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

Paper Reference(s)

4400/2F

London Examinations IGCSE

Mathematics

Paper 2F

Foundation Tier

Monday 7 November 2005 – Morning

Time: 2 hours

Examiner's use only

Team Leader's use only

Page Number	Leave Blank
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17	
18	
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 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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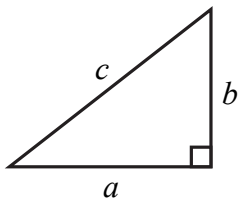
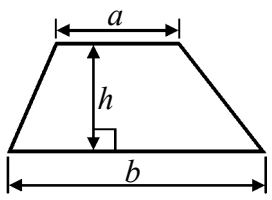
IGCSE MATHEMATICS 4400

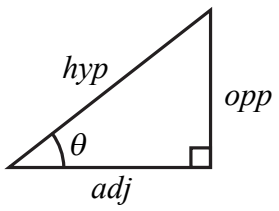
FORMULA SHEET – FOUNDATION TIER

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



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





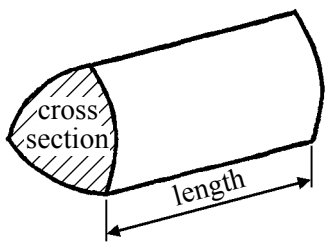
adj = hyp × cos θ
opp = hyp × sin θ
opp = adj × tan θ

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

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

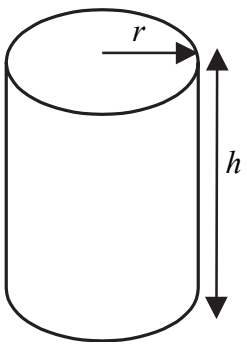
$\tan\theta = \frac{\text{opp}}{\text{adj}}$

Volume of prism = area of cross section × length



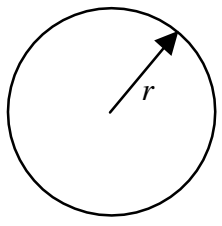
Circumference of circle = $2\pi r$

Area of circle = πr^2



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

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



N 2 3 0 6 7 A 0 2 2 0

Leave blank

Answer ALL NINETEEN questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1. (a) Write in figures the number **ten thousand and twenty three**.

.....

(1)

(b) Write down the value of the 3 in 0.137

.....

(1)

(c) Write down the square of 12

.....

(1)

(d) Write down the square root of 81

.....

(1)

(e) Round these numbers to the nearest whole number.

(i) 28.48

.....

(ii) 59.8

.....

(2)

(f) Convert 0.02 to a fraction. Give your answer in its lowest terms.

.....

(2)

(g) Work out the cube of 5

.....

(1) **Q1**

(Total 9 marks)

Leave blank

2.

SIGNS
+ − × ÷

Write a sign in each box so that both of these statements are true.

(i) 2 ☐ 3 ☐ 5 = 17

(ii) 10 ☐ 2 ☐ 4 = 9

(Total 2 marks)

Q2

3. (a) Arrange these numbers in order of size.
Start with the smallest.

$\frac{1}{3}$ 30% $\frac{2}{7}$ 0.33

....., ..., ..., ...

(2)

(b) Jay had 20 cakes.
He ate 3 of them.

(i) What fraction of the 20 cakes did he eat?

.....

(ii) What fraction of the 20 cakes was left?

.....

(2)

(Total 4 marks)

Q3

Leave blank

4. Ilona asked 30 students this question:

"How many mobile phones are there in your house?"

Here are her results.

2 3 1 5 2 4 3 3 2 4 5 1 3 4 2

3 2 3 4 3 4 3 2 2 1 4 2 3 3 3

(a) Complete the table.

Number of mobile phones	Tally	Frequency
1		
2	𝍸 ///	8
3		
4		
5	//	2

(3)

(b) Find the range of the number of mobile phones.

.....

(2)

(c) Ilona wishes to draw a pie chart to show these results.
Work out the size of the angle for 2 mobile phones.

.....°

(2) **Q4**

(Total 7 marks)

Leave blank

5. (a) Rosetta invests £250 for one year.
At the end of the year she receives 4% interest.
Work out the amount of interest she receives.

£ .....

(2)

(b) The price of a car is £6500
The price is reduced by 12%.
Work out the new price.

£ .....

(3)

(Total 5 marks)

Q5

6. Use metric units to write down an estimate for

(a) the height of a man,

.....

(2)

(b) the weight of a calculator.

.....

(2)

(Total 4 marks)

Q6

Leave blank

7. (a) Here are the first four terms of a sequence.

10 8 6 4

(i) Write down the rule for this sequence.

.....

(ii) Find the 10th term of this sequence.

.....

(3)

(b) The rule for another sequence is **Add 3**

(i) Complete the table to show the first four terms of this sequence.

Add 3				
Term number	1	2	3	4
Term	11	14		

(ii) Find the term number of the first term which is more than 30

.....

(iii) Find the 100th term.

.....

(5) **Q7**

(Total 8 marks)

Leave blank

8. Manster play two games against Liverton.
Manster may win or lose or draw each game.

(a) Complete the table to show all the possible pairs of results for Manster.

First game	Second game
Win	Win

(3)

(b) All pairs of results are equally likely.
Find the probability that both games have the same result.

.....

(2) **Q8**

(Total 5 marks)

N 2 3 0 6 7 A 0 8 2 0

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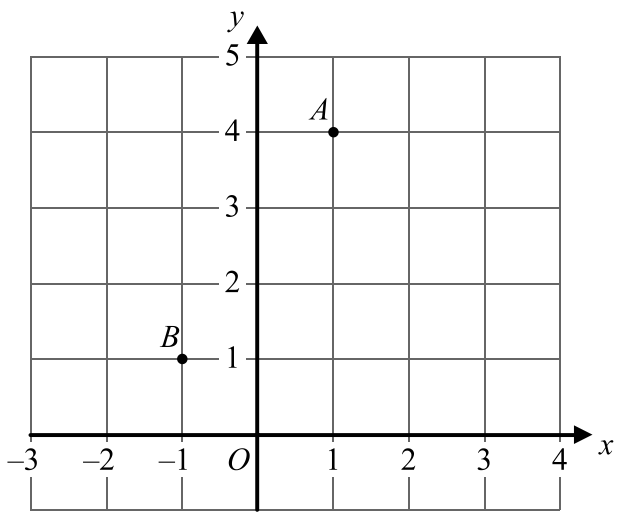
9.



(a) Write down the coordinates of

(i) A,

(.....)

(ii) B.

(.....)

(2)

(b) (i) On the diagram, mark a point C so that triangle ABC is isosceles.

(ii) Write down the coordinates of C.

(.....)

(2)

(c) Find the coordinates of the midpoint of AB.

(.....)

(2)

Q9

(Total 6 marks)

N 2 3 0 6 7 A 0 9 2 0

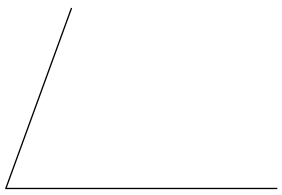
Leave blank

10. (a) What is the mathematical name for a triangle with all three sides equal?

.....

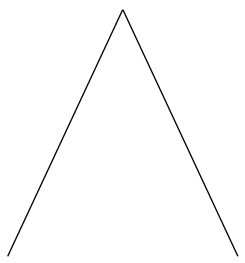
(1)

(b) Complete the diagram below to show a trapezium.



(2)

(c) Complete the shape below so that it has exactly two lines of symmetry.

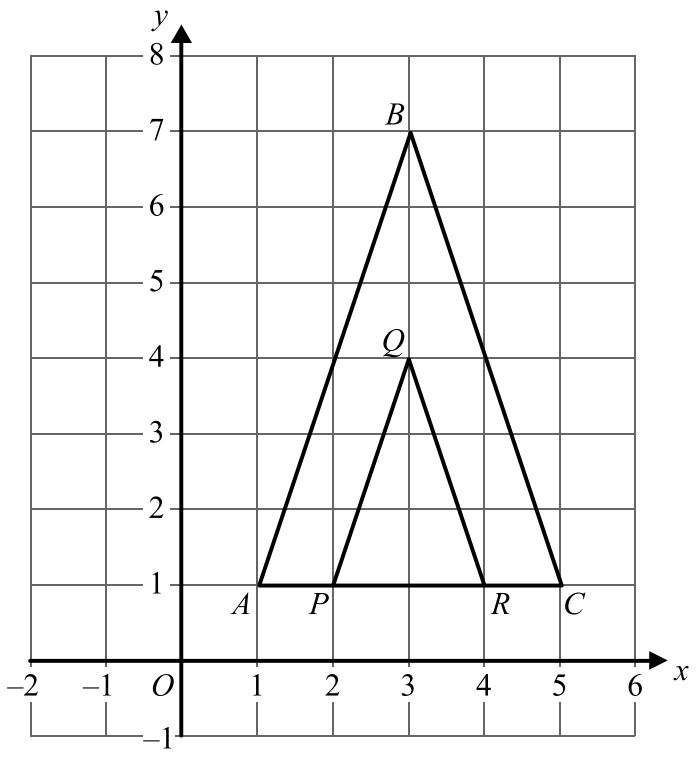


(1) **Q10**

(Total 4 marks)

Leave blank

11.



Triangle PQR has been enlarged to give triangle ABC.

(a) Find the scale factor of the enlargement.

.....

(1)

(b) Mark on the diagram the centre of enlargement. Use the letter X.

(1)

(c) Write down the equation of the line of symmetry of the triangles.

.....

(2)

Q11

(Total 4 marks)

Leave blank

12. (a) *AB* and *CD* are straight lines.

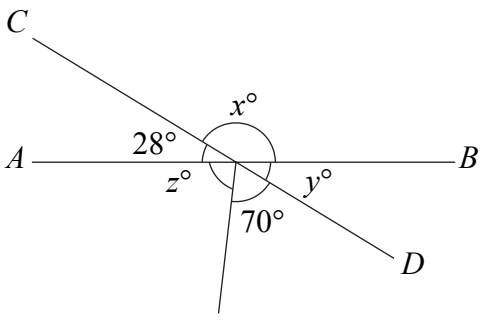


Diagram **NOT** accurately drawn

Find the value of

(i) x,

(ii) y,

(iii) z.

(i) x = ...

(ii) y = ...

(iii) z = ...

(4)

(b) *PQR* is a straight line.

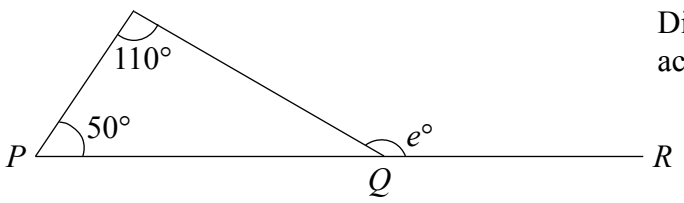


Diagram **NOT** accurately drawn

Find the value of e.

e = ...

Give your reasons.

.....

.....

(2)

Q12

(Total 6 marks)

Leave blank

13. A = {Prime numbers between 10 and 16}
B = {Multiples of 3 between 10 and 16}

(a) List the members of $A \cup B$.

.....

(2)

(b) What is $A \cap B$?

.....

(1)

(c) Is it true that $11 \in B$?

.....

Explain your answer.

.....

.....

.....

(1) **Q13**

(Total 4 marks)

Leave blank

14. Two fruit drinks, *Fruto* and *Tropico*, are sold in cartons.

(a) *Fruto* contains only orange and mango.
The ratio of orange to mango is 3 : 2
A carton of *Fruto* contains a total volume of 250 cm^3.

Find the volume of orange in a carton of *Fruto*.

..... cm^3
(3)

(b) *Tropico* contains only lemon, lime and grapefruit.
The ratios of lemon to lime to grapefruit are 1 : 2 : 5

The volume of grapefruit in a carton of *Tropico* is 200 cm^3.

Find the total volume of *Tropico* in a carton.

..... cm^3
(3) **Q14**

(Total 6 marks)

15. (a) Factorise $x^2 - 5x$

.....
(1)

(b) Multiply out $x(2x + 3y)$

.....
(2)

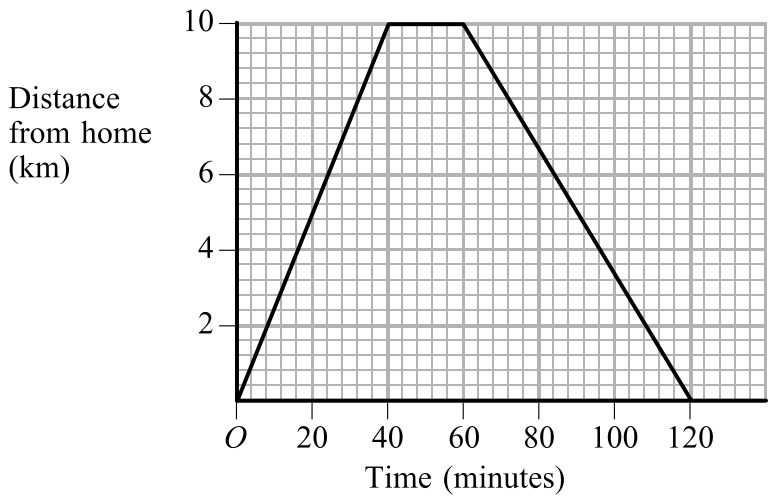
(c) Expand and simplify $(x - 4)(x + 2)$

.....
(2) **Q15**

(Total 5 marks)

Leave blank

16. Jodi went on a trip by cycle from his home.
The diagram shows his distance/time graph.



(a) At what times was Jodi 6 km from home?

..... minutes

..... minutes

(2)

(b) Where was Jodi after 120 minutes?

.....

(1)

(c) Between what times was Jodi moving fastest?

..... minutes, ... minutes

(1)

(d) Calculate Jodi's speed during the first 20 minutes of his trip.
Give your answer in kilometres per hour.

..... km/h

(2)

(e) At what time had Jodi cycled 14 km?

..... minutes

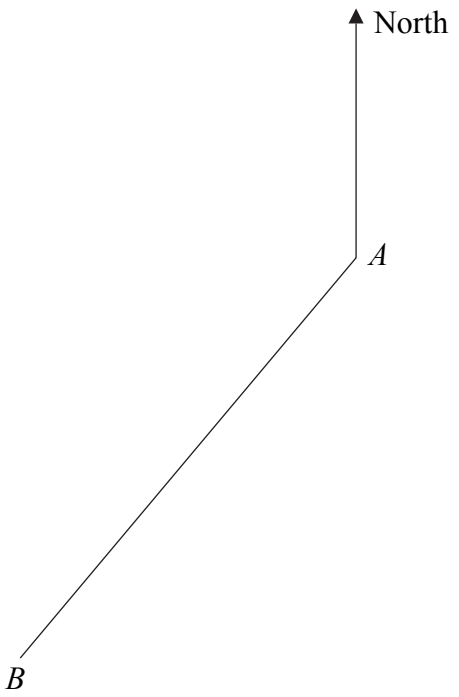
(1)

Q16

(Total 7 marks)

Leave blank

17. The diagram shows two towns, *A* and *B*.



(a) Measure the bearing of *B* from *A*.

.....°

(2)

(b) A plane flies along the perpendicular bisector of *AB*.
Use ruler and compasses to construct the perpendicular bisector of *AB*.
Show all your construction lines.

(2)

(c) The bearing of another town, *C*, from *A* is 120°.
Work out the bearing of *A* from *C*.

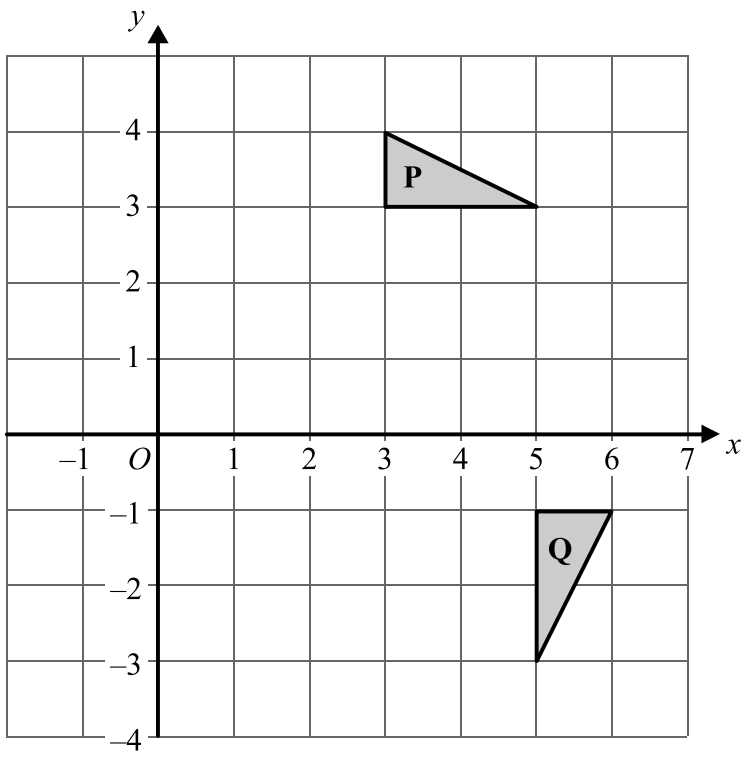
.....°

(1) **Q17**

(Total 5 marks)

Leave blank

18.



(a) Describe fully the **single** transformation that maps **P** onto **Q**.

.....

.....

(3)

(b) Another shape, **R**, is enlarged by scale factor 2 to give shape **S**.

Write down whether each of the following statements is a true statement or a false statement.

(i) The lengths in **R** and **S** are the same. .....

(ii) The angles in **R** and **S** are the same. .....

(iii) Shapes **R** and **S** are similar. .....

(iv) Shapes **R** and **S** are congruent. .....

(2)

Q18

(Total 5 marks)

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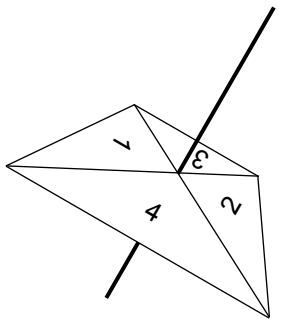
19. Here is a four sided spinner.



Its sides are labelled 1, 2, 3 and 4

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

Number	Probability
1	0.25
2	0.25
3	0.1
4	

The spinner is spun once.

(a) Work out the probability that the spinner lands on 4

.....

(2)

(b) Work out the probability that the spinner lands on either 2 or 3

.....

(2) **Q19**

(Total 4 marks)

TOTAL FOR PAPER: 100 MARKS

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