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

Paper Reference(s)

4400/1F

Examiner's use only

Team Leader's use only

London Examinations IGCSE

Mathematics

Paper 1F

Foundation Tier

Monday 5 November 2007 – Afternoon

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, candidate number, your surname, initial(s) and signature.
Check that you have the correct question paper.
Answer ALL the questions. Write your answers 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

The marks for individual questions and the parts of questions are shown in round brackets: e.g. **(2)**.
There are 22 questions in this question paper. The total mark for this paper is 100.
There are 24 pages in this question paper. Any blank pages are indicated.
You may use a calculator.

Advice to Candidates

Write your answers neatly and in good English.

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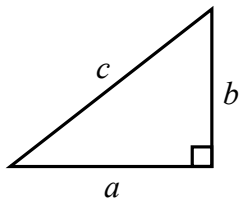
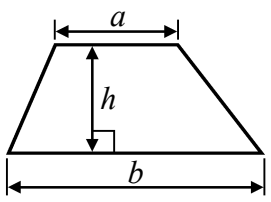
IGCSE MATHEMATICS 4400

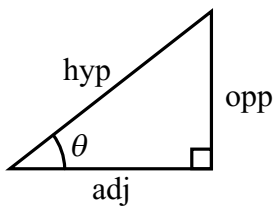
FORMULA SHEET – FOUNDATION TIER

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



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





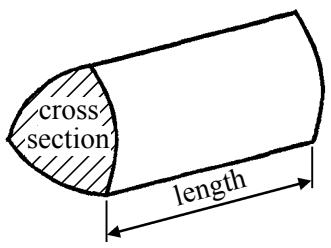
adj = hyp × cos θ
opp = hyp × sin θ
opp = adj × tan θ

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

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

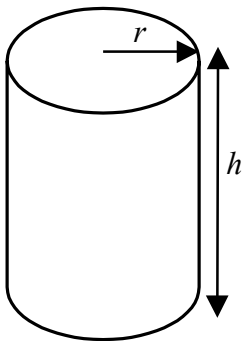
$\tan\theta = \frac{\text{opp}}{\text{adj}}$

Volume of prism = area of cross section × length



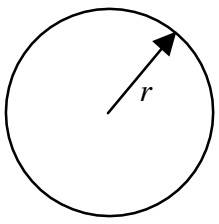
Circumference of circle = $2\pi r$

Area of circle = πr^2



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

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



Leave blank

Answer ALL TWENTY TWO questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1.

21	23	24	25	27

Write down a number from the box which is

(a) an even number

.....

(1)

(b) a multiple of 9

.....

(1)

(c) a factor of 46

.....

(1)

(d) a square number

.....

(1)

(e) a cube number

.....

(1)

(f) a prime number

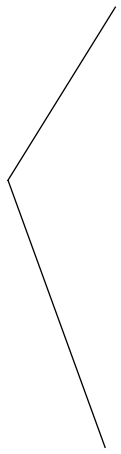
.....

(1) **Q1**

(Total 6 marks)

Leave blank

2. (a) Complete this shape to show a kite.



(2)

(b) Here is a parallelogram.

(i) How many lines of symmetry does this parallelogram have?

.....

(ii) What is the order of rotational symmetry of this parallelogram?

.....

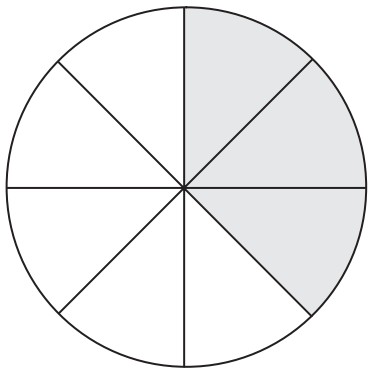
(2)

Q2

(Total 4 marks)

Leave blank

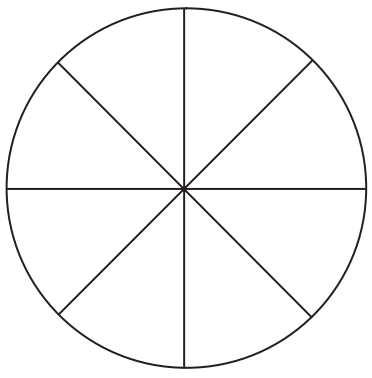
3. (a) What fraction of this shape is shaded?



.....

(1)

(b) Shade $\frac{3}{4}$ of this shape.



(1)

(c) Write $\frac{3}{4}$ as a percentage.

.....%

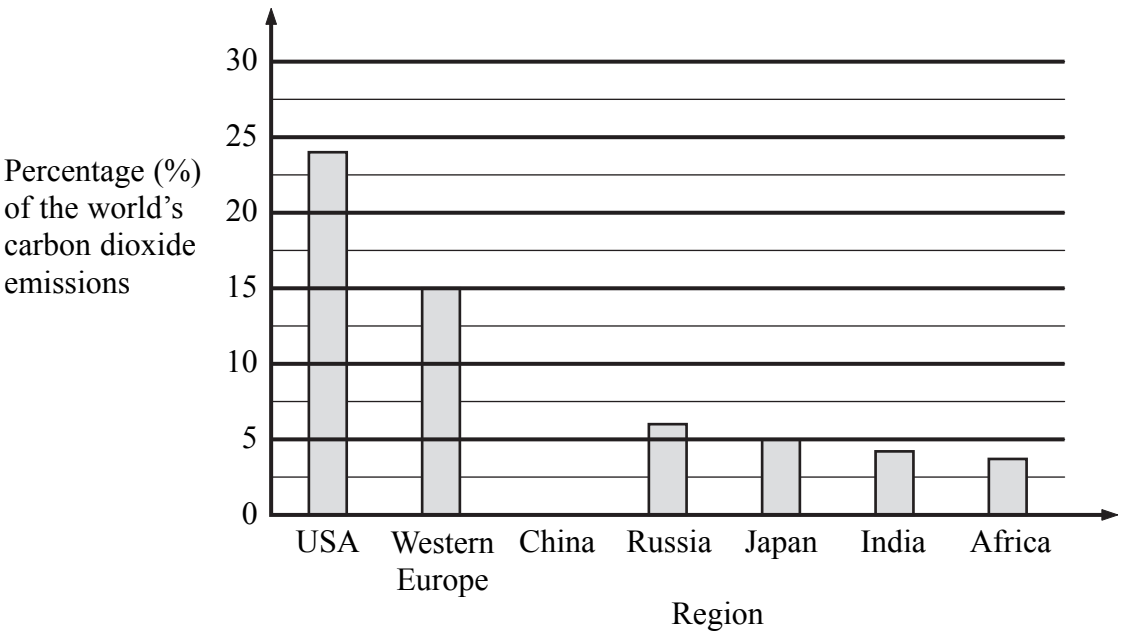
(1)

Q3

(Total 3 marks)

Leave blank

4. The bar chart shows the percentage of the world's carbon dioxide emissions produced by each of six regions in 2001.



(a) Write down the percentage for Japan.

.....%
(1)

(b) Write down the percentage for the USA.

.....%
(1)

(c) Which region's percentage was 6%?

.....
(1)

(d) Which region's percentage was about 4 times the percentage for Africa?

.....
(2)

Leave blank

(e) China's percentage was 13%.
Draw a bar on the bar chart to show this information.

(1)

Here are some forecasts for 2010.

The world's carbon dioxide emissions	30 000 million tonnes
Percentage for India	4.6%

(f) Work out 4.6% of 30 000 million tonnes.

..... million tonnes

(2)

Q4

(Total 8 marks)

Leave blank

5. $A = 5x + 7y$

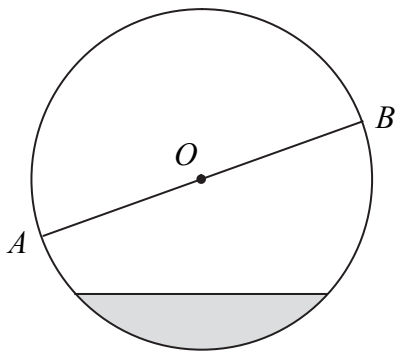
Work out the value of A when $x = 2$ and $y = 3$

$A =$ .....

(Total 2 marks)

Q5

6.



O is the centre of the circle.
Write down the mathematical name for

(i) the line AB,

.....

(ii) the shaded region.

.....

(Total 2 marks)

Q6

Leave blank

7. Here are the lengths, in centimetres, of six worms.

4.7 4.7 5.7 6.3 8.0 9.6

(a) Find the mode.

..... cm
(1)

(b) Find the median.

..... cm
(2)

(c) One of the six worms is taken at random.
Find the probability that the length of this worm is

(i) 5.7 cm,

.....

(ii) more than 7 cm.

.....
(3) **Q7**

(Total 6 marks)

Leave blank

8. (a) The rule for a sequence is

$$\text{Term} = 2 \times \text{Term number} + 5$$

(i) Work out the term when the term number is 10

.....

(ii) Find the term number when the term is 65

.....

(3)

(b) Write down the next two terms in this sequence.

24 22 18 12

....., ...

(2)

Q8

(Total 5 marks)

Leave blank

9. DVDs cost £16 each.
CDs cost £12 each.

(a) Work out the total cost of 5 DVDs and 7 CDs.

£ .....
(2)

(b) Write down an expression for the total cost of x DVDs and y CDs.

£ .....
(2)

Q9

(Total 4 marks)

10. (a) (i) Find $\sqrt{5.5}$
Write down all the figures on your calculator display.

.....

(ii) Write your answer to part (a)(i) correct to 3 decimal places.

.....
(2)

(b) (i) Find 4.3^3
Write down all the figures on your calculator display.

.....

(ii) Write your answer to part (b)(i) correct to 2 significant figures.

.....
(2)

Q10

(Total 4 marks)

Leave blank

11. A tank is a cuboid with base 2.5 m by 1.2 m.
The height of the tank is 80 cm.

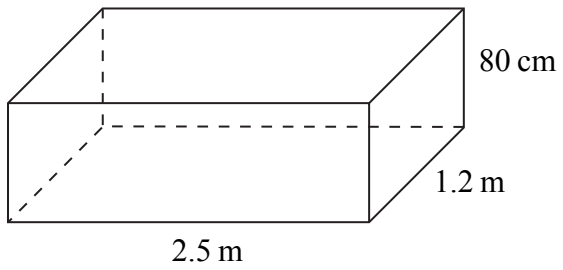


Diagram **NOT** accurately drawn

(a) (i) Convert 80 cm to metres.

..... m
(1)

(ii) Work out the volume, in m^3, of the tank.

..... m^3
(2)

(b) There is 2.1 m^3 of oil in the tank.
The depth of oil is d metres.

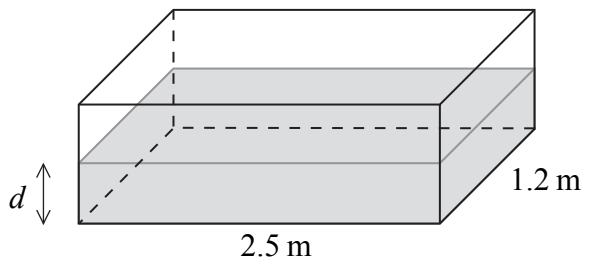


Diagram **NOT** accurately drawn

Calculate the value of d.

d = ...
(2)

Q11

(Total 5 marks)

Leave blank

12. Car hire costs £45 for the first 200 km.

For distances over 200 km, there is an extra cost of £0.50 per km.

(a) Ravi hired a car and drove 350 km.
Calculate his total cost.

£.....
(3)

(b) Cheryl hired a car.
Her total cost was £140

Work out the distance Cheryl drove.

..... km
(4)

Q12

(Total 7 marks)

Leave blank

13. Solve

(a) $3x + 4 = 19$

$x =$ .....

(2)

(b) $5(y + 4) = 35$

$y =$ .....

(3)

Q13

(Total 5 marks)

Leave blank

14. The diagram shows a regular 5-sided polygon, with centre O.

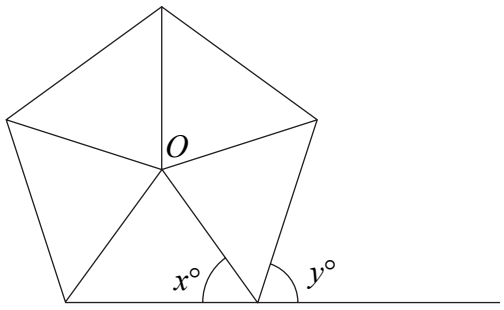


Diagram **NOT** accurately drawn

Work out the value of

(a) x,

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

(b) y.

$y =$ .....
(2) **Q14**

(Total 5 marks)

Leave blank

15. The table shows information about the scores in a game.

Score	Frequency
1	5
2	8
3	3
4	4

Work out the mean score.

.....

(Total 3 marks)

Q15

Leave blank

16. A triangle has two equal sides of length $2x$ cm and one side of length x cm.

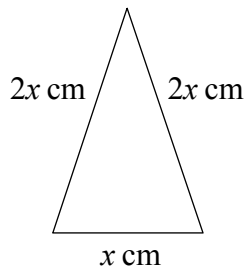


Diagram **NOT** accurately drawn

(a) Write down the mathematical name of this triangle.

.....

(1)

(b) The perimeter of this triangle is 12 cm.

(i) Use this information to write down an equation in x.

.....

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

$x =$ .....

(3)

Q16

(Total 4 marks)

Leave blank

17. 160 of the students in Denton College are in Year 1
120 of the students in Denton College are in Year 2

(a) Write the ratio 160 : 120 in its simplest form.

.....
(2)

(b) The total number of students in Denton College is 280
Express 160 as a percentage of 280
Give your answer correct to 2 significant figures.

.....%
(2) **Q17**

(Total 4 marks)

Leave blank

18. (a) Calculate the area of a circle of radius 2 m.
Give your answer correct to 3 significant figures.

.....m^2
(2)

(b) A circular pond has a radius of 2 m.
There is a path of width 1 m around the pond.

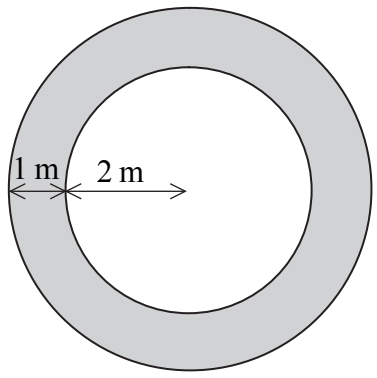


Diagram **NOT** accurately drawn

Calculate the area of the path.
Give your answer correct to 3 significant figures.

.....m^2
(2)

(c) Calculate the outer circumference of the path.
Give your answer correct to 3 significant figures.

..... m
(2)

Q18

(Total 6 marks)

Leave blank

19.

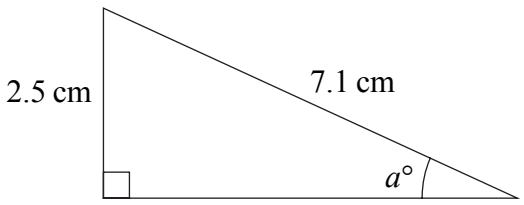


Diagram **NOT** accurately drawn

Calculate the value of a.
Give your answer correct to 3 significant figures.

$a =$ .....

(Total 3 marks)

Q19

20. (a) $A = \{1, 2, 3, 4\}$
$B = \{2, 4, 6, 8\}$

Write down the members of $A \cup B$.

.....

(2)

(b) $\mathcal{E} = \{\text{Positive integers less than } 10\}$
$P = \{3, 4, 5, 6, 7, 8\}$
$P \cap Q = \emptyset$

Write down all the possible members of Q.

.....

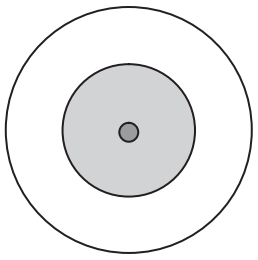
(2)

Q20

(Total 4 marks)

Leave blank

21. Jim fires an arrow at a target.



The table shows all the possible outcomes and the probabilities of three of these outcomes.

Result	Probability
Bull's Eye	
Inner Ring	0.3
Outer Ring	0.4
Miss	0.2

Work out the probability that Jim's arrow will hit either the Bull's Eye **or** the Inner Ring.

.....

(Total 3 marks)

Q21

Leave blank

22. (a) Simplify $\dfrac{w^3 \times w^7}{w^2}$

.....

(2)

(b) Solve the equation $\dfrac{17 - x}{7} = 3$

$x =$ .....

(3)

(c) Solve the inequality $4y - 5 < 6$

.....

(2) **Q22**

(Total 7 marks)

TOTAL FOR PAPER: 100 MARKS

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