THIS IS A NEW SPECIFICATION

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F

Thursday 19 January 2012 – Afternoon

GCSE MATHEMATICS A

A501/01 Unit A (Foundation Tier)

A516850112

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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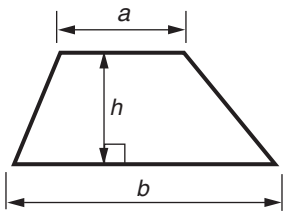
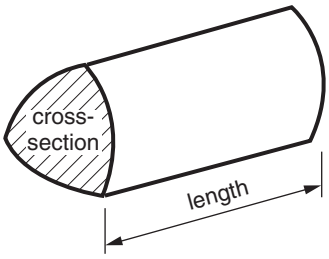
Formulae Sheet: Foundation Tier

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 On 11th September 2010, the attendance at Arsenal's football match was 59 876.

(a) Round 59 876 correct to the nearest hundred.

(a) _____ **[1]**

(b) The attendance at Everton's match that day was 23 320 fewer than at Arsenal's match.

What was the attendance at Everton's match?

(b) _____ **[2]**

(c) The attendance at Fulham's match that day was

twenty-five thousand two hundred and eighty.

Write this number in digits.

(c) _____ **[1]**

(d) The attendance at West Ham's match that day was 33 014.

Write 33 014 in words.

_____

_____ **[1]**

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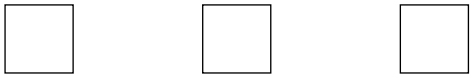
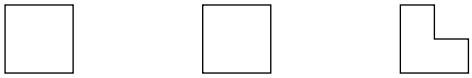
2 **(a)** This pictogram represents the number of packets of flower bulbs that a shop sold one morning.

Crocuses	
Daffodils	
Tulips	
Irises	
Hyacinths	
Other	

Key: = 4 packets

(i) How many packets of Hyacinths were sold?

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

(ii) How many **more** packets of Daffodils were sold than packets of Tulips?

(ii) _____ **[1]**

(iii) 5 packets of Irises were sold.

Complete the row of the pictogram for Irises. **[1]**

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(b) Here are the numbers of packets of Crocuses that the shop sold each day in one week.

23 16 31 13 9 20 21

(i) Calculate the mean number of packets sold in a day.

(b)(i) _____ **[3]**

(ii) Find the range of the numbers of packets of Crocuses sold that week.

(ii) _____ **[1]**

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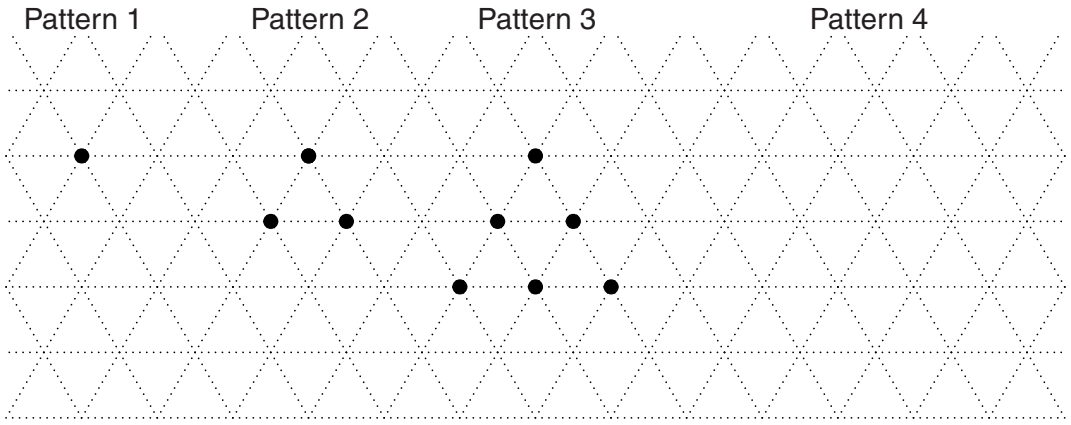
3 Here are the first three patterns in a sequence of dots.



(a) Draw Pattern 4 in the sequence. **[1]**

(b) How many dots are there in Pattern 7?
Explain how you decide.

_____ dots because _____

_____ **[2]**

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4 Jean buys a new greenhouse.
She looks at the price list for the 'extras' she could buy for it.

Item	Price of item
1-tier staging 4 ft long	£39
2-tier staging 4 ft long	£59
1-tier staging 2 ft long	£29
2-tier staging 2 ft long	£39
4 ft top extension	£29
Potting bench	£39
Paraffin heater	£39
Rainwater kit	£11
Watering system	£49
Automatic vent opener	£27

Complete Jean's order form for the 'extras' she decides to buy.

Item	Price of item	Quantity	Price of order
1-tier staging 4 ft long		1	
2-tier staging 4 ft long		1	
4 ft top extension		2	
Rainwater kit		2	
Automatic vent opener		1	
		Total cost	£

[4]

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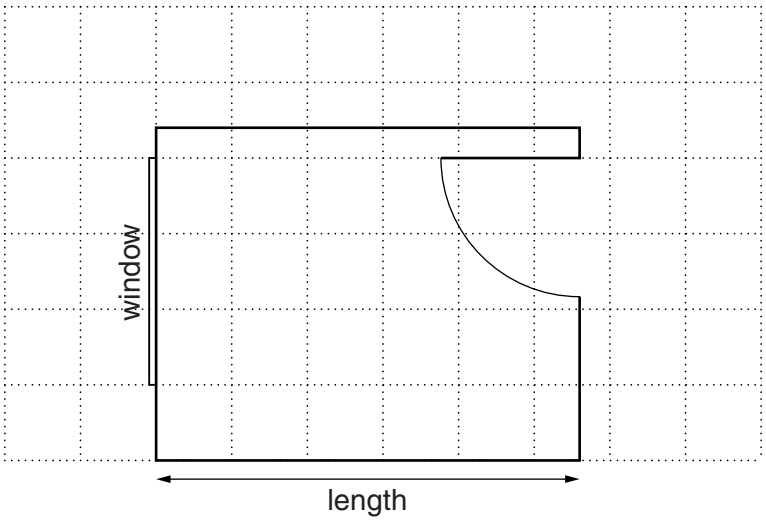
5 Jo is moving house.
This is a scale drawing of her new bedroom.
It shows the positions of the door and the window.
The scale is **1 cm represents 50 cm**.



(a) Find the length of the actual room, in metres.

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

(b) Jo has a bed 200 cm long and 90 cm wide.
She has a desk 150 cm long and 50 cm wide.

Draw accurately on the scale drawing possible positions for the bed and the desk. **[4]**

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6 This chart shows the distances, in miles, between some cities.
For example, the distance between Cambridge and Oxford is 82 miles.

Birmingham						
97	Cambridge					
98	95	Lincoln				
160	63	103	Norwich			
68	82	132	146	Oxford		
91	122	47	148	142	Sheffield	
133	154	79	180	184	57	York

(a) Find the distance between Lincoln and Sheffield.

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

(b) Avron lives in Norwich.
He drives from Norwich to Birmingham.
He then drives from Birmingham to Sheffield.
On his way home, he drives straight from Sheffield to Norwich.

How many miles **more** was his journey to Sheffield than his journey back to Norwich?
Show how you decide.

(b) _____ miles **[3]**

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7 Anna has 1 pint of liquid.
She uses some of the liquid for 20 experiments.

She does 16 experiments, each using 8 ml of the liquid.
She does 4 experiments, each using 20 ml of the liquid.

How many millilitres of the liquid does she have left after finishing all the experiments?
Use the fact that 1 pint = 0.568 litres.

_____ ml **[4]**

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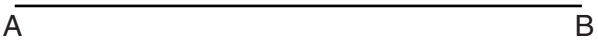
8 *In part (a) of this question, use a ruler and a pair of compasses.*
Do not rub out your construction lines.

Triangle ABC has AB = 7.5 cm, BC = 6.4 cm and AC = 8.1 cm.

(a) Make an accurate drawing of triangle ABC.
Side AB has been drawn for you.



[2]

(b) Measure angle B in your triangle.

(b) _____ ° **[1]**

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9 An electronic device squeaks every 25 seconds.
Its battery lasts for 9 months.

How many times does the device squeak before its battery must be replaced?
Show clearly any assumptions you make.

_____ **[4]**

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10 Mike is trying to choose between these special offers in a supermarket.

10-can pack of Diet Cola for £2.50	6-can pack of Diet Cola for £2.85 Buy one pack get one pack free!

(a) Work out which offer is better value for money.
Show how you decide. **[3]**

(b) Give one reason why buying the best value offer may not be the most suitable choice for Mike.

_____

_____ **[1]**

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11 **(a)** Simplify.

$2a + 4a - a$

(a) _____ **[1]**

(b) Factorise.

$21y - 3y^2$

(b) _____ **[2]**

12 Calculate.

$$\frac{15.6 + 81.97}{4.3 \times 9.84}$$

Give your answer correct to 2 decimal places.

_____ **[2]**

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13 John makes jam to sell at a charity fair.
He sells the jam at a price so that

cost of making it : profit for charity

is in the ratio 2 : 3.

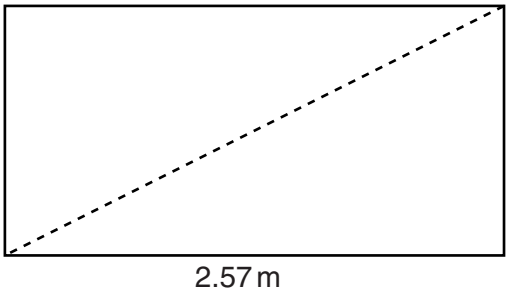
He sells all the jam for a total of £28.

Calculate the cost of making the jam and the profit for charity.

Cost £ _____

Profit £ _____ **[3]**

14 Dave is building a greenhouse.
The base measures 2.57 m by 1.93 m.



Not to scale

Dave checks that the base is a rectangle by measuring the diagonals.

Calculate the length that a diagonal should be.

_____ m **[3]**

TURN OVER FOR QUESTION 15

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15 **(a)** Solve.

$3(2x - 1) = 6$

(a) _____ **[3]**

(b) Find the value of $3y^2 + 5$ when

(i) $y = 2.6$,

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

(ii) $y = -4$.

(ii) _____ **[1]**

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