Centre No.						Paper Reference							Surname	Initial(s)
Candidate No.						4	4	0	0	/	1	F	Signature	

Paper Reference(s)

4400/1F

Examiner's use only

Team Leader's use only

London Examinations IGCSE

Mathematics

Paper 1F

Foundation Tier

Thursday 11 November 2010 – 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

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initials 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.
Without sufficient working, correct answers may be awarded no marks.
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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Turn over

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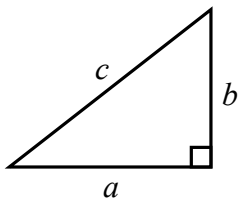
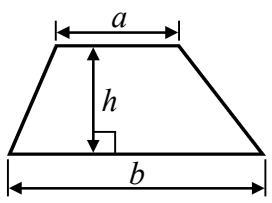
IGCSE MATHEMATICS 4400

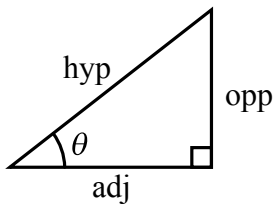
FORMULA SHEET – FOUNDATION TIER

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



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





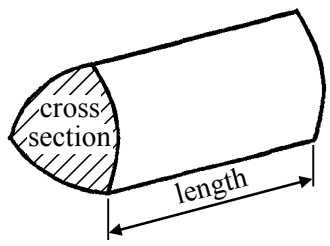
adj = hyp × cos θ
opp = hyp × sin θ
opp = adj × tan θ

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

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

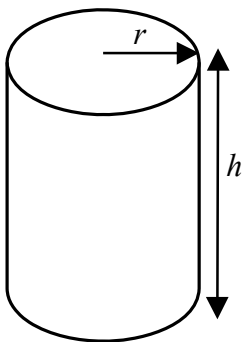
$\tan\theta = \frac{\text{opp}}{\text{adj}}$

Volume of prism = area of cross section × length



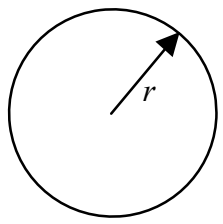
Circumference of circle = $2\pi r$

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 TWO questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1. (a) Write a number in each box so that each statement is correct.

(i) 999 + ☐ = 2000

(1)

(ii) 999 × ☐ = 19 980

(1)

(b) Write down the multiple of 7 that is between 30 and 40

.....

(1)

(c) Write down all the factors of 33

.....

(2)

(d) Write down a prime number that is between 30 and 40

.....

(1)

Q1

(Total 6 marks)

2. Write down the next two terms in this sequence.

82 86 90 94

..... , ...

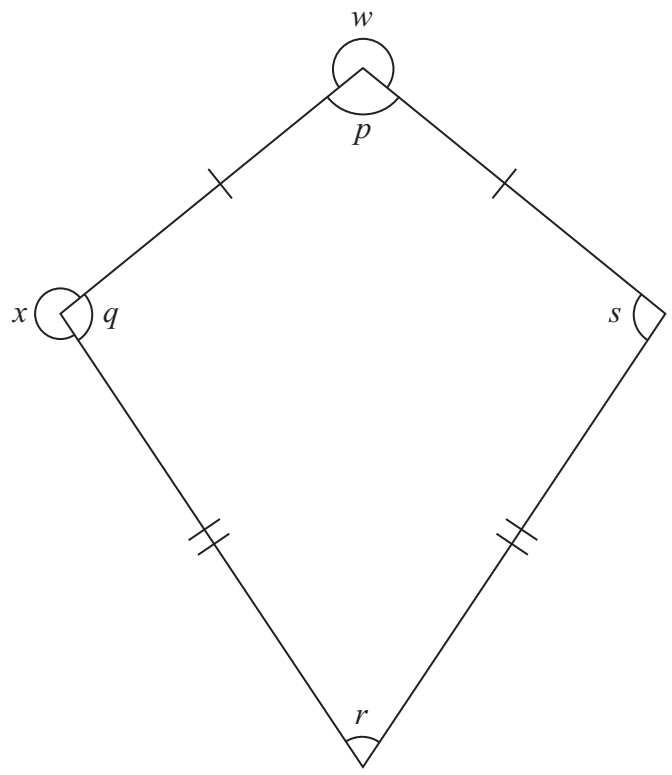
Q2

(Total 2 marks)

Turn over

Leave blank

3. The diagram shows a quadrilateral with two pairs of equal sides.



(a) What is the mathematical name for this quadrilateral?

.....

(1)

(b) Write down a letter which marks

(i) an acute angle,

.....

(ii) a reflex angle.

.....

(2)

Q3

(Total 3 marks)

Leave blank

4.

Certain	Likely	Unlikely	Impossible

A whole number between 0 and 100 is found at random.
Write down the word from the box that best describes each event.

(i) The number is greater than 90

.....

(ii) The number is greater than 10

.....

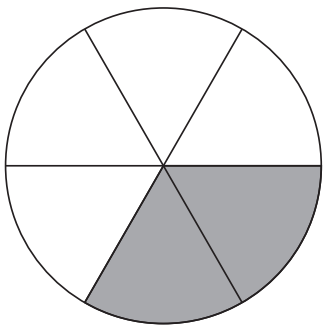
(iii) The number is 101

.....

(Total 3 marks)

Q4

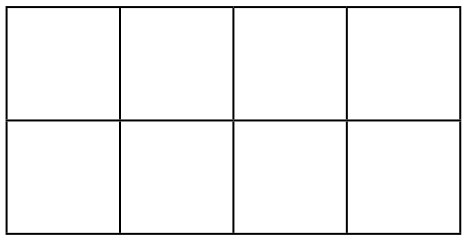
5. (a) What fraction of this shape is shaded?



.....

(1)

(b) Shade 75% of this shape.



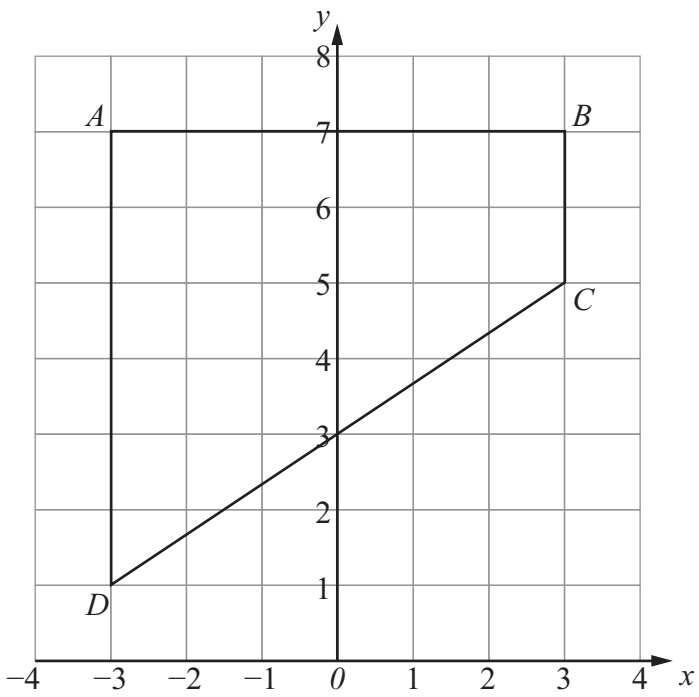
(1)

Q5

(Total 2 marks)

Leave blank

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



(a) Write down the coordinates of the point *B*.

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

(b) Write down the coordinates of the point *D*.

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

(c) Measure the length of *DC*.

..... cm
(1)

(d) Work out the perimeter of *ABCD*.

..... cm
(2)

(Total 5 marks)

Q6

Leave blank

7. The temperature on Monday morning was 5°C.
The temperature on Tuesday morning was –6°C.

(a) How many degrees higher was the temperature on Monday morning than the temperature on Tuesday morning?

..... °C
(2)

(b) On Wednesday morning the temperature was 3°C lower than the temperature on Tuesday morning.

Work out the temperature on Wednesday morning.

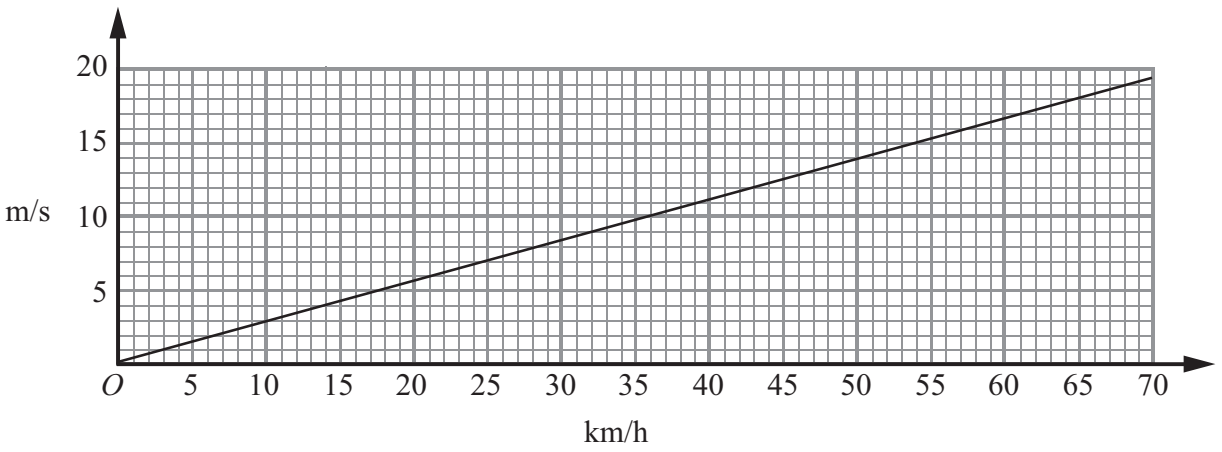
..... °C
(2)

Q7

(Total 4 marks)

Leave blank

8. This graph can be used to convert between kilometres per hour (km/h) and metres per second (m/s).



(a) Use the graph to convert

(i) 54 km/h to m/s,

..... m/s

(ii) 11 m/s to km/h.

..... km/h
(2)

(b) Convert 90 km/h to m/s.

..... m/s
(2)

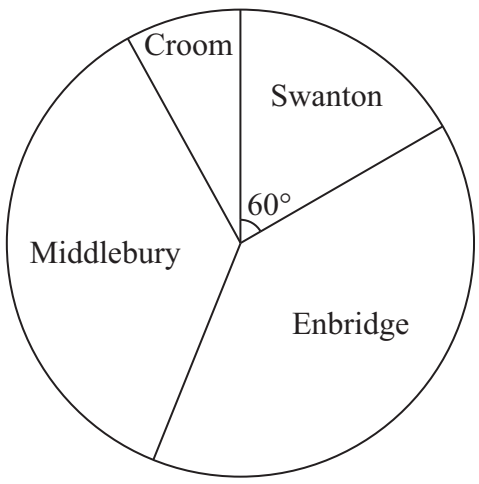
Q8

(Total 4 marks)

Leave blank

9. There are 72 students in a year group.

(a) The students come from 4 towns.
The pie chart gives information about the number of students who come from each town.



Work out the number of students who come from Swanton.

.....

(2)

(b) The table shows the number of students in each of three classes.

Class	Number of students
11X	20
11Y	30
11Z	22
Total	72

Michelle wants to draw a pie chart to show this information.
Calculate the angle in the pie chart for class 11X.

.....°

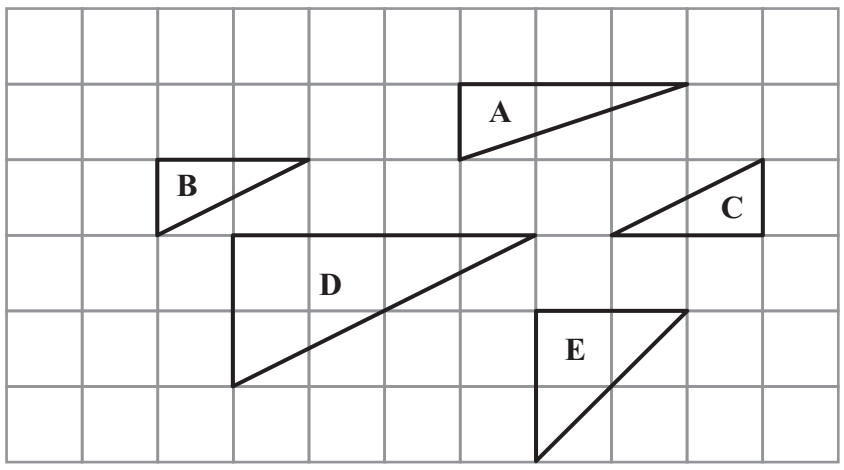
(2)

(Total 4 marks)

Q9

Leave blank

10. Here are some triangles drawn on a centimetre grid.



(a) Write down the letters of the two triangles which are congruent.

..... , ...

(1)

(b) Write down the letters of two triangles which are similar but not congruent.

..... , ...

(1)

(c) What type of transformation will map triangle **B** onto triangle **C**?

.....

(1)

Q10

(Total 3 marks)

11. Andreas arrived at his office at 8 25 am and left at 5 10 pm.

(a) Write 5 10 pm as a time using the 24-hour clock.

.....

(1)

(b) Work out the length of time Andreas was at his office.
Give your answer in hours and minutes.

..... hours ..... minutes

(3)

Q11

(Total 4 marks)

Leave blank

12. There are 160 players in a hockey club.

$\frac{3}{5}$ of these players are males.

(a) (i) What fraction of the players are female?

.....

(ii) Work out the number of female players.

.....

(3)

20 of the 160 players are in the first team squad.

(b) (i) Express 20 out of 160 as a fraction.
Give your fraction in its simplest form.

.....

(ii) Convert your answer to part (b)(i) to a percentage.

..... %

(4)

(c) Medals cost £5.25 each.
The club has £100 to spend on medals.
Is £100 enough to buy medals for all 20 players in the first team squad?
You must show your working.

.....

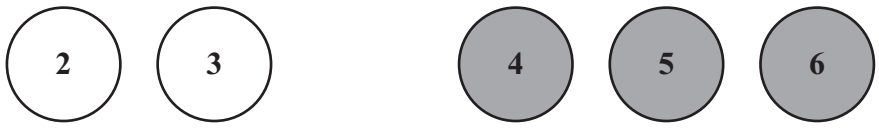
(3)

Q12

(Total 10 marks)

Leave blank

13. Here are 2 white discs and 3 grey discs.
Each disc has a number on it.



A white disc and a grey disc are taken at random.
The numbers on these two discs are multiplied together.

(a) Complete the table to show all the possible outcomes.

		Grey disc		
		4	**5**	**6**
White disc	**2**			12
	3			

(2)

(b) Find the probability that the outcome will be 12

.....

(2)

(c) Find the probability that the outcome will **not** be 12

.....

(1)

(Total 5 marks)

Q13

Leave blank

14. The table shows information about the numbers of children in 25 families.

Number of children in the family	Frequency
1	4
2	9
3	8
4	0
5	4

Work out the mean number of children in these 25 families.

.....

(Total 3 marks)

Q14

Leave blank

15. (a) Simplify $2a + 6b – a + 3b$

.....

(2)

(b) Expand

(i) $4(c – 3)$

.....

(1)

(ii) $d(d^2 + 4)$

.....

(2)

(c) Factorise $3x – 2x^2$

.....

(2) **Q15**

(Total 7 marks)

Leave blank

16. *ABC* is an isosceles triangle.
BA = *BC*.
PA is parallel to *BC*.
Angle *ACB* = 70°.

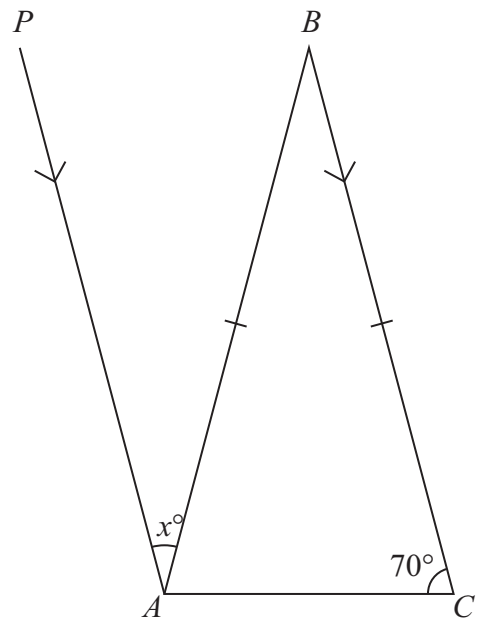


Diagram **NOT** accurately drawn

Find the value of *x*.
Give a reason for each step in your working.

x = ...

Q16

(Total 4 marks)

Leave blank

17.

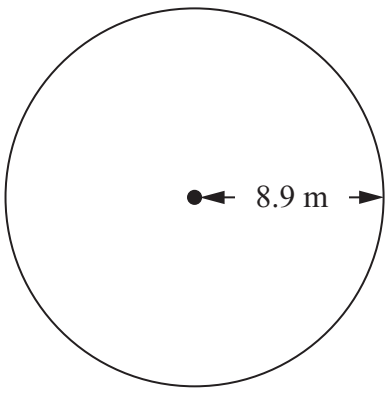


Diagram **NOT** accurately drawn

A circular pond has radius 8.9 m.

(a) Find the area of the pond.
Write down all the figures on your calculator display.
State the units of your answer.

....

(3)

(b) Give the value of your area correct to 2 significant figures.

.....

(1)

Q17

(Total 4 marks)

Leave blank

18. (a) Show that $\frac{6}{7} \div 4 = \frac{3}{14}$

(2)

(b) Show that $3\frac{2}{5} - 1\frac{2}{3} = 1\frac{11}{15}$

(3) **Q18**

(Total 5 marks)

Leave blank

19. (a) Solve $3w + 7 = 19$

$w =$ .....

(2)

(b) Solve $7x + 3 = 2x - 4$

$x =$ .....

(3)

(c) Solve $\dfrac{16 - 5y}{3} = 2$

$y =$ .....

(3)

Q19

(Total 8 marks)

Leave blank

20. $\mathcal{E}$ = {Clothes}
A = {Mr Smith's clothes}
B = {Hats}
C = {Mrs Koshi's hats}

(a) (i) Describe the members of the set $A \cap B$

.....

(ii) How many members has the set $A \cap C$?

.....
(2)

(b)

A	B	C	$\mathcal{E}$	$\in$	$\varnothing$	$\cap$	$\cup$

Use a letter or symbol from the box to make each of the following a true statement.

(i) $B \cup C$ = ...

(ii) Mr Smith's favourite shirt ..... A

(2)

(Total 4 marks)

Q20

Turn over

Leave blank

21. (a)

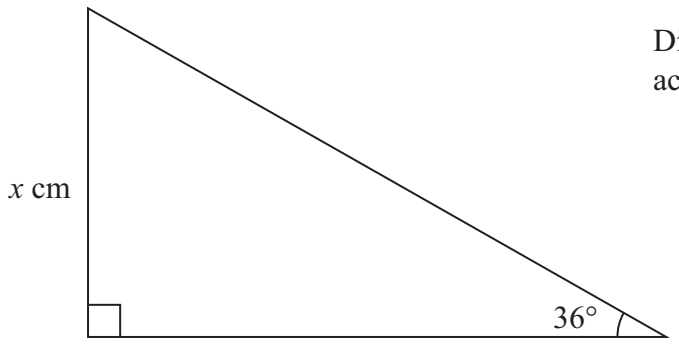


Diagram **NOT** accurately drawn

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

x = ...

(3)

(b)

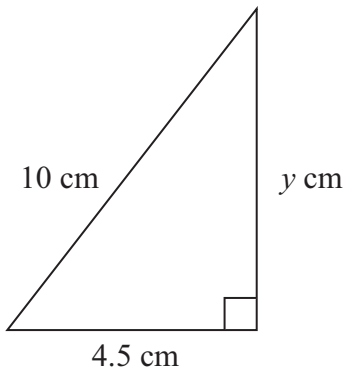


Diagram **NOT** accurately drawn

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

y = ...

(3)

Q21

(Total 6 marks)

Leave blank

22. (a) Three positive whole numbers are all different.
They have a median of 5 and a mean of 4
Find the three numbers.

.....

(2)

(b) Find four whole numbers which have a mode of 5 and a median of 6

.....

(2)

Q22

(Total 4 marks)

TOTAL FOR PAPER: 100 MARKS

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