

Wednesday 4 November 2015 – Morning

GCSE MATHEMATICS A

A501/01 Unit A (Foundation Tier)

Candidates answer on the Question Paper.

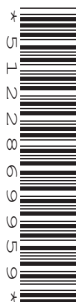
OCR supplied materials:

None

Other materials required:

- Scientific or graphical calculator
- Geometrical instruments
- Tracing paper (optional)

Duration: 1 hour



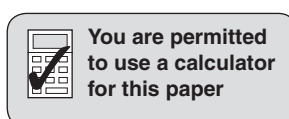
Candidate forename						Candidate surname					
Centre number						Candidate number					

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.

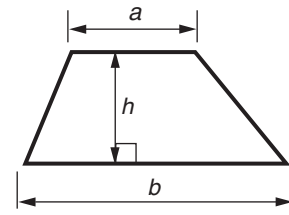
INFORMATION FOR CANDIDATES

- 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.

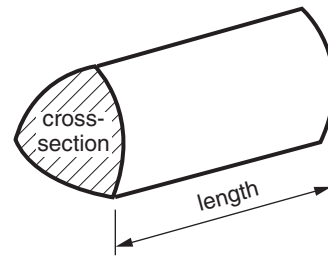


Formulae Sheet: Foundation Tier

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



Volume of prism = (area of cross-section) $\times$ length



PLEASE DO NOT WRITE ON THIS PAGE

- 1 This pictogram shows how many of each type of drink were sold from a drinks machine one morning.

Type of drink	
Coffee	    
Tea	    
Chocolate	   
Orange juice	
Hot water	 

Key:  represents 4 drinks

- (a) How many drinks of coffee were sold?

(a) [1]

- (b) How many drinks of chocolate were sold?

(b) [1]

- (c) That morning, 10 drinks of orange juice were sold.

Complete the pictogram to show this information.

[1]

2 Here is a list of numbers.

17	28	33	38	46	52	54
----	----	----	----	----	----	----

Choose from the list.

(a) a multiple of 7,

(a) [1]

(b) a number that can be divided exactly by 9,

(b) [1]

(c) two numbers which add to 90,

(c) and [1]

(d) a prime number.

(d) [1]

3 This map shows part of Guildford.



(a) There is a food store in Madrid Road, opposite the end of Dunsdon Avenue.

Put a cross to show the position of the food store.

[1]

(b) Annan drives along Wherwell Road and then straight across Farnham Road.

What is the name of the road he is now driving along?

(b) Road [1]

(c) Mr Jones comes out of the School.

He needs to get to the Station entrance in Guildford Park Road.

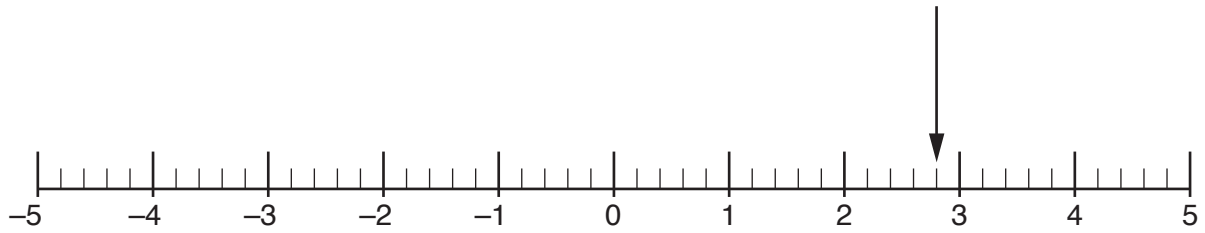
Complete these directions for him.

Come out of the School into Farnham Road and turn

When you reach the roundabout, turn into Guildford Park Road.

Walk along this road. The Station entrance will be on your [1]

- 4 (a) This number line goes from -5 to 5 .



- (i) What number is the arrow pointing to?

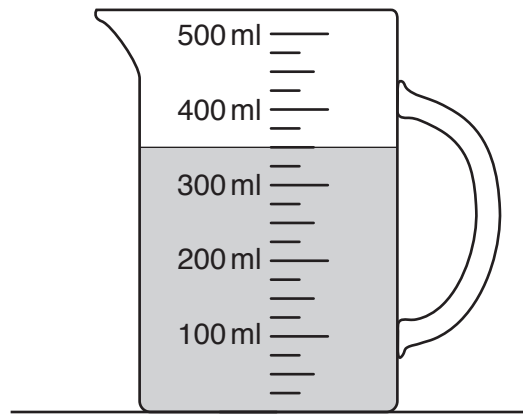
(a)(i) [1]

- (ii) Draw an arrow pointing to -1.5 on the number line. [1]

- (iii) What number is 0.8 less than -3.8 ?

(iii) [1]

- (b) Before breakfast, Aisha had an unopened 1 litre bottle of milk.
After breakfast, Aisha pours the remaining milk into this jug.



- (i) How much milk did Aisha use for breakfast?

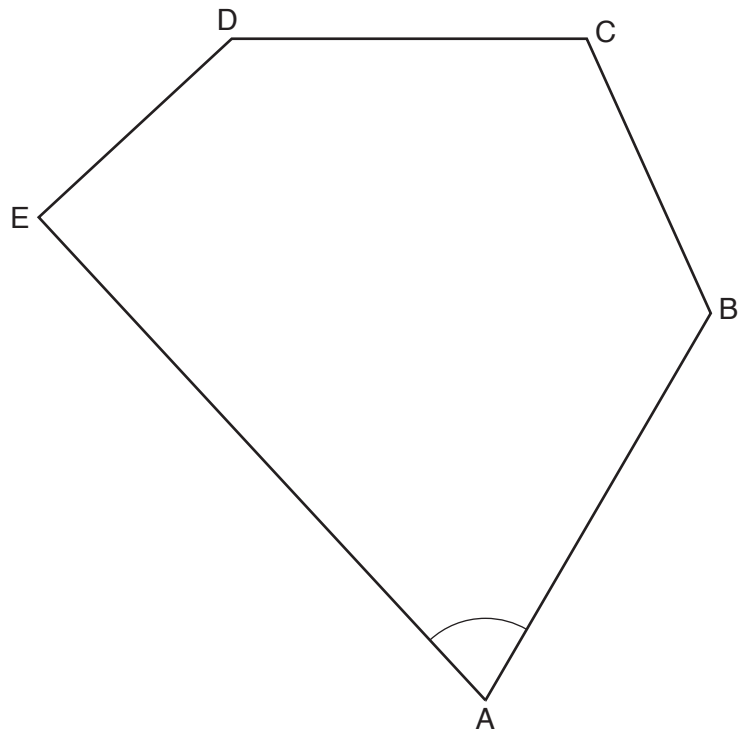
(b)(i) ml [2]

- (ii) With the milk that is in the jug, Aisha makes a cake that uses 100 ml of milk.
She also has some friends coming for coffee.
Aisha uses 30 ml of milk for each cup of coffee.

Find the greatest number of cups of coffee that she can make.

(ii) [4]

5 Here is a five-sided shape.



(a) Measure angle A in the shape.

(a)° [1]

(b) Measure the longest side of the shape.

(b) cm [1]

(c) Which angle in the shape is a right angle?

(c) Angle [1]

- 6 In January 2015 the length of a stalactite in a cave at Villars was 1.84 metres. The length of the stalactite increases by 2.3 millimetres each year.

What will its length be in January 2075?

..... m [4]

- 7 (a) Paul Brown likes to play a game of solitaire.
Here are the times, in minutes, that he took to complete 10 games.

8 14 16 9 8 21 23 15 5 11

Calculate the mean of these times.

(a) minutes [3]

- (b) Marika Brown also plays solitaire.
This stem and leaf diagram shows her times, in minutes, to complete 30 games.

0		2	3	4	4							
0		5	5	6	7	7	8	8	8	8	9	9
1		0	1	1	2	2	3	3	4	4		
1		5	5	6	8	9						
2		1										

Key: 1 | 2 represents 12 minutes

Find the median of her times.

(b) minutes [2]

8 (a) Simplify.

$$4f + 3g + 2f - 5g$$

(a) [2]

(b) (i) Find the value of $5y^2$ when $y = 4$.

(b)(i) [1]

(ii) Find the value of $3z + 5$ when $z = -2$.

(ii) [1]

(c) Solve this equation.

$$2x + 7 = 12$$

(c) [2]

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

2 10 50 250

- (i) Find the next two terms of this sequence.

(a)(i) and [2]

- (ii) Is 600 000 in this sequence?
Show some working to explain your answer.

..... because

..... [2]

- (b) Here are the first four terms of another sequence.

4 7 10 13

Find an expression for the n th term of this sequence.

(b) [2]

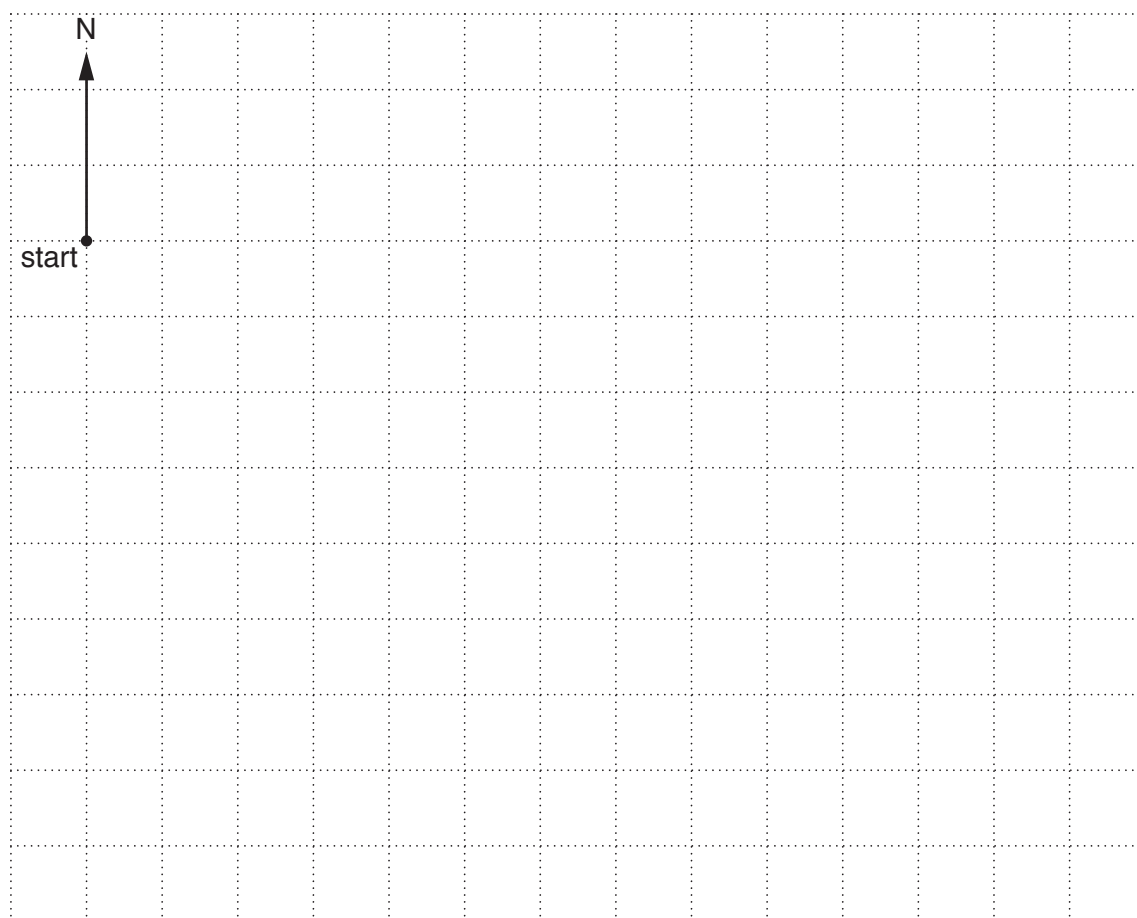
10 Haroon is orienteering in open, level countryside.

His instructions tell him:

- from the start, walk 300 m on a bearing of 150°
- then walk 180 m due east.

(a) On the grid, make a scale drawing of the path Haroon should walk.

Scale: 1 cm represents 50 m



[3]

(b) Find the bearing on which Haroon should then walk to get back to the start.

(b) $^\circ$ [2]

- 11 In 2014 the Winter Olympics were held in Russia.

This two-way table shows the medals won by the top three countries.

Country	Gold	Silver	Bronze	Total
Russian Federation	13			33
Norway	11		10	26
Canada	10	10	5	25
Total	34	26		

Complete the table.

[3]

- 12 (a)** Mary is knitting a cardigan for herself and one for her young sister Tasha.
The amounts of wool needed for Mary's cardigan and Tasha's cardigan are in the ratio 5 : 3.

- (i)** Mary needs 24 balls of wool in total for both cardigans.

How many balls of wool are needed for Tasha's cardigan?

(a)(i) balls [2]

- (ii)** Mary takes 6 weeks to knit Tasha's cardigan.
She knits for the same amount of time each week.

How many weeks should she expect to take to knit her own cardigan?

(ii) weeks [2]

- (b)** Anya takes 20 minutes to knit one row of her cardigan.
Sally takes 16 minutes to knit one row of her cardigan.
They both start knitting a new row at 1pm.
They carry on knitting.

What is the next time that they both start a new row together?

(b) [3]

TURN OVER FOR QUESTION 13

- 13 (a) Jenny works out this calculation.

$$6 \div 0.75$$

Rob works out this calculation.

$$6 \div 0.8$$

Whose calculation has the larger answer?

Explain how you can tell this **without doing the calculations**.

..... has the larger answer because

 [1]

- (b) Peter wrote this as part of his homework.

$$12 \times 0.8 = 21.6$$

Explain how you can tell that his answer is wrong **without doing the calculation**.

.....
 [1]

END OF QUESTION PAPER

Copyright Information

OCR is committed to seeking permission to reproduce all third-party content that it uses in its assessment materials. OCR has attempted to identify and contact all copyright holders whose work is used in this paper. To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced in the OCR Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download from our public website (www.ocr.org.uk) after the live examination series.

If OCR has unwittingly failed to correctly acknowledge or clear any third-party content in this assessment material, OCR will be happy to correct its mistake at the earliest possible opportunity.

For queries or further information please contact the Copyright Team, First Floor, 9 Hills Road, Cambridge CB2 1GE.

OCR is part of the Cambridge Assessment Group; Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.