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RECOGNISING ACHIEVEMENT

F

Tuesday 15 January 2013 – Afternoon

GCSE MATHEMATICS A

A501/01 Unit A (Foundation Tier)

A516850113

Candidates answer on the Question Paper.

OCR supplied materials:
None

Other materials required:
- Scientific or graphical calculator
- Geometrical instruments
- Tracing paper (optional)

Duration: 1 hour

A501 01

Candidate forename		Candidate surname	

Centre number						Candidate number				

INSTRUCTIONS TO CANDIDATES

- Write your name, centre number and candidate number in the boxes above. Please write clearly and in capital letters.
- Use black ink. HB pencil may be used for graphs and diagrams only.
- Answer **all** the questions.
- Read each question carefully. Make sure you know what you have to do before starting your answer.
- Your answers should be supported with appropriate working. Marks may be given for a correct method even if the answer is incorrect.
- Write your answer to each question in the space provided. Additional paper may be used if necessary but you must clearly show your candidate number, centre number and question number(s).
- Do **not** write in the bar codes.

INFORMATION FOR CANDIDATES

- The number of marks is given in brackets **[ ]** at the end of each question or part question.
- The total number of marks for this paper is **60**.
- This document consists of **16** pages. Any blank pages are indicated.

You are permitted to use a calculator for this paper

This paper has been pre modified for carrier language

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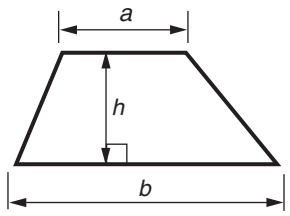
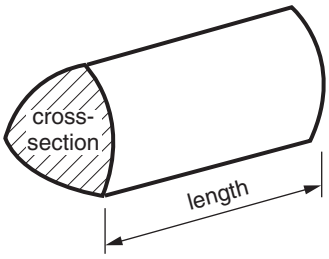
Formulae Sheet: Foundation Tier

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



Volume of prism = (area of cross-section) × length



PLEASE DO NOT WRITE ON THIS PAGE

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1 Here is a list of numbers.

56	75	27	16	7

Choose from this list

(a) a multiple of 5,

(a) _____ **[1]**

(b) two numbers whose difference is 11,

(b) _____ and _____ **[1]**

(c) a square number,

(c) _____ **[1]**

(d) the two numbers which give the largest total when added together,

(d) _____ and _____ **[1]**

(e) a factor of 28.

(e) _____ **[1]**

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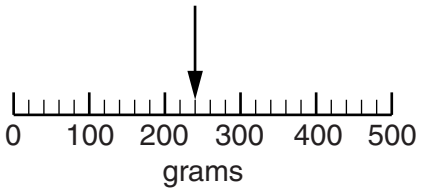
2 Ola makes flapjacks.

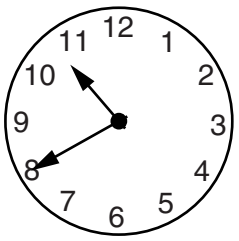
(a) She uses this weight of oats.



What weight of oats does she use?

(a) _____ g **[1]**

(b) The flapjacks take 25 minutes to cook.
Ola starts to cook them at this time.



At what time do the flapjacks finish cooking?

(b) _____ **[1]**

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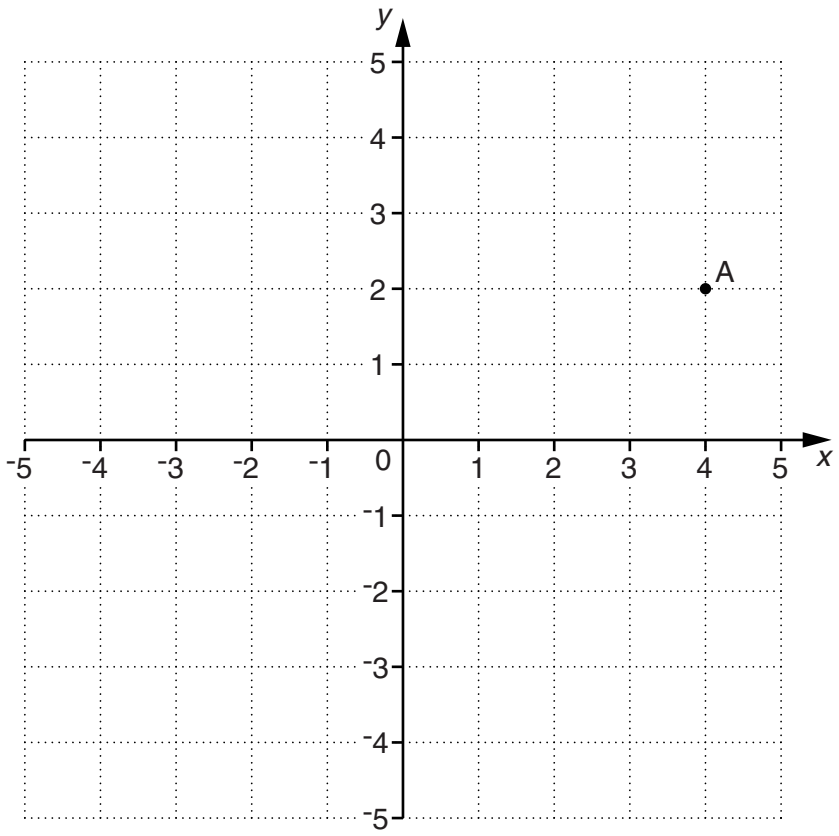
3 Point A is plotted on the grid.



(a) Write down the coordinates of point A.

(a) (_____ , _____) **[1]**

(b) Plot the point with coordinates ($^-$5, 3).
Label it B. **[1]**

(c) Plot the point with coordinates (0, $^-$4).
Label it C. **[1]**

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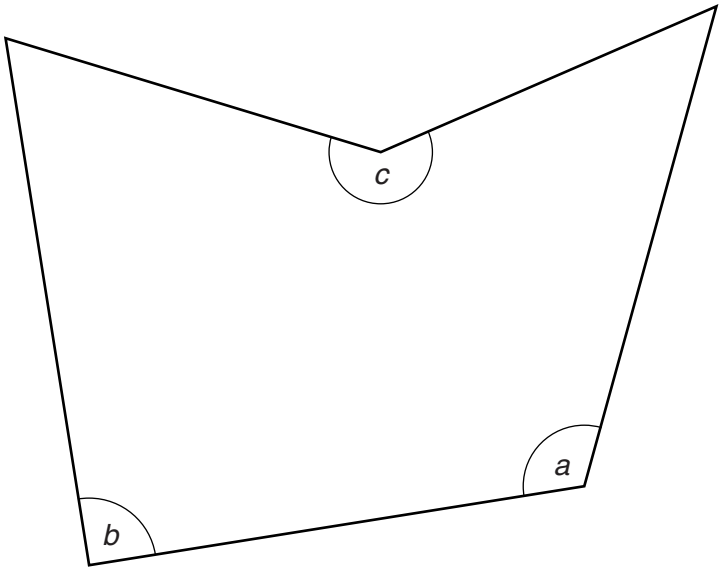
4 Look at this shape and the list of words.



reflex	a right angle
acute	obtuse

Use words from the list to complete the following.

Angle *a* is _____ .

Angle *b* is _____ .

Angle *c* is _____ . **[3]**

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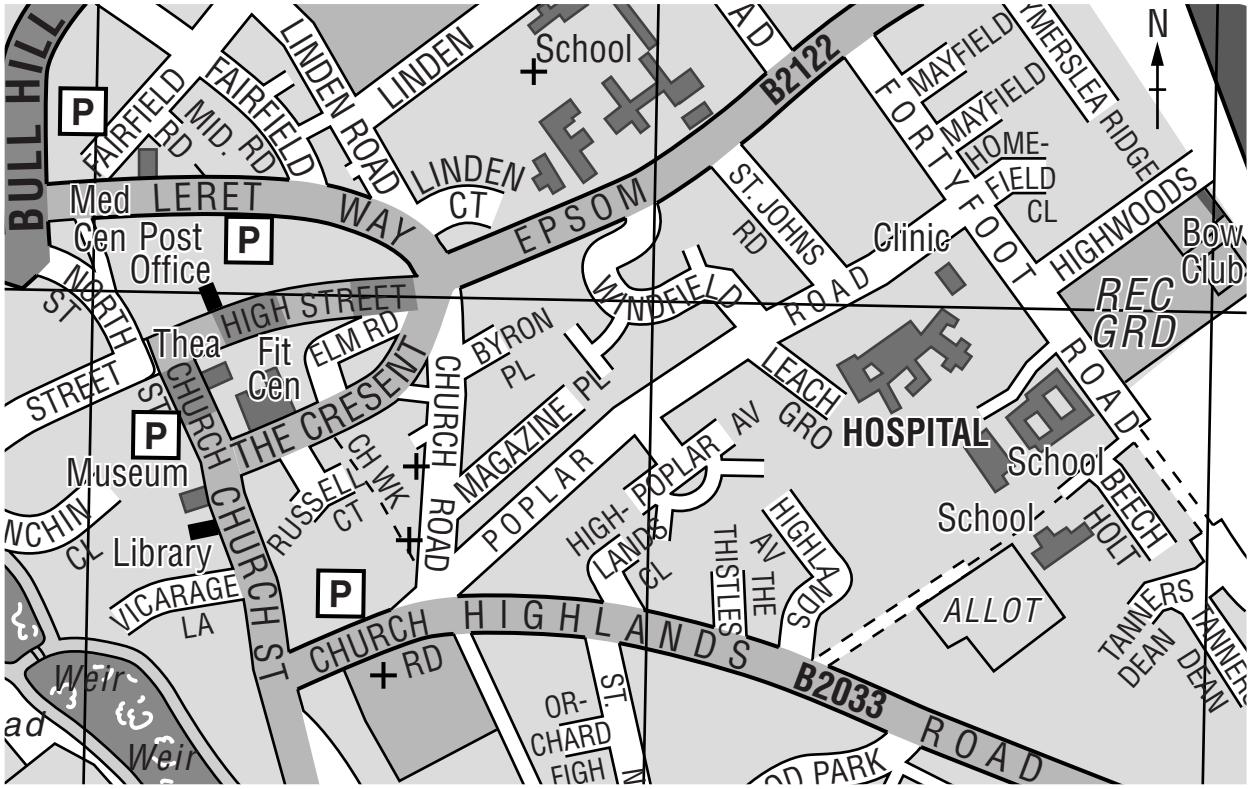
5 This map shows part of Leatherhead.



(a) Laura walks out of the Hospital onto Poplar Road.
She crosses over into St Johns Road.

What are the buildings she can see in front of her at the end of the road?

(a) _____ **[1]**

(b) (i) In what compass direction is the Post Office from the Library?

(b)(i) _____ **[1]**

(ii) Pali is in the Library.
He wants to walk to the Post Office.

Complete these instructions.

Come out of the Library and turn _____ into Church Street.

At the end of the road turn _____ into High Street.

The Post Office is on your _____ . **[2]**

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6 Colin has a boat.

(a) He makes a model of the boat.
He uses the scale: 1 cm represents 20 cm.

The width of the model boat is 6.7 cm.

Find the width of the real boat.

(a) _____ cm **[2]**

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(b) Here are the weights of some people in Colin's family.

146 kg 85 kg 97 kg 32 kg 41 kg

(i) For safety, the boat can only carry people with a total weight of 450 kg or less.

Can all these people go on the boat together safely?
Show how you decide. **[2]**

(ii) Calculate the mean weight of these 5 people.

(b)(ii) _____ kg **[2]**

(iii) Calculate the range of their weights.

(iii) _____ kg **[1]**

(c) Colin uses a mixture of oil and petrol in the ratio 1 : 50 to fuel his boat.

How many millilitres of oil does he need to use with 3 litres of petrol?
Show how you decide.

(c) _____ ml **[2]**

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7 Here are the times in minutes that the trains took to get from Ayton to Beechford one morning.

64	50	54	53	55	47	54
45	53	66	51	65	54	82
57	66	53	65	52	63	50

(a) One of these trains was very delayed on its journey.

How long did this train take?

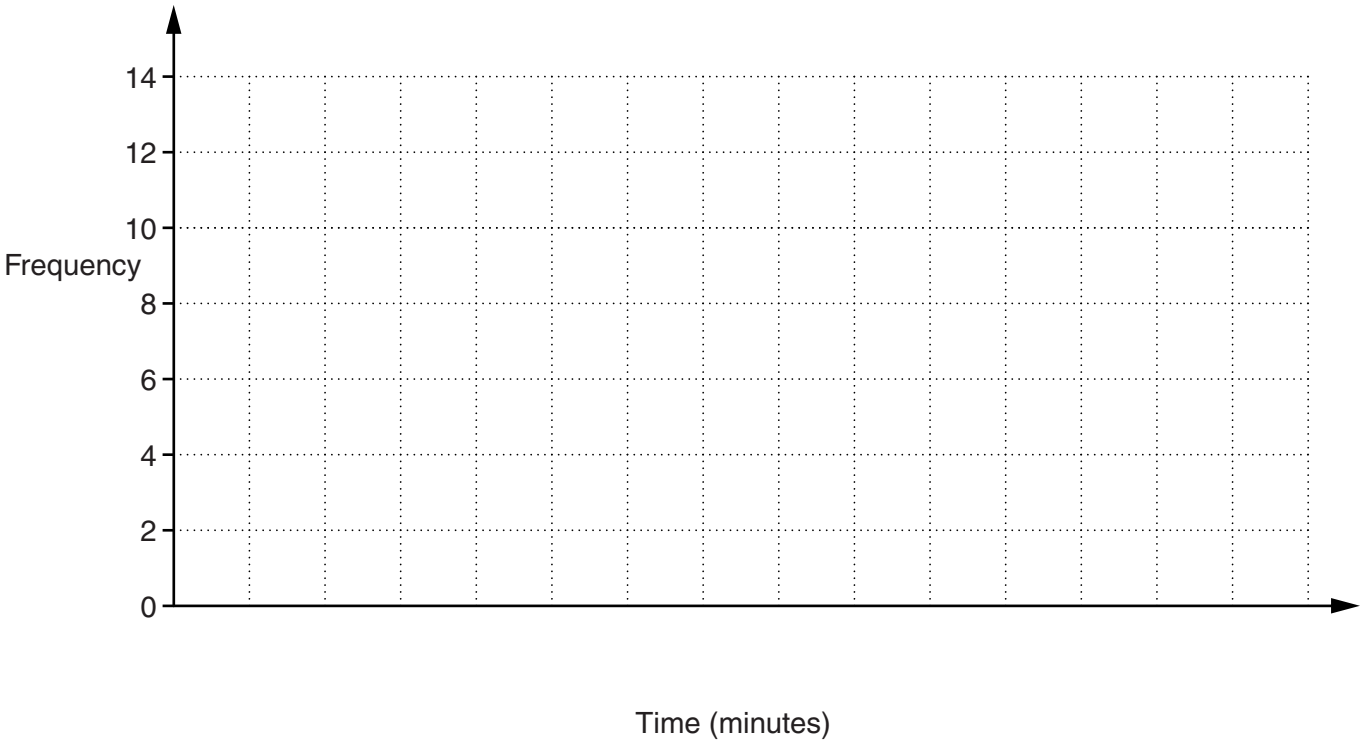
(a) _____minutes **[1]**

(b) Complete the following frequency table for all the train times.

Time (minutes)	Tally	Frequency
40–49		
50–59		
60–69		
70–79		
80–89		

[2]

(c) Use your frequency table to draw a bar chart to represent the information.
Remember to label the bars on the Time axis.



[3]

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8 Katie is given three different medicines and instructions how to take each of them.

Medicine **A** A 500 ml bottle of medicine.
Take 10 ml once a day before bedtime.

Medicine **B** A bottle containing 150 tablets.
Take two tablets three times a day.

Medicine **C** A bottle containing 120 capsules.
Take one capsule five times a day for the first week.
Then after the first week take one capsule three times a day.

Work out which of the medicines **A**, **B** and **C** Katie uses up first.
How many days does it last?
Show your working. **[6]**

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9 These stem and leaf diagrams show the heights, in centimetres, of a random sample of 25 secondary school students in each of the UK and South Africa.

Heights of UK students

12													
13													
14	2	4	5	9									
15	0	1	1	2	2	6	6	7	7	7	8	8	9	9
16	1	1	2										
17	0	4	5	6									
18													

Key: 16 | 5 represents 165 cm

Heights of South African students

12	8								
13	1	4							
14	0	1	3	5	5	6			
15	0	0	3	3	3	5	6	7	7
16	2	7	8	9					
17	2								
18	0	5							

Key: 16 | 5 represents 165 cm

The tallest of all these students is in South Africa.

Are the South African students taller than the UK students on average?
Use the medians to show how you decide.

_____

_____ **[3]**

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10 **(a)** Simplify fully.

$3a + 6 + 5a - 2$

(a) _____ **[2]**

(b) Write an expression for the total cost in pence of c cakes at 25p each and r rolls at 15p each.

(b) _____ pence **[2]**

(c) Solve.

$2 = 5x + 17$

(c) _____ **[2]**

(d) Multiply out.

$6(3y + 5)$

(d) _____ **[1]**

(e) Factorise.

$5y - 15$

(e) _____ **[1]**

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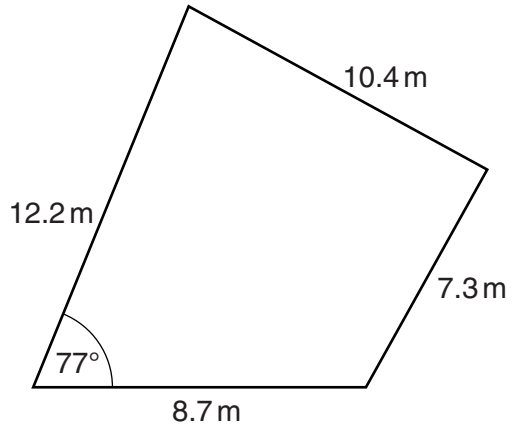
11 *In this question use a ruler, a protractor and a pair of compasses.*
Do not rub out your construction lines.

This diagram shows a sketch of Salome's garden.



Not to scale

Salome wants to make a scale drawing of her garden.
Her drawing has been started below.

Complete her scale drawing.
Use the scale: 1 cm represents 1 metre.

8.7 m

[4]

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12 **(a)** Calculate.

$$\frac{(3.6 + 13.2)^2}{4.1^2 - 2.9^2}$$

(a) _____ **[2]**

(b) Express 120 as a product of its prime factors.

(b) _____ **[2]**

TURN OVER FOR QUESTION 13

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13 The nth term of a sequence is $5n - 2$.

Find the largest number in the sequence which is less than 1000.
Find also which term in the sequence this number is.

The largest number in the sequence which is less than 1000 is _____ .

It is the _____ th term. **[3]**

END OF QUESTION PAPER

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