AC = 13$ cm.
$BC = 10$ cm.
M is the midpoint of BC.
Angle $AMC = 90°$.

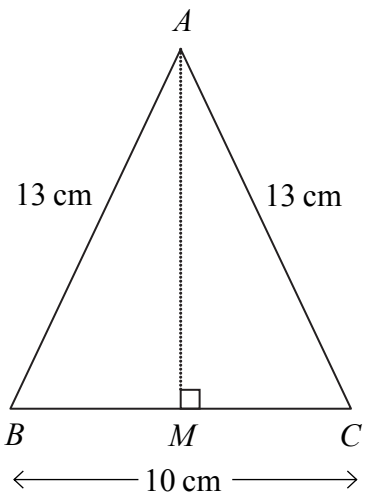


Diagram **NOT** accurately drawn

(a) Work out the length of AM.

..... cm
(4)

Leave blank

(b) A solid has five faces.
Four of the faces are triangles identical to triangle *ABC*.
The base of the solid is a square of side 10 cm.

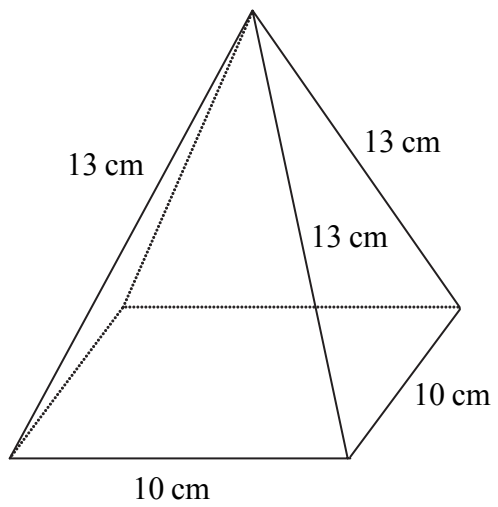


Diagram **NOT** accurately drawn

Calculate the total surface area of this solid.

..... cm^2

(4) **Q21**

(Total 8 marks)

TOTAL FOR PAPER: 100 MARKS

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