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

Paper Reference(s)

4400/1F

London Examinations IGCSE

Mathematics

Paper 1F

Foundation Tier

Friday 5 May 2006 – Morning

Time: 2 hours

Examiner's use only

Team Leader's use only

Page Numbers	Leave Blank
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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.
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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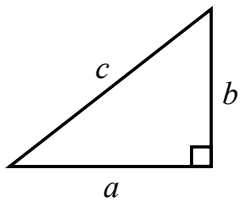
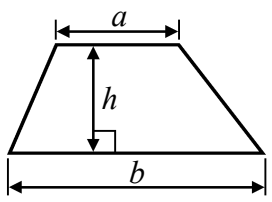
IGCSE MATHEMATICS 4400

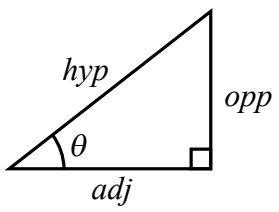
FORMULA SHEET – FOUNDATION TIER

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



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





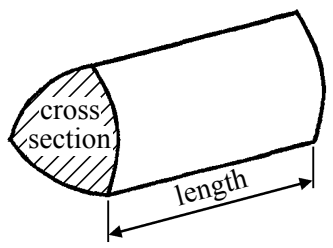
adj = hyp × cos θ
opp = hyp × sin θ
opp = adj × tan θ

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

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

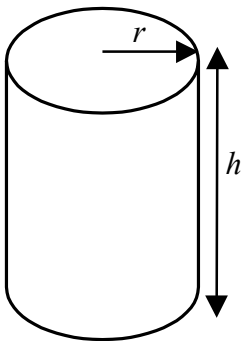
$\tan\theta = \frac{\text{opp}}{\text{adj}}$

Volume of prism = area of cross section × length



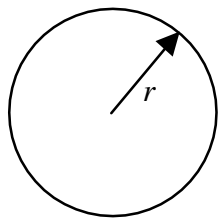
Circumference of circle = $2\pi r$

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 4 A 0 2 2 0

Leave blank

Answer ALL TWENTY-TWO questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1. (a) Write the number 2036 in words.

.....

(1)

(b) Write the number 7361 correct to the nearest hundred.

.....

(1)

(c) Write down the value of the 8 in the number 6483

.....

(1)

(d) Find the number which is exactly halfway between 328 and 436

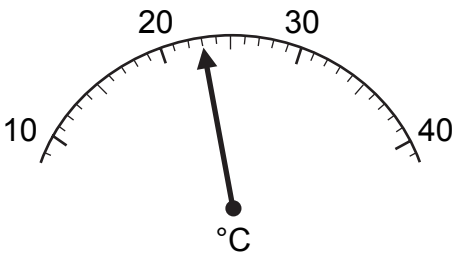
.....

(1) **Q1**

(Total 4 marks)

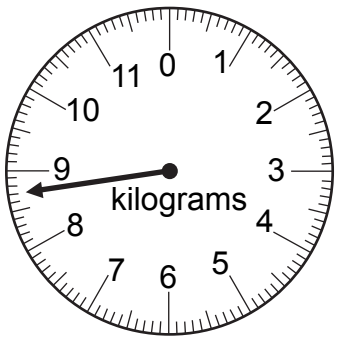
2. What is the reading on each of these scales?

(a)



..... °C

(b)



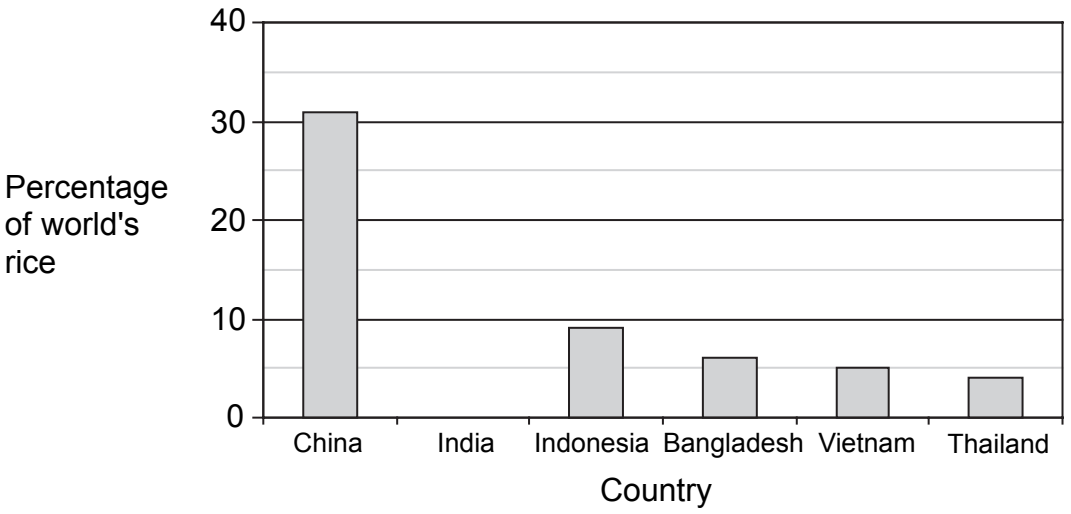
..... kg

Q2

(Total 2 marks)

Leave blank

3. The bar chart shows the percentage of the world's rice grown by each of five countries last year.



(a) (i) Write down the percentage of the world's rice grown by Vietnam.

.....%

(ii) Change your answer to part (i) to a fraction.
Give your fraction in its simplest form.

.....

(3)

(b) Write down the percentage of the world's rice grown by China.

.....%

(1)

(c) Write down the name of the country which grows 9% of the world's rice.

.....

(1)

Leave blank

Last year, India grew 21% of the world's rice.

(d) Draw a bar on the bar chart to show this information.

(1)

600 million tonnes of rice were grown in the world last year.

(e) Work out the weight of the rice grown by India last year.

..... million tonnes

(2)

Saeed says "*There is a country, not shown on the bar chart, which grows a higher percentage of the world's rice than China.*"

(f) Explain why Saeed must be wrong.

.....

.....

(2)

Q3

(Total 10 marks)

4. Here is a list of six numbers.

3 5 7 9 10 13

From the list, write down

(i) an even number,

.....

(ii) a factor of 28,

.....

(iii) a square number.

.....

Q4

(Total 3 marks)

Leave blank

5. A sports club has 50 lockers.
The lockers are in 10 rows of five.
The lockers are numbered from 1 to 50
The diagram shows the first two rows of lockers and how they are numbered.

Row number 2	6	7	8	9	10
Row number 1	1	2	3	4	5

(a) Write down the number of the locker which is directly above locker number 9

.....
(1)

(b) Write down the number of the locker which is directly below locker number 27

.....
(1)

(c) In which row is locker number 41?

Row number .....
(1)

(d) Locker number p has a locker directly above it.
Write down an expression for the number of the locker which is directly above locker number p.

.....
(1)

(e) Write down an expression for the greatest locker number in row number q.

.....
(1)

Leave blank

Faye chooses one of the 50 lockers at random.

(f) Find the probability that she chooses

(i) locker number 39

.....

(ii) a locker in row number 2

.....

(3) **Q5**

(Total 8 marks)

6. (a) (i) Work out 2.85^2
Write down all the figures on your calculator display.

.....

(ii) Write your answer to part (i) correct to 2 decimal places.

.....

(2)

(b) (i) Find the cube root of 28
Write down all the figures on your calculator display.

.....

(ii) Write your answer to part (i) correct to 3 significant figures.

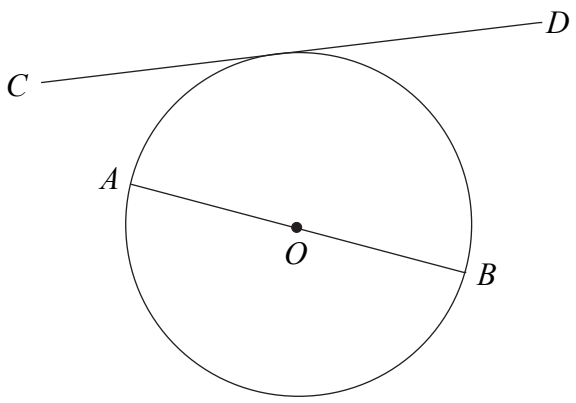
.....

(2) **Q6**

(Total 4 marks)

Leave blank

7.



A and *B* are points on a circle, centre *O*.
AOB is a straight line.
The line *CD* touches the circle.

(a) Write down the special name for

(i) the line *AB*,

.....

(ii) the line *CD*.

.....

(2)

(b) (i) Measure the length of *AB*.

..... cm

(ii) Change your answer to part (i) to millimetres.

..... mm

(2)

(Total 4 marks)

Q7

N 2 4 6 4 4 A 0 8 2 0

Leave blank

8. (a) Simplify $q + q + q + q$

.....

(1)

(b) Simplify $m \times n \times p$

.....

(1)

(c) Simplify $y^2 + y^2 + y^2$

.....

(1)

(d) Simplify $4g + 3h + g - 5h$

.....

(2)

Q8

(Total 5 marks)

Leave blank

9.

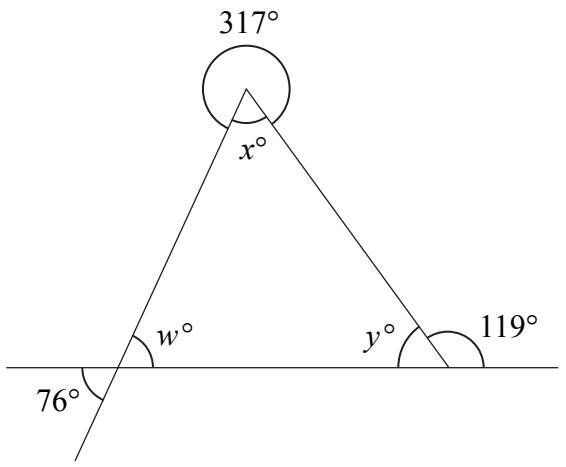


Diagram **NOT** accurately drawn

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

w = ...

(ii) Give a reason for your answer.

.....

(2)

(b) (i) What type of angle is the 317° angle?

.....

(ii) Find the value of x.

x = ...

(2)

(c) (i) Find the value of y.

y = ...

(ii) Give a reason for your answer.

.....

(2) **Q9**

(Total 6 marks)

Leave blank

10.

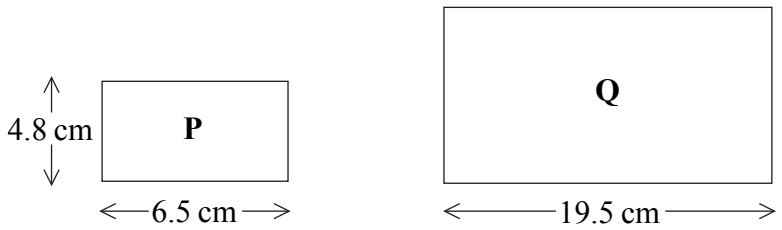


Diagram **NOT** accurately drawn

The diagram shows two rectangles.
Rectangle **Q** is an enlargement of rectangle **P**.

Work out the perimeter of rectangle **Q**.

..... cm

(Total 4 marks)

Q10

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

Leave blank

11. The surface area of the Earth is 510 million km^2.
The surface area of the Pacific Ocean is 180 million km^2.

(a) Express 180 million as a percentage of 510 million.
Give your answer correct to 2 significant figures.

..... %
(2)

The surface area of the Arctic Ocean is 14 million km^2.
The surface area of the Southern Ocean is 35 million km^2.

(b) Find the ratio of the surface area of the Arctic Ocean to the surface area of the Southern Ocean.
Give your ratio in the form 1 : n.

1 : .....
(2) **Q11**

(Total 4 marks)

12. (a) Solve $5t + 6 = 8$

t = ...
(2)

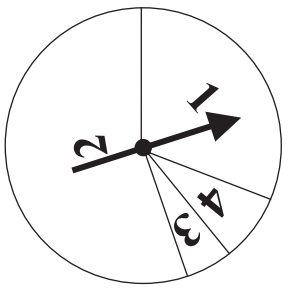
(b) Solve $7 - 4x = 10$

x = ...
(3) **Q12**

(Total 5 marks)

Leave blank

13. Here is a biased spinner.



When the pointer is spun, the score is 1 or 2 or 3 or 4
The probability that the score is 1 is 0.3
The probability that the score is 2 is 0.6

Hajra spins the pointer once.

(a) Work out the probability that the score is **not** 1

.....

(1)

(b) Work out the probability that

(i) the score is 1 or 2

.....

(ii) the score is 3 or 4

.....

(3)

(Total 4 marks)

Q13

Leave blank

14. (a) Convert $\frac{7}{12}$ to a decimal.

Give your answer correct to 3 decimal places.

.....

(2)

Michael says *"When the fraction $\frac{n}{45}$ is converted to a decimal, it never gives a terminating decimal."*

(b) (i) Find a value of n which shows that Michael is wrong.

n = ...

(ii) Write down the name of the type of number n must be, when $\frac{n}{45}$ gives a terminating decimal.

.....

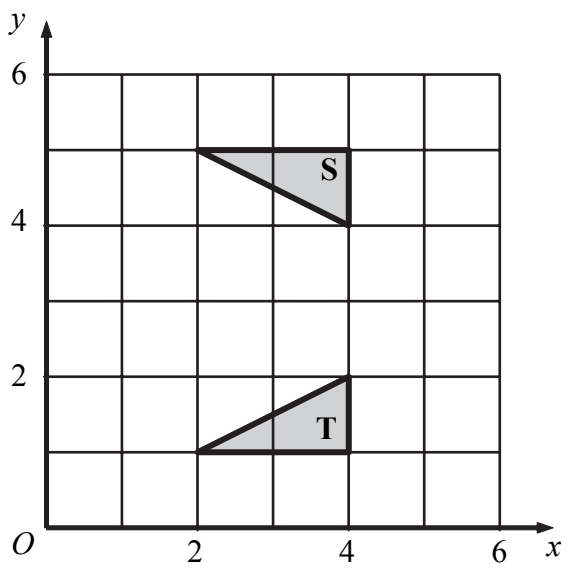
(2)

Q14

(Total 4 marks)

Leave blank

15.



Describe fully the single transformation that maps triangle **S** onto triangle **T**.

.....

(Total 2 marks)

Q15

16. (a) Work out the value of $y^2 - 4y$ when $y = -3$

.....

(2)

(b) Simplify

(i) $p^3 \times p^5$

.....

(ii) $q^7 \div q$

.....

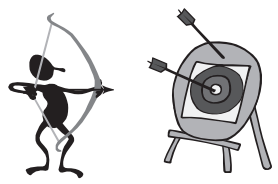
(2)

Q16

(Total 4 marks)

Leave blank

17. Robin fired 15 arrows at a target.
The table shows information about his scores.



Score	Frequency
1	6
2	3
3	1
4	1
5	4

(a) Which score is the mode?

.....
(1)

(b) Work out the range of his scores.

.....
(2)

(c) Find his median score.

.....
(2)

(d) Work out his mean score.

.....
(3)

Q17

(Total 8 marks)

Leave blank

18. (a) Work out $\frac{2}{15} \times 6$

Give your answer as a fraction in its simplest form.

.....

(2)

(b) Work out $2\frac{2}{3} \div \frac{5}{6}$

Give your answer as a mixed number in its simplest form.

.....

(2) **Q18**

(Total 4 marks)

19.

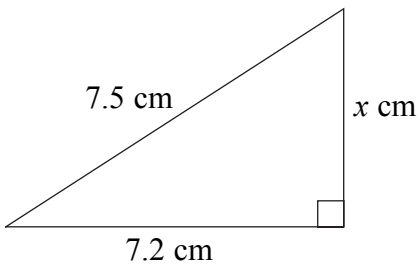


Diagram **NOT** accurately drawn

Work out the value of x.

x = ... **Q19**

(Total 3 marks)

Leave blank

20. The perimeter of a triangle is 54 cm.
The lengths of its sides are in the ratios 2 : 3 : 4

Work out the length of the longest side of the triangle.

..... cm

(Total 2 marks)

Q20

21.

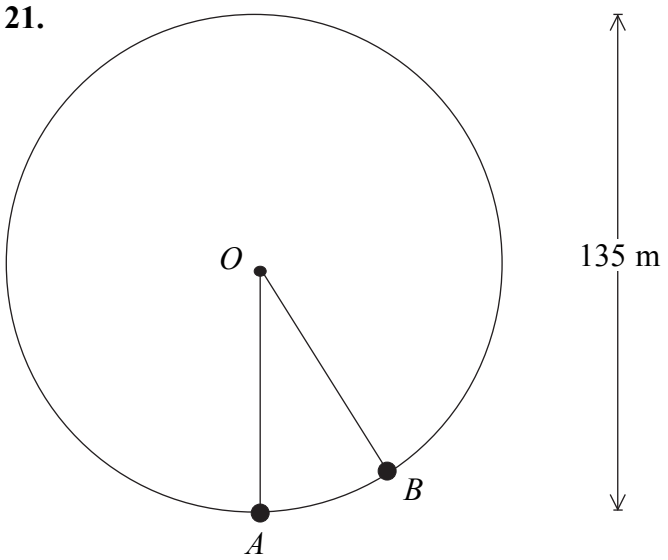


Diagram **NOT** accurately drawn



The diagram represents part of the London Eye.
A and *B* are points on a circle, centre *O*.
A and *B* represent two capsules.
The capsules at *A* and *B* are next to each other.

The London Eye has 32 equally spaced capsules on the circle.

(a) Work out the size of angle *AOB*.

°

.....

(2)

Leave blank

The capsules move in a circle of diameter 135 m.

(b) Calculate the distance moved in a circle by a capsule in making a complete revolution.
Give your answer correct to 3 significant figures.

..... m
(2)

The capsules move at an average speed of 0.26 m/s.

(c) Calculate the time taken for a capsule to make a complete revolution.
Give your answer in minutes, correct to the nearest minute.

..... min
(3)

Q21

(Total 7 marks)

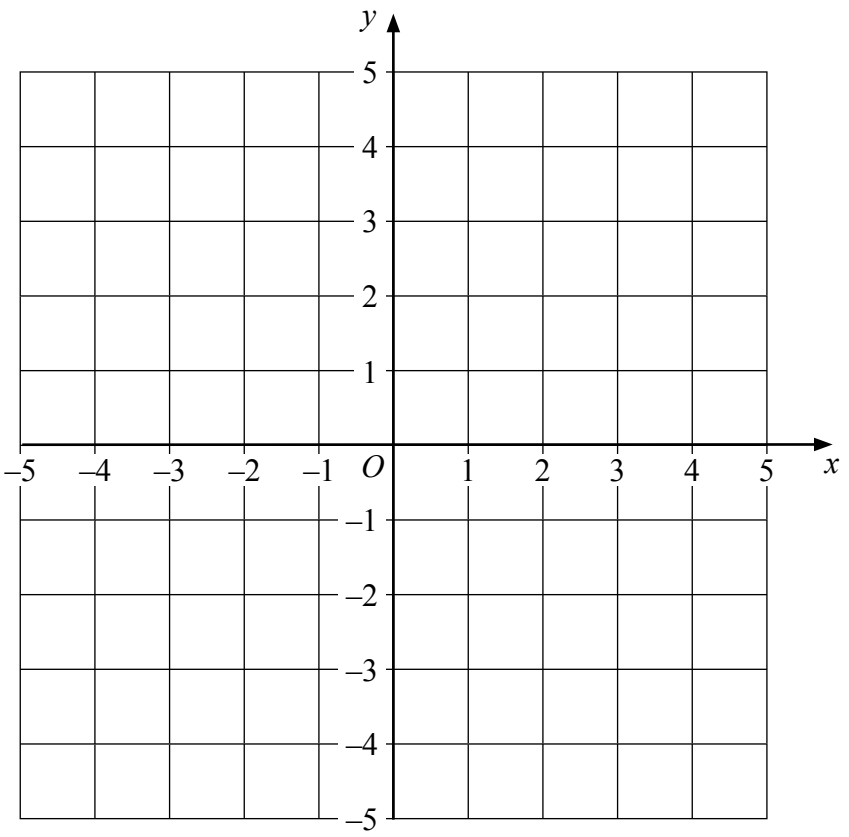
TURN OVER FOR QUESTION 22

Leave blank

22. Show, by shading on the grid, the region which satisfies these inequalities

$$1 \leqslant x \leqslant 3 \qquad \textbf{and} \qquad -4 \leqslant y \leqslant -2$$

Label your region **R**.



Q22

(Total 3 marks)

TOTAL FOR PAPER: 100 MARKS

END

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- Photograph of London Eye: www.freefoto.com