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

Paper Reference(s)

4400/2F

Examiner's use only

Team Leader's use only

London Examinations IGCSE

Mathematics

Paper 2F

Foundation Tier

Thursday 4 November 2004 – 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

Page Number	Leave Blank
3	
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14	
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17	
18	
Total	

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.

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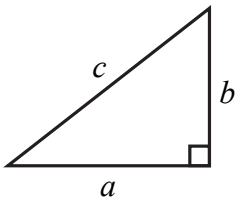
edexcel INTERNATIONAL

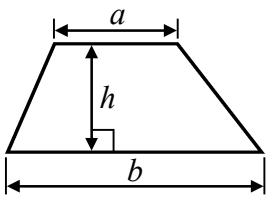
IGCSE MATHEMATICS 4400

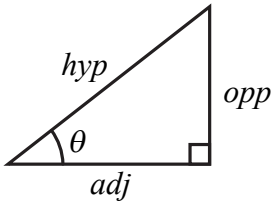
FORMULA SHEET – FOUNDATION TIER

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



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





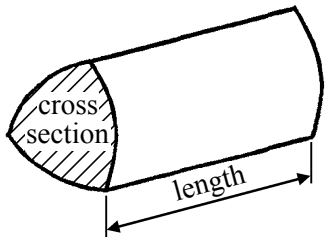
adj = hyp × cos θ
opp = hyp × sin θ
opp = adj × tan θ

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

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

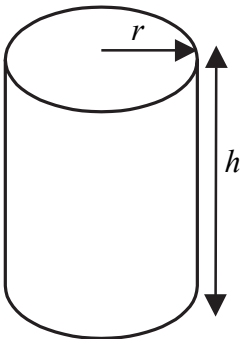
$\tan\theta = \frac{\text{opp}}{\text{adj}}$

Volume of prism = area of cross section × length



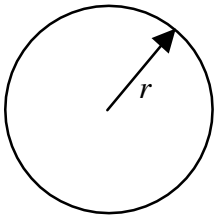
Circumference of circle = $2\pi r$

Area of circle = πr^2



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

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



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Answer ALL TWENTY FOUR questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1. A college has 507 students.

(a) Write the number 507 in words.

.....

(1)

269 of the 507 students are boys.

(b) How many of the students are girls?

.....

(1)

All 507 students go on a college trip.
They travel by coach.
Each coach can carry 54 students.

(c) Work out the number of coaches needed to carry all 507 students.

.....

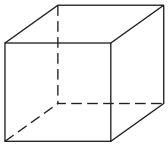
(2)

(Total 4 marks)

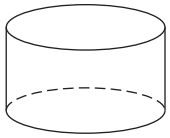
Q1

2. Write down the mathematical name for each of these 3-D shapes.

(i)



(ii)



(i) .....

(ii) .....

(Total 2 marks)

Q2

Leave blank

3. (a) Write 0.9 as a percentage.

..... %

(1)

(b) Write 0.3 as a fraction.

.....

(1)

(c) Write 3% as a decimal.

.....

(1)

(d) Work out $\frac{5}{8}$ as a percentage.

..... %

(2) **Q3**

(Total 5 marks)

4. Here are the first four terms of a number sequence.

3 9 27 81

(a) Complete the rule for the sequence.

Multiply by ……. **each time.**

(1)

(b) Write down the next two terms of the sequence.

..... , ...

(1)

(c) Explain why 2176 is **not** a term of this number sequence.

.....

.....

(1) **Q4**

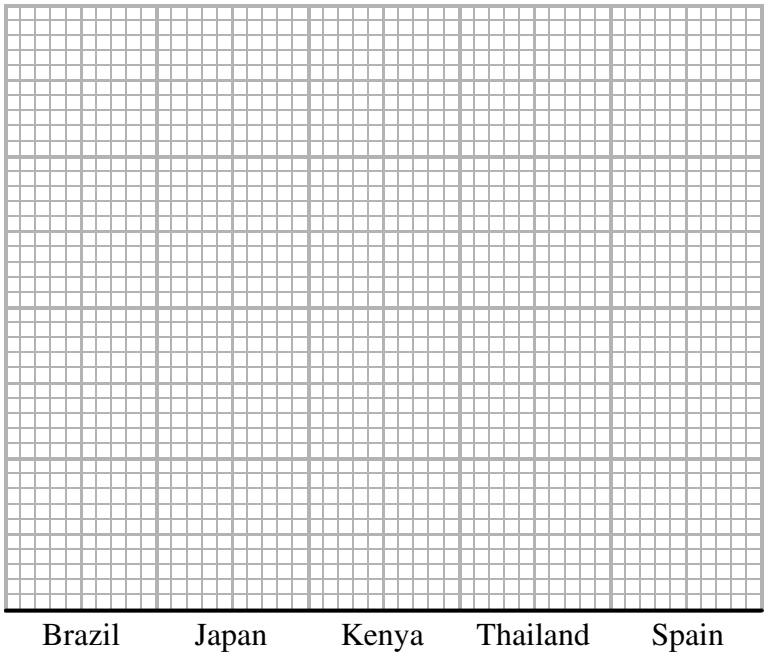
(Total 3 marks)

Leave blank

5. The table shows the number of medals won by each of 5 countries at the Olympic Games in 2000.

Country	Number of medals
Brazil	12
Japan	18
Kenya	7
Thailand	3
Spain	11

(a) On the grid, draw a bar chart to show the information in the table.



(3)

(b) Find the ratio of the number of medals won by Brazil to the number of medals won by Japan.
Give your ratio in its simplest form.

.....

(2)

Q5

(Total 5 marks)

Leave blank

6. (a) Shade $\frac{2}{3}$ of this shape.

(1)

Here is a list of fractions.

$\frac{4}{6}$ $\frac{5}{7}$ $\frac{6}{10}$ $\frac{8}{10}$ $\frac{12}{20}$

(b) Write down the fractions from the list that are equivalent to $\frac{3}{5}$.

.....

(2)

(c) Find the simplest form of $\frac{18}{24}$.

.....

(1)

(d) Work out $\frac{5}{6}$ of 78

.....

(2)

(e) Write these fractions in order of size.
Start with the smallest fraction.

$\frac{3}{8}$ $\frac{2}{5}$ $\frac{3}{10}$ $\frac{7}{20}$

.....

(2) **Q6**

(Total 8 marks)

Leave blank

7. (a) Write down a sensible metric unit which could be used for measuring

(i) the length of a bus,

.....

(ii) the weight of a car.

.....

(2)

(b) Convert

(i) 20 cm to millimetres,

..... mm

(ii) 1.5 litres to cm^3.

..... cm^3

(2)

Q7

(Total 4 marks)

8. (a) Solve $4x = 28$

$x =$ .....

(1)

(b) Simplify $n \times t \times 6$

.....

(1)

(c) $y = 3p - 4q$
Work out the value of y when $p = 5$ and $q = \frac{1}{2}$

$y =$ .....

(2)

Q8

(Total 4 marks)

Leave blank

9.

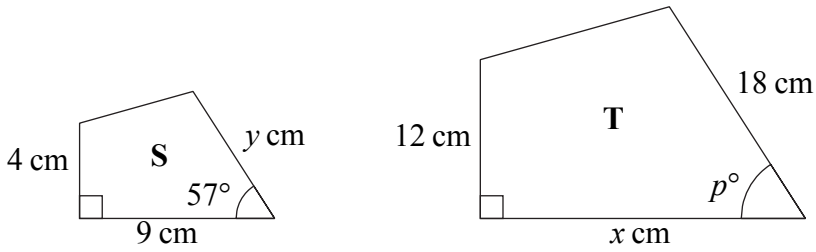


Diagram **NOT** accurately drawn

Shape **T** is an enlargement of shape **S**.

(a) Find the value of p.

$p =$ .....

(1)

(b) Find the scale factor of the enlargement.

.....

(1)

(c) Find the value of

(i) x,

$x =$ .....

(ii) y.

$y =$ .....

(2)

Leave blank

(d) In the space below, make an accurate drawing of shape **S**.

(2)

Q9

(Total 6 marks)

10. Five numbers have a mean of 6

(a) Work out the total of the five numbers.

.....

(1)

The **same** five numbers have a mode of 8 and a median of 7

The smallest number is 3

(b) Find the five numbers.

.....

(3)

Q10

(Total 4 marks)

Leave blank

11.

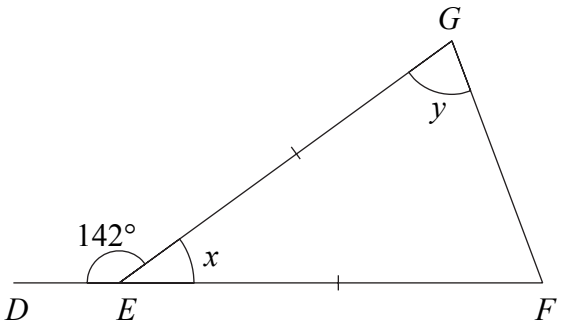


Diagram **NOT** accurately drawn

DEF is a straight line.
In triangle *EFG*, *EF* = *EG*.

(a) (i) Work out the size of angle *x*.

.....°

(ii) Give a reason for your answer.

.....

.....

(2)

(b) (i) Work out the size of angle *y*.

.....°

(ii) Give reasons for your answer.

.....

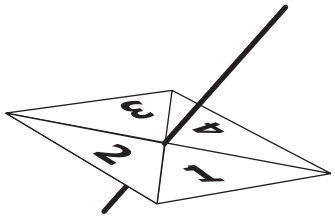
.....

(3) **Q11**

(Total 5 marks)

Leave blank

12. Here is a 4-sided spinner.



The sides of the spinner are labelled 1, 2, 3 and 4.

Jean spins the spinner and throws a coin.
One possible outcome is (2, Tails).

(a) List all the possible outcomes.

.....

.....

(2)

The spinner is biased.
The probability that the spinner will land on each of the numbers 1, 2 and 3 is given in the table.

Number	1	2	3	4
Probability	0.2	0.1	0.4	

(b) Work out the probability that the spinner will land on 4

.....

(2)

Tom spun the spinner a number of times.
The number of times it landed on 1 was 85

(c) Work out an estimate for the number of times the spinner landed on 3

.....

(1)

Q12

(Total 5 marks)

Leave blank

13. Paul did a history test.
There was a total of 60 marks for the test.
Paul got 45% of the marks.

(a) Work out 45% of 60.

.....
(2)

Paul got 68 out of 80 in a science test.

(b) Work out 68 out of 80 as a percentage.

..... %
(2)

Paul got 72 marks in a maths test.
72 is 60% of the total number of marks.

(c) Work out the total number of marks.

.....
(2)

Q13

(Total 6 marks)

Leave blank

14. (a) Simplify

(i) $x + x + x + y + y$

.....

(ii) $4p - 2q - 3p - 5q$

.....

(4)

(b) Factorise $10c - 15$

.....

(1)

Q14

(Total 5 marks)

15. The total weight of 3 identical video tapes is 525 g.
Work out the total weight of 5 of these video tapes.

..... g

Q15

(Total 2 marks)

16.

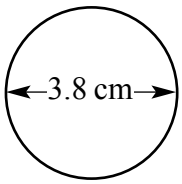


Diagram **NOT** accurately drawn

The diameter of a circle is 3.8 cm.
Work out the circumference of the circle.
Give your answer correct to 3 significant figures.

..... cm

Q16

(Total 2 marks)

Leave blank

17.

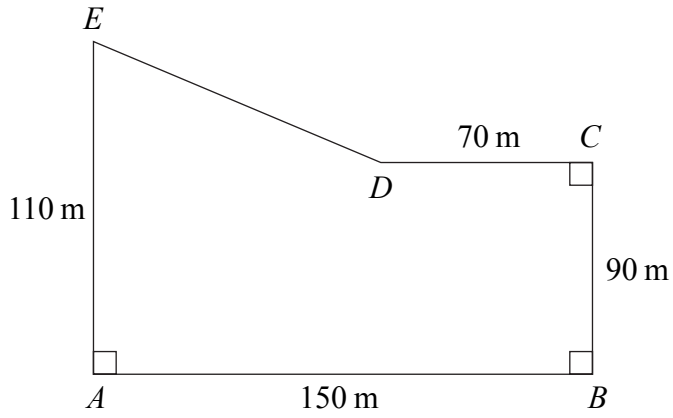


Diagram **NOT** accurately drawn

The shape *ABCDE* is the plan of a field.
AB = 150 m, *BC* = 90 m, *CD* = 70 m and *EA* = 110 m.
The corners at *A*, *B* and *C* are right angles.

(a) Work out the area of the field.

..... m^2
(4)

A farmer grows corn on the field.
He gets 160 kg of corn per hectare.
1 hectare = 10 000 m^2.

(b) Work out the weight of corn he gets from the field.

..... kg
(2)

Q17

(Total 6 marks)

Leave blank

18. Solve $5x - 3 = 2x - 1$

$x =$ .....

(Total 3 marks)

Q18

19. Calculate the value of $\sqrt{2.6^3 - 3.9^2}$
Write down all the figures on your calculator display.

.....

(Total 2 marks)

Q19

20. (a) Expand $y(y + 2)$

.....

(1)

(b) Expand and simplify $3(2x + 1) + 2(x - 4)$

.....

(2)

(Total 3 marks)

Q20

Leave blank

21.

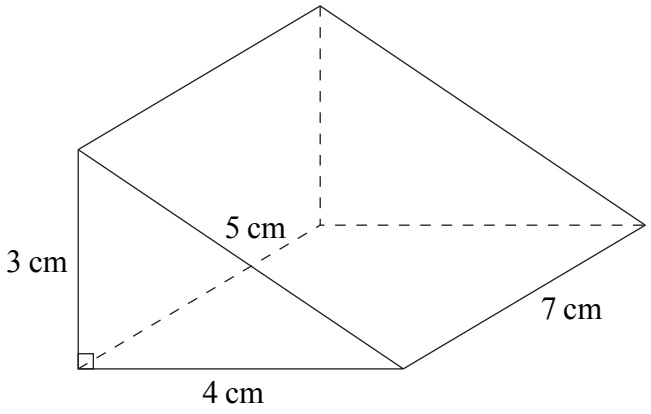


Diagram **NOT** accurately drawn

The diagram shows a prism.
The cross-section of the prism is a right-angled triangle.
The lengths of the sides of the triangle are 3 cm, 4 cm and 5 cm.
The length of the prism is 7 cm.

(a) Work out the volume of the prism.

..... cm^3
(3)

(b) Work out the total surface area of the prism.

..... cm^2
(3)

Q21

(Total 6 marks)

Leave blank

22. Solve the simultaneous equations

$$y = 4x$$
$$x + y = 10$$

$x =$ .....

$y =$.....

(Total 3 marks)

Q22

23. The table gives information about the speeds, in km/h, of 200 cars passing a speed checkpoint.

Speed (v km/h)	Frequency
$30 < v \leq 40$	20
$40 < v \leq 50$	76
$50 < v \leq 60$	68
$60 < v \leq 70$	28
$70 < v \leq 80$	8

(a) Write down the modal class.

.....

(1)

(b) Work out an estimate for the probability that the next car passing the speed checkpoint will have a speed of more than 60 km/h.

.....

(2)

(Total 3 marks)

Q23

Leave blank

24. (a) Simplify, leaving your answers in index form

(i) $7 \times 7 \times 7 \times 7 \times 7$

.....

(ii) $2^4 \times 2^3$

.....

(iii) $3^8 \div 3^2$

.....

(3)

(b) $\dfrac{5^3 \times 5^8}{5^7} = 5^x$

Find the value of x.

$x =$ .....

(1) **Q24**

(Total 4 marks)

TOTAL FOR PAPER: 100 MARKS

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