OCR
Oxford Cambridge and RSA

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Thursday 21 May 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.
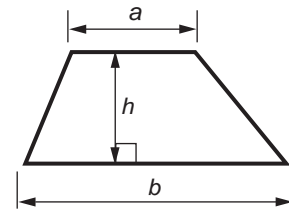
INFORMATION FOR CANDIDATES

*   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 **12** pages. Any blank pages are indicated.

> **You are permitted to use a calculator for this paper**

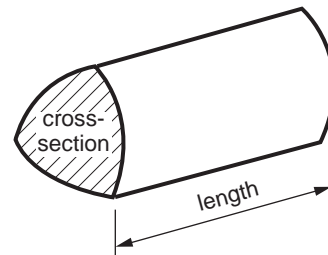OCR is an exempt Charity

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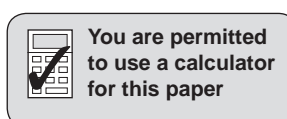
2

Formulae Sheet: Foundation Tier

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

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

PLEASE DO NOT WRITE ON THIS PAGE

1   From the numbers 30 to 39, choose

   (a) a multiple of 5,

(a) .... **[1]**

   (b) a square number,

(b) .... **[1]**

   (c) a prime number.

(c) .... **[1]**

2   Choose from these units to complete the following statements.

mm	g	litres	km
cm³	m	kg	

A small bird weighs 9 ....

The length of a desk is 900 ....

When full, a bucket holds 20 ....

The length of a cross-country running race is 6 ....   **[4]**

4

3 Here is a coordinate grid.
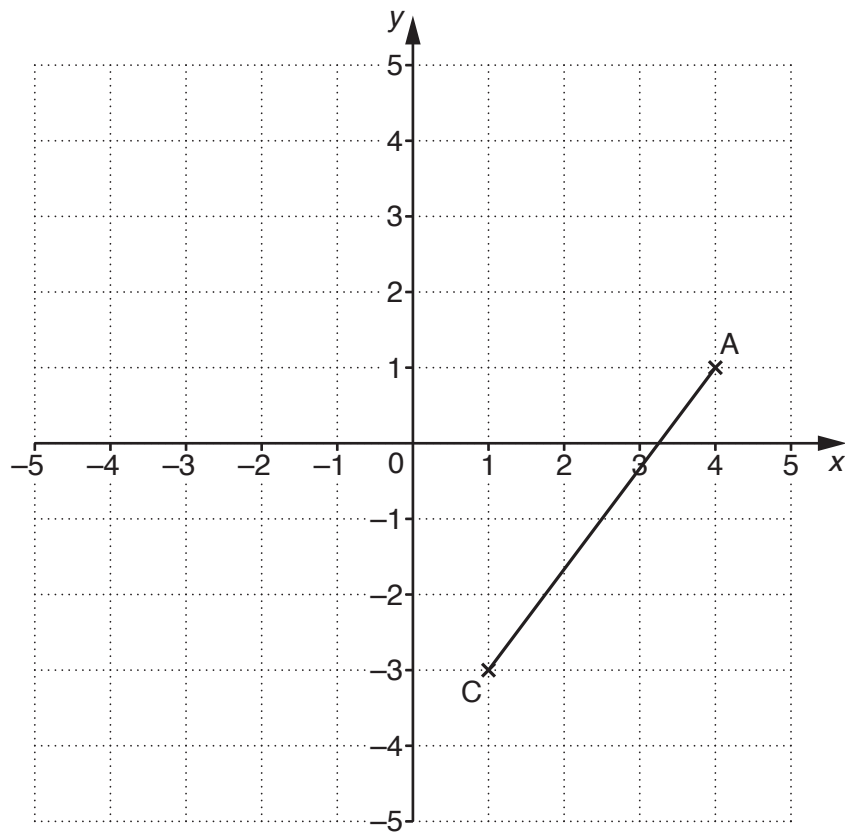
(a) Write down the coordinates of point A.

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

(b) Plot the point (−3, −4). Label it B. **[1]**

(c) Find the coordinates of the midpoint of AC.

(c) (........................... , ...) **[2]**

4   This bar chart shows the amounts that Paul and Sumita spent on their holidays.
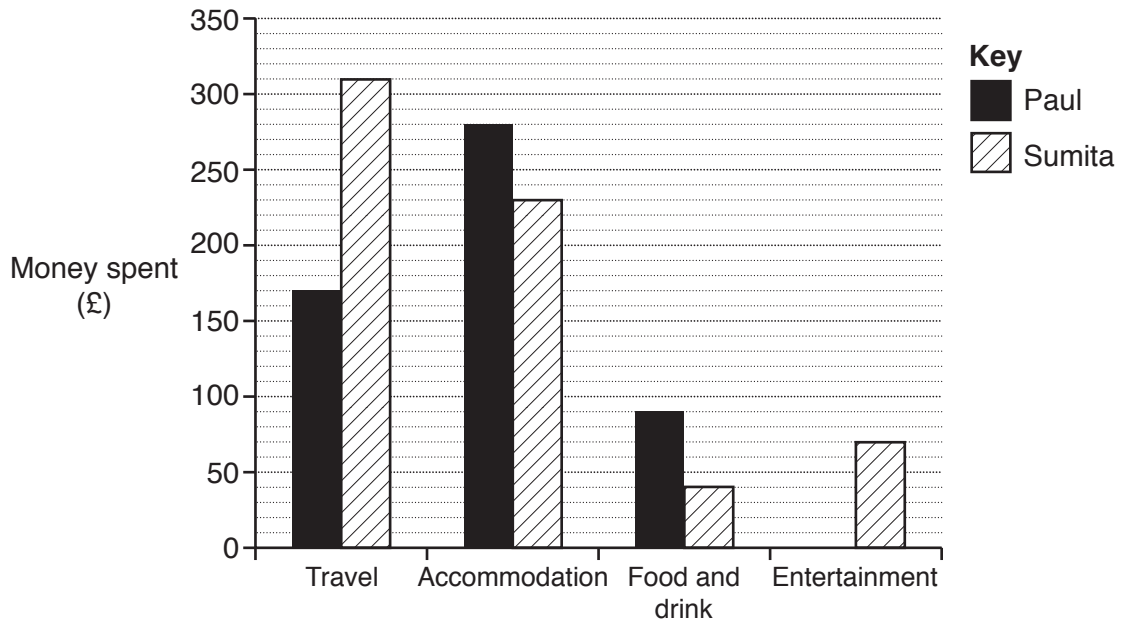
(a) Paul spent £120 on entertainment.

Complete the bar chart to show this information.   **[1]**

(b) How much did Sumita spend on travel?

                                                (b) £ .... **[1]**

(c) Whose holiday cost more altogether, and by how much?

.... holiday cost more, by £ .... **[3]**

5 **(a)** Work out.

    (i) $8 \div 100$

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

    (ii) $\dfrac{8+9}{-2}$

                          (ii) .... **[1]**

    (iii) $4 + 8 \times 3$

                          (iii) .... **[1]**

(b) A number is multiplied by 8.
The answer is positive and less than 8.

Find a possible number and complete the calculation.

                          (b) $8 \times$ .... = ... **[2]**

6 Dale asked each of 10 students from class 11M how many items they had downloaded the previous day.
Here are their responses.

5	0	4	12	17	22	0	15	7	20

(a) Find the mode.

(a) .... **[1]**

(b) Find the median.

(b) .... **[2]**

(c) Dale also asked each of 10 students from class 11Y how many items they had downloaded the previous day.
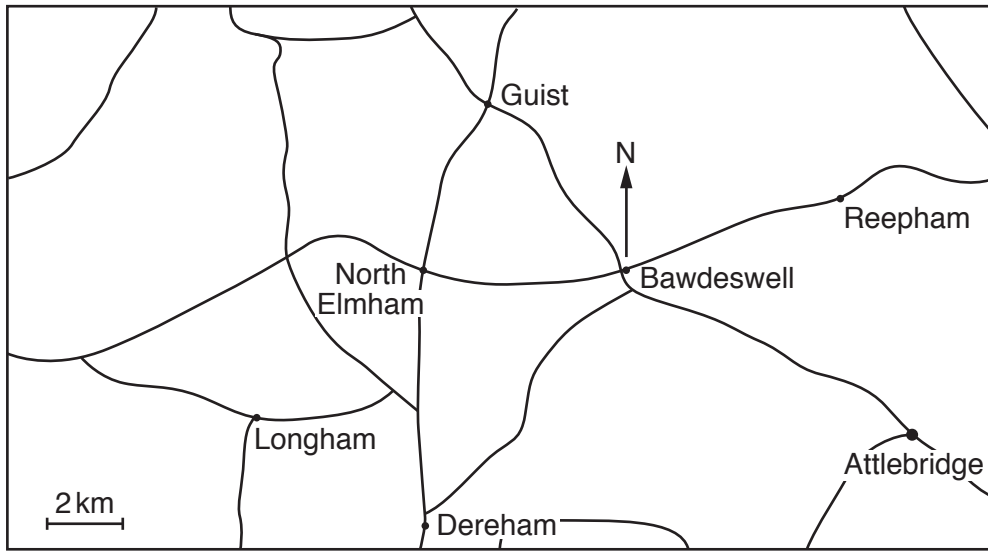The range of their responses was 21 and the mean of their responses was 14.

Calculate the appropriate values for class **11M** so that you can complete the following statements.

(i) Class 11.......... downloaded more items on average because ....

.... **[4]**

(ii) Class 11.......... had a greater spread of items downloaded because ....

.... **[2]**

7 This map shows some places in Norfolk.

Scale: 1 cm represents 2 km

(a) What is the compass direction of Guist from Bawdeswell?

(a) .... **[1]**

(b) A bird flies direct from Bawdeswell to Longham.

(i) Draw a line on the map for this journey and measure it.
Calculate the actual distance the bird flies.

(b)(i) ....km **[2]**

(ii) Find the bearing of Longham from Bawdeswell.

(ii) ....° **[1]**

(c) Reepham is 24 km from Norwich.

About how many miles is 24 km? Ring the correct answer.

40   15   24   120   8   **[1]**

8 A shop has these prices for bird food.

- 1 kg bag of nuts £5.30

- 500 g bag of seeds £2.25

- Bag of 6 suet spheres £1.90

(a) Pavel wants to buy

- 3 kg of nuts

- 24 suet spheres.

Show that buying these is not enough to get the special offer. **[3]**

(b) Show that if Pavel also buys 1 kg of seeds and one more bag, from the three types of bird food available, it is possible for him to get the special offer.

Find how much he will spend when he does this. **[4]**

9 **(a)** Simplify as much as possible.

$$4a + 5a$$

(a) .... **[1]**

(b) Write an expression for the total cost in pence of two doughnuts at d pence each and three teacakes at t pence each.

(b) .... p **[1]**

(c) Solve these equations.

(i) $y - 7 = 4$

(c)(i) .... **[1]**

(ii) $2(3x - 1) = 10x - 5$

(ii) .... **[4]**

10 Samira and Joanne share their living costs in the ratio 3 : 2.

   (a) The rent for their flat for a month is £700.

   Work out how much of this rent they each pay.

   (a) Samira £ ....

   Joanne £ .... **[3]**

   (b) For one gas bill, Joanne pays £84 for her share.

   How much was the whole gas bill?

   (b) £ .... **[3]**

12

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

This scale drawing shows Colin's garden.
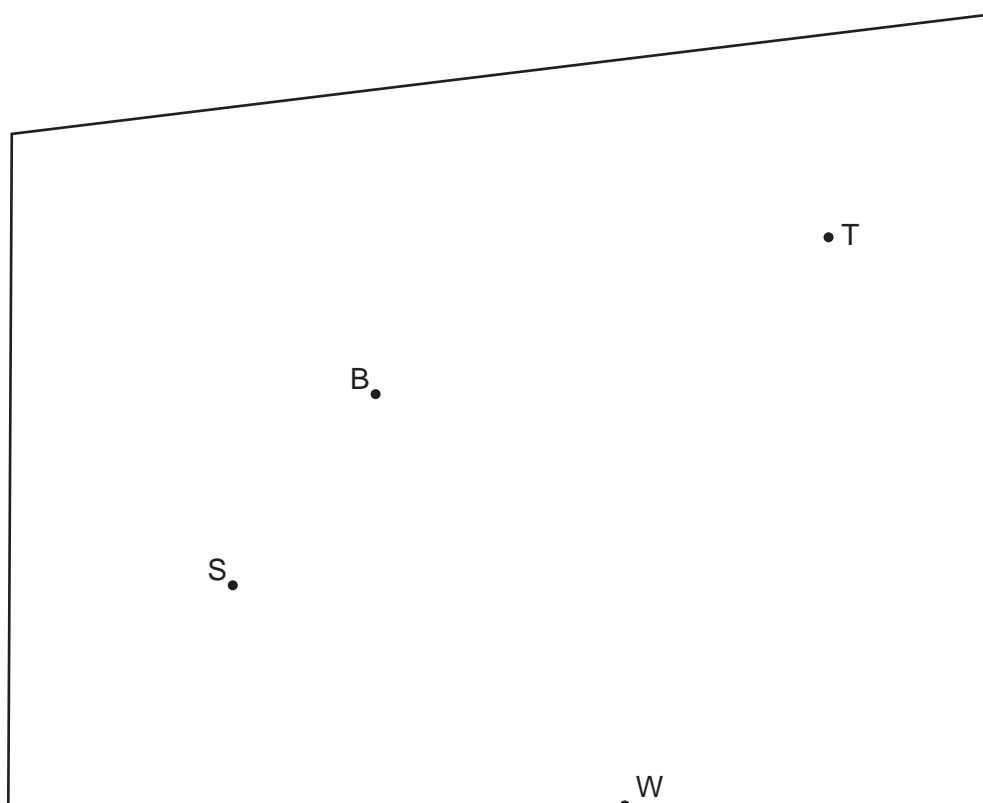
Scale: 2 cm represents 1 m

Colin wants to put a bird feeder in his garden.
He wants it to be

* up to 3 m from the tree T
* up to 2 m from the bush B
* nearer to the water tap W than to the seat S.

Construct the region where Colin can put the bird feeder.
Label the region R. **[5]**

END OF QUESTION PAPER