

THIS IS A NEW SPECIFICATION

**F**

Monday 11 June 2012 – Afternoon

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	
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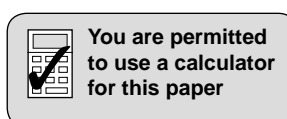
Centre number						Candidate number				
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INSTRUCTIONS TO CANDIDATES

- 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.

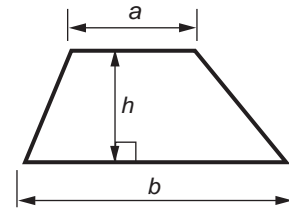


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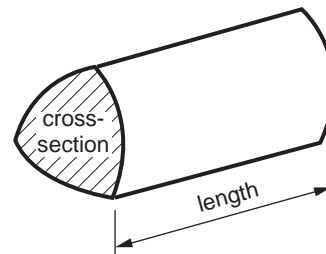
2

Formulae Sheet: Foundation Tier

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



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



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3

1 Here is a list of numbers.

8	34	36	24	80	23
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Choose from the list above

(a) a multiple of 10,

(a) _____ [1]

(b) two numbers which add to 60,

(b) _____ and _____ [1]

(c) a factor of 48,

(c) _____ [1]

(d) a square number,

(d) _____ [1]

(e) a prime number.

(e) _____ [1]

4

- 2 A department store sells goods in its city store and online.
One day it sold goods worth £532 417 in its city store.
The same day it sold goods worth £47 872 online.

(a) How much more was spent on goods in the city store than online?

(a) £ _____ [2]

(b) Write 47 872 in words.

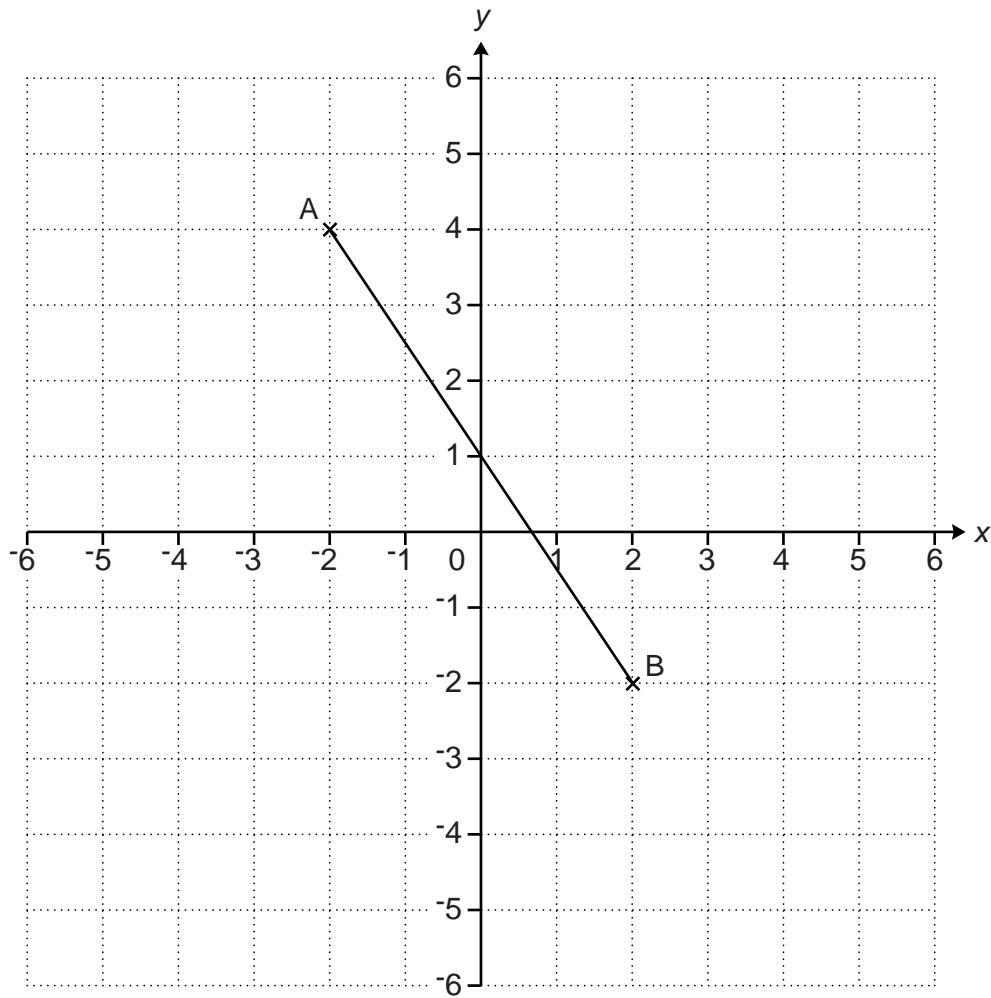
_____ [1]

(c) Round £47 872 to the nearest hundred pounds.

(c) £ _____ [1]

5

3 This grid shows the straight line, AB.



(a) Write down the coordinates of point A.

(a) (_____ , _____) [1]

(b) Write down the coordinates of the midpoint of AB.

(b) (_____ , _____) [1]

(c) (i) Plot the point with coordinates (3, 5).
Label it C.

[1]

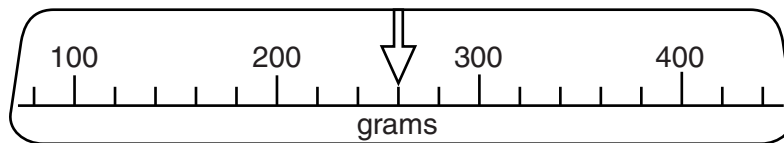
(ii) Plot the point with coordinates (-4, -1).
Label it D.

[1]

6

4 Jacinda is baking a cake.

(a) (i) She uses this amount of flour.



How much flour does she use?

(a)(i) _____ g [1]

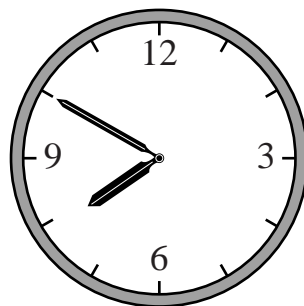
(ii) She takes the flour from a full 1.5 kg bag of flour.

How much flour is left in the bag?
Give the units of your answer.

(ii) _____ [2]

(b) The cake takes $1\frac{1}{4}$ hours to bake.

Jacinda starts baking the cake at this time.



At what time will the cake be baked?

(b) _____ [2]

7

5 Sue weighed the school bags belonging to eight of her friends.

Here are her results, in kilograms.

2.67 3.12 1.51 2.17 0.83 0.92 1.18 2.96

(a) Work out the range of these weights.

(a) _____ kg [1]

(b) Work out the mean of these weights.

(b) _____ kg [3]

6 (a) Simplify.

$$5a - 2a + 3a$$

(a) _____ [1]

(b) Find the value of $3c^2 + 2c$ when $c = -5$.

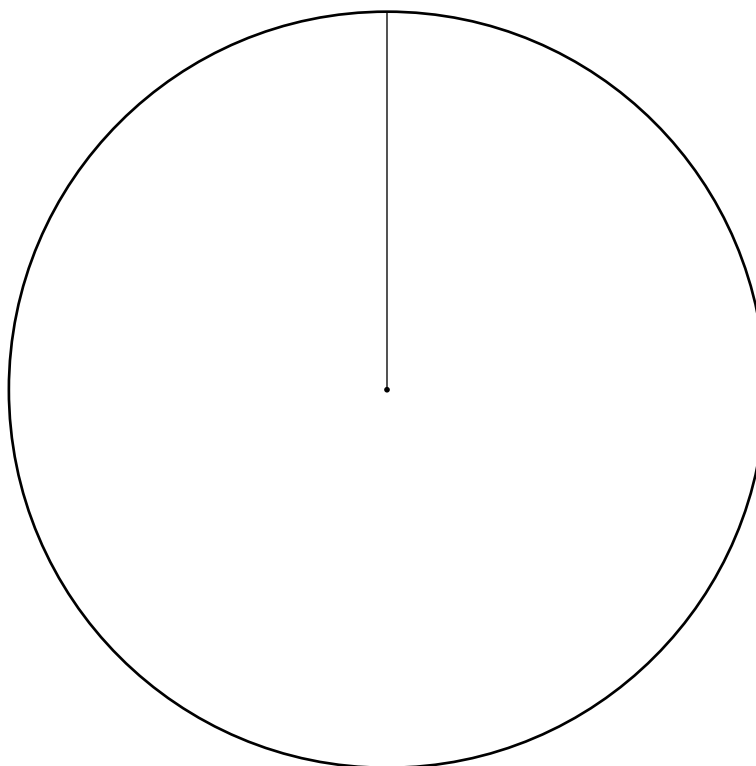
(b) _____ [2]

8

7 This table shows information about how the total Council Tax money collected in Guildford is spent.

Organisation	Angle for pie chart
Surrey County Council	270°
Surrey Police Authority	47°
Guildford Borough Council	36°
Parish Councils	7°

(a) Draw and label a pie chart to represent this information.



[3]

(b) The total Council Tax money collected is ten times Guildford Borough Council's share. One year, Guildford Borough Council's share was £7.91 million.

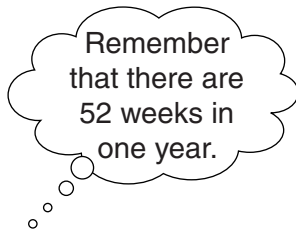
How much was the total Council Tax money collected in that year?

(b) £ _____ million [1]

9

- 8 Vivek uses his washing machine 6 times **every week**.
Each wash takes 1 hour 3 minutes.

For how many hours and minutes altogether is his washing machine in use during one **year**?

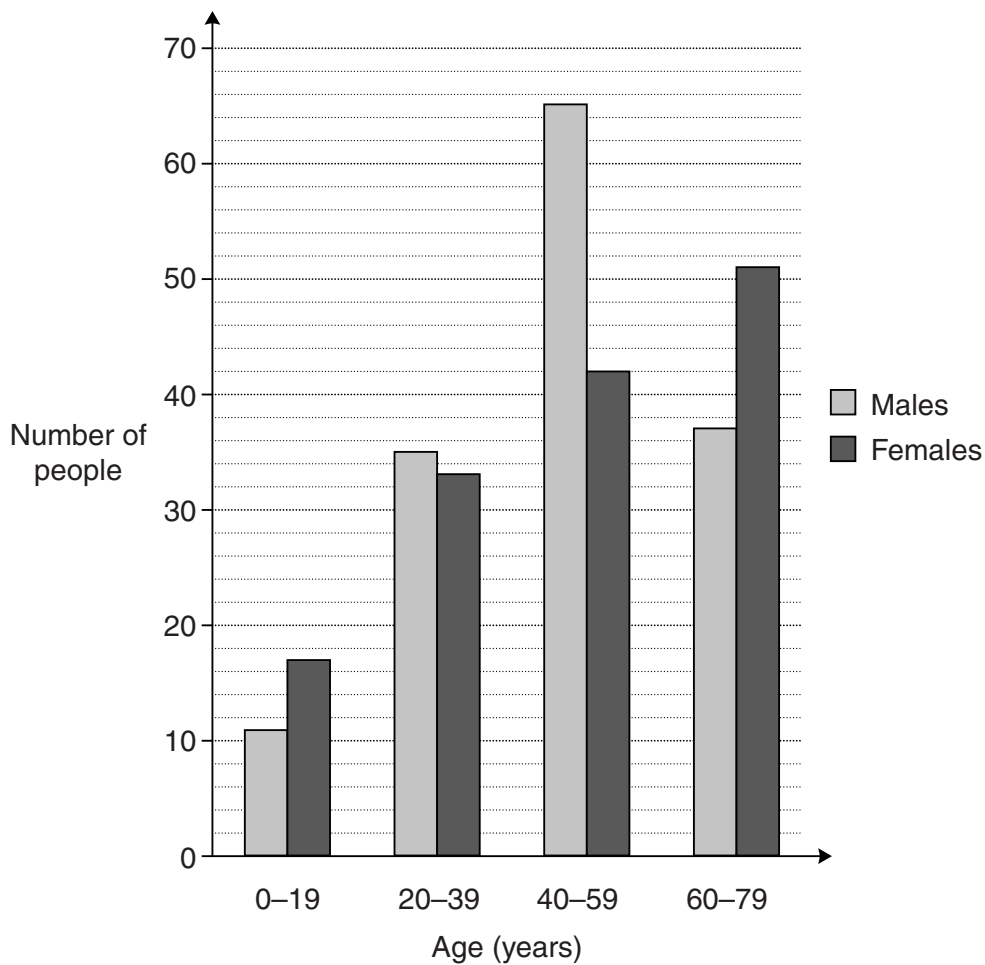


_____ hours _____ minutes [4]

10

9 Patrice flew from Amsterdam to Singapore.

(a) This bar chart shows information about the age and gender of people on the flight.



(i) How many females aged 40–59 were on the flight?

(a)(i) _____ [1]

(ii) Of the people aged 60–79 on the flight, how many **more** females than males were there?

(ii) _____ [2]

11

(iii) Altogether, how many people aged 0–19 were on the flight?

(iii) _____ [2]

(b) At one time during the flight, the temperature outside the aircraft was -28°C .
When the aircraft landed in Singapore, the temperature outside was 30°C .

What is the difference in temperature between -28°C and 30°C ?

(b) _____ $^{\circ}\text{C}$ [1]

(c) The aircraft was flying at a height of 27 000 feet.

Approximately how many metres is 27 000 feet?

(c) _____ m [2]

(d) The journey from Amsterdam to Singapore took 12 hours.
The aircraft travelled 544 miles each hour.

How many miles did the aircraft travel in this time?

(d) _____ miles [2]

12

- 10 (a) For one day's hire, *Carol's Coaches* charges 30p for each mile travelled, plus £120.

Write a formula for the charge, £ C , for one day's hire from *Carol's Coaches* when n miles are travelled.

(a) _____ [2]

- (b) (i) This is the formula for the charge, £ B , for one day's hire from *Ben's Buses* when n miles are travelled.

$$B = 0.4n + 80$$

Ben's Buses charged an athletics club £110 for one day's hire.

How many miles did the bus travel that day?

(b)(i) _____ miles [3]

- (ii) *Ben's Buses* asks the athletics club to complete a customer satisfaction survey. Here is one question in the survey.

Don't you think that your bus hire was good value for money?

Make one criticism of the question and write an improved version of the question.

Criticism: _____

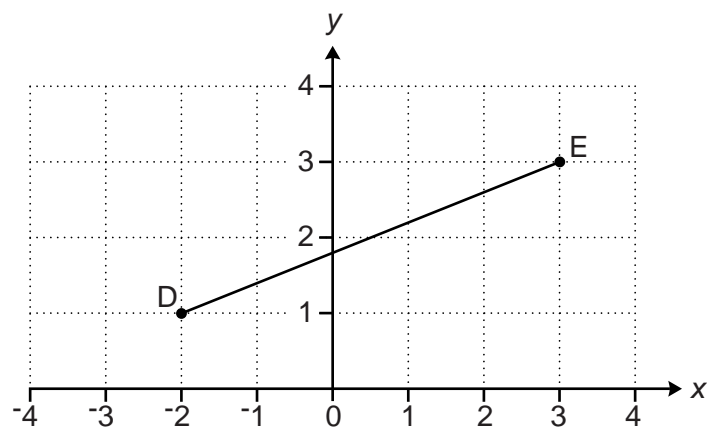
_____ [1]

Improved version: _____

_____ [1]

13

11 This is a grid of centimetre squares.



Calculate the length DE, giving your answer correct to 2 decimal places.

_____ cm [5]

14

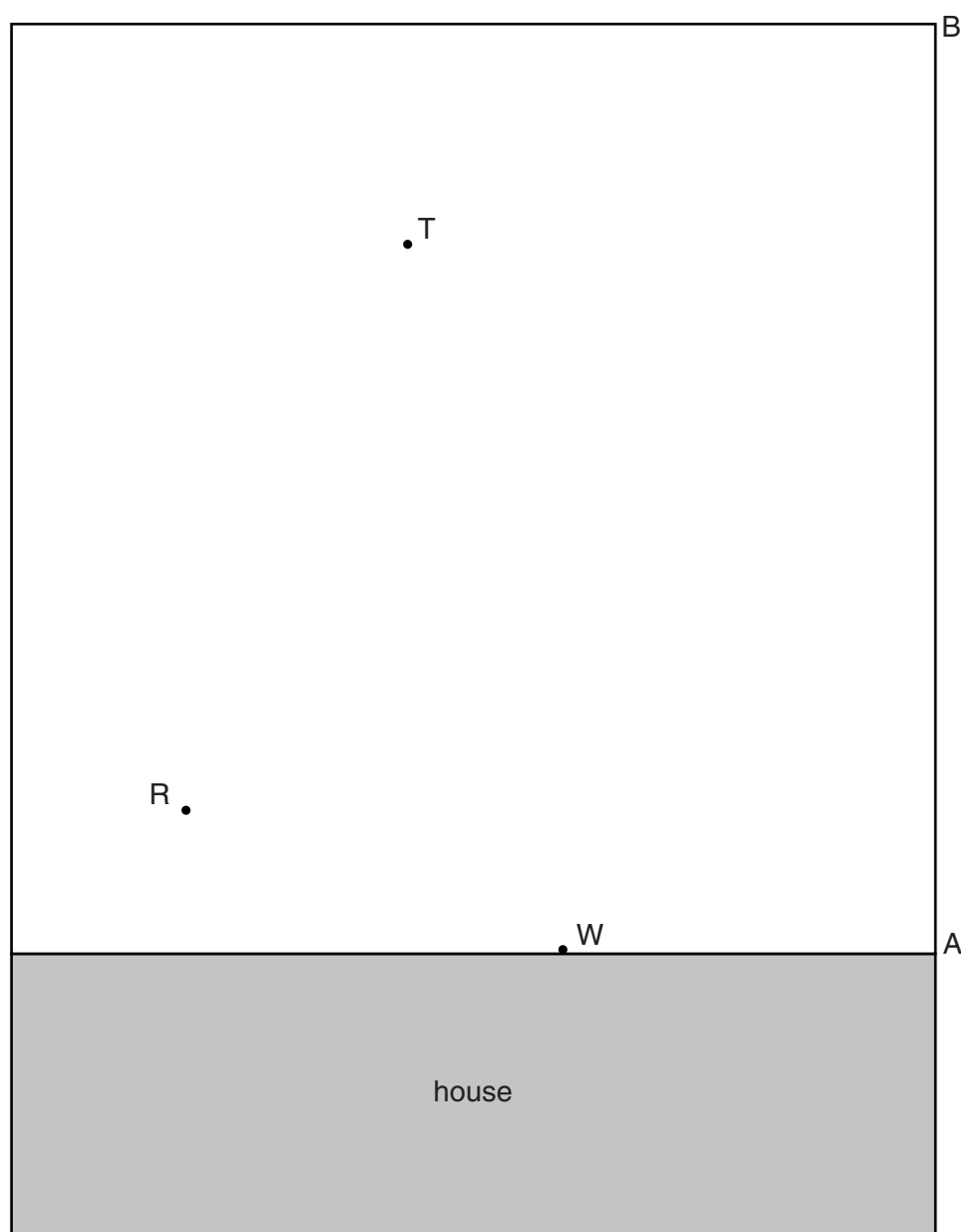
- 12 *In this question, use a ruler and a pair of compasses.
Leave in all your construction lines.*

The scale drawing shows Steve's garden and part of his house.
Steve decides to put a pond in his garden.
He wants it to be

- at least 1.5 m from the rotary clothes dryer R
- at least 1.5 m from the hedge AB
- nearer to the watertap W than to the tree T.

Construct and shade the region where the pond can go.

Scale: 2 cm represents 1 metre.



[5]

15
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