OCR
RECOGNISING ACHIEVEMENT

F

Tuesday 6 November 2012 – Morning

GCSE MATHEMATICS A

A501/01 Unit A (Foundation Tier)

A516790312

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

A501601

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

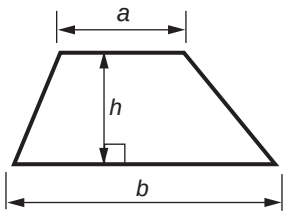
- The number of marks is given in brackets **[ ]** at the end of each question or part question.
- The total number of marks for this paper is **60**.
- This document consists of **16** pages. Any blank pages are indicated.

You are permitted to use a calculator for this paper

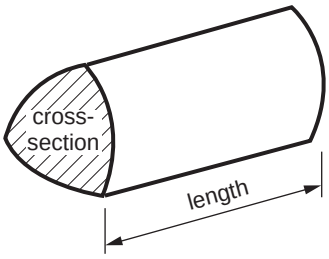
This paper has been pre modified for carrier language

Formulae Sheet: Foundation Tier

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



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



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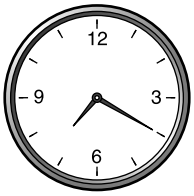
1 Nigel travels from Clandon to London Waterloo by train.
Here is part of the train timetable.

Leaving	From	To	Arriving
06:46	Clandon	London Waterloo	07:39
07:16	Clandon	London Waterloo	08:11
07:26	Clandon	London Waterloo	08:13
07:46	Clandon	London Waterloo	08:36
08:16	Clandon	London Waterloo	09:01

(a) He arrives at Clandon station at this time in the morning.



What time is the next train to London Waterloo?

(a) _____ **[1]**

(b) How many minutes should this train take to get from Clandon to London Waterloo?

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

2 This table shows the maximum and minimum temperatures in Guildford one week.

	Mon	Tues	Wed	Thurs	Fri
Maximum temperature (°C)	-2	3	0	3	6
Minimum temperature (°C)	-4	-2	-3	0	3

(a) On which day was the lowest minimum temperature?

(a) _____ **[1]**

(b) What was the difference between the maximum temperature and the minimum temperature on Tuesday?

(b) _____ °C **[1]**

(c) On Wednesday, the minimum temperature in Cambridge was 8°C lower than the minimum temperature in Guildford that day.

What was the minimum temperature in Cambridge that day?

(c) _____ °C **[1]**

3 Complete the following sentences using metric units from this list.

m	mm	km	cm	kg	g	ml

A hen's egg weighs 70 _____ .

A teaspoon holds 5 _____ of medicine.

The length of a desk is 75 _____ .

The height of a tree is 20 _____ .

[4]

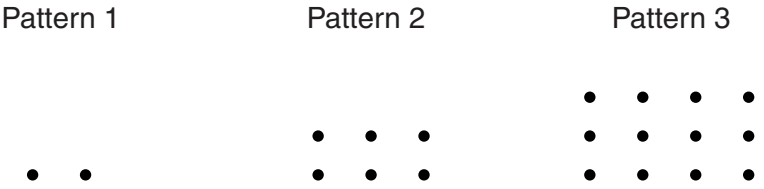
4 Cara orders various items from a catalogue.

Complete her order form.

Item code	Description	Price per item (£)	Quantity	Cost (£)
2601X14	Blue velour jacket size 14	35.70	1	
5431SC	Cream poly-cotton fitted sheet for single bed	23.99	2	
5437SCB	Cream and blue duvet cover for single bed	31.90	1	
5438CB	Cream and blue pillowcases	7.99	2	
8417	Jute shopping bag	2.50	3	
		Post and packing		4.70
		Total		

[4]

5 Here are the first three patterns in a sequence.



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

Pattern 4

(b) Without drawing it, work out how many dots there are in Pattern 5.
Explain how you decide.

_____ dots because _____

_____

_____ **[2]**

(c) One pattern in the sequence has exactly 90 dots.

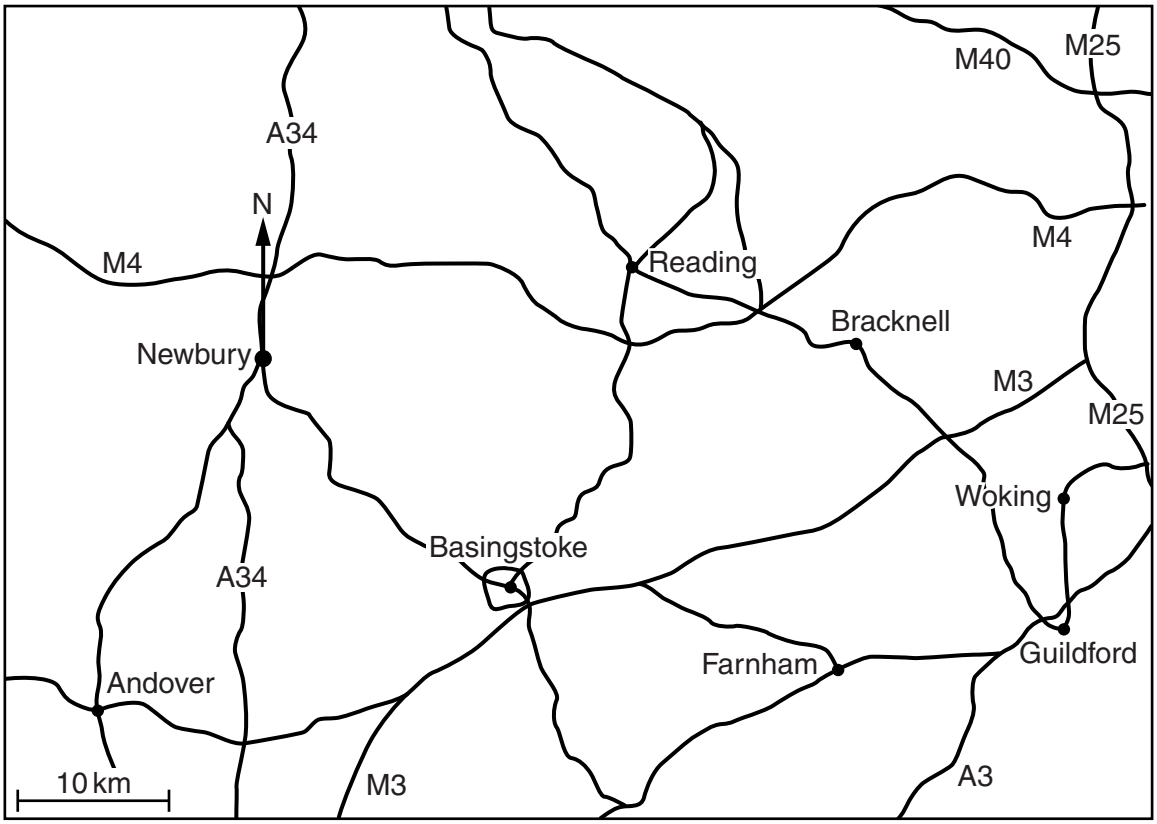
Which Pattern **number** is this?

(c) Pattern _____ **[1]**

6 Mike and Jenny serve tea and coffee at a lunch club.
They boil 9 litres of water in an urn and 2.7 litres of water in a kettle.
They need to serve 48 people a cup of tea or coffee each.
Each cup uses 250 ml of water.

Have they boiled enough water to serve everyone?
Show how you decide. **[4]**

7 This map shows some places in the South of England.



(a) Complete the following using compass directions.

Guildford is _____ of Woking.

Newbury is _____ of Basingstoke.

[2]

(b) **Estimate** the distance in kilometres between Newbury and Basingstoke.

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

(c) Draw a straight line joining Newbury to Farnham.

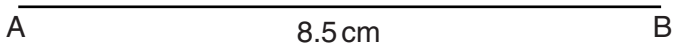
Measure the bearing of Farnham from Newbury.

(c) _____ ° **[1]**

8 *In this question, use a pair of compasses and a ruler.*
Leave in all your construction lines.

Triangle ABC has sides AB = 8.5 cm, AC = 7.3 cm and BC = 6.8 cm.

Complete the accurate drawing of triangle ABC.
Side AB has been drawn for you.



[2]

9 **(a)** Simplify.

$4m + 3t + 5 - 2m + 4t + 6$

(a) _____ **[3]**

(b) Solve these equations.

(i) $x + 8 = 0$

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

(ii) $5y - 7 = 1$

(ii) _____ **[2]**

(c) Rearrange this formula to make x the subject.

$y = 4x + 6$

(c) _____ **[2]**

10 **(a)** An examination is taken by candidates from 547 centres.

Write 547 correct to the nearest hundred.

(a) _____ **[1]**

(b) The examination is taken by 76 841 candidates.

Write 76 841 correct to the nearest thousand.

(b) _____ **[1]**

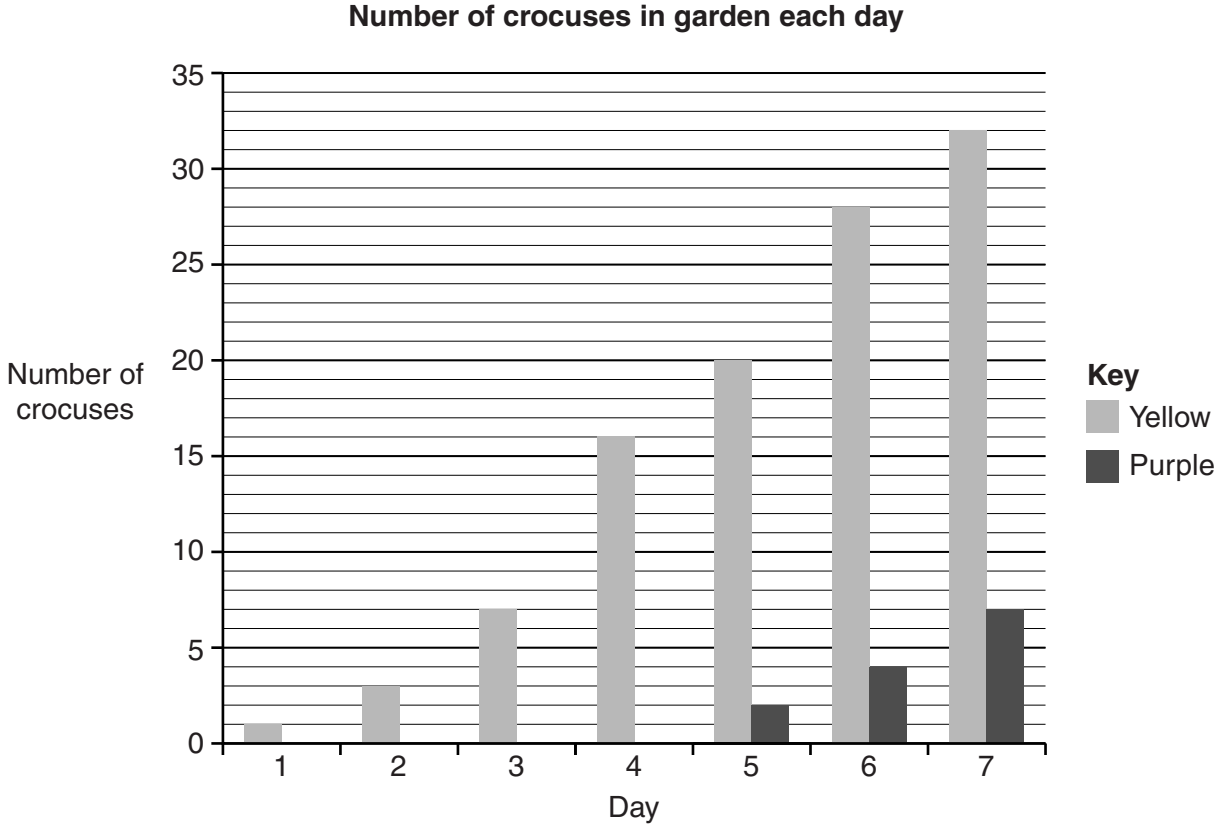
(c) The examination question booklet is made from 5 sheets of A3 size paper.
8 sheets of A3 paper cover 1 square metre.
There are two options for printing the examination booklet.

- Option N: new paper is used, weighing 90 g per square metre.
- Option R: recycled paper is used, weighing 80 g per square metre.

Calculate how much less the examination booklet weighs if Option R is used instead of Option N.
Show how you decide.

(c) _____ g **[4]**

11 **(a)** Chris grows crocuses in his garden.
Each day from when the flowers first appear in spring, he records the colour of the flowers and how many there are.
This bar chart shows the results.



(i) On which day does Chris first see a Purple crocus?

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

(ii) How many **more** Yellow crocuses are there on day 6 than day 3?

(ii) _____ **[2]**

(iii) How many Yellow and Purple crocuses are there altogether on day 7?

(iii) _____ **[2]**

(b) Joe and Pam planted crocus bulbs in their gardens.
They shared a bag of 250 crocus bulbs.
The table shows the colour of the flower from each bulb.

	Yellow	Purple	White	Totals
Joe	64	40		125
Pam	56		32	125
Totals	120			250

(i) Complete the table. **[3]**

(ii) Write the ratio 64 : 56 as simply as possible.

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

(c) Sumita bought a pack of 60 crocus bulbs which produced Yellow, Purple or White flowers.
The ratio Yellow : Purple : White was 7 : 5 : 3.

How many of the 60 bulbs produced White flowers?

(c) _____ **[3]**

12 (a) Mandi writes a questionnaire about music.
Here is one of her questions and the response boxes for it.

How many CDs do you own?

0 - 5 ☐ 5 - 10 ☐ 10 - 15 ☐ 15 - 20 ☐

Mandi has made two different types of error in the categories she has chosen.

Explain what these errors are.

1 _____

_____

2 _____

_____

[2]

(b) Mandi analyses the length of time of each track on her CDs.
This table summarises the results.

Length (t seconds)	Frequency
$0 < t \leqslant 100$	2
$100 < t \leqslant 200$	10
$200 < t \leqslant 300$	15
$300 < t \leqslant 400$	9
$400 < t \leqslant 500$	3
$500 < t \leqslant 600$	1

Calculate an estimate of the mean length of time of these tracks.

(b) _____ seconds **[4]**

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