Version 1.0

Centre Number					Candidate Number					
Surname										
Other Names										
Candidate Signature										

Mathematics 43602F

Unit 2 Foundation Tier

Specimen Paper 2012 Specification

F

For this paper you must have:
- mathematical instruments.

You must **not** use a calculator

Time allowed
- 1 hour 15 minutes

Instructions
- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the space provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work that you do not want to be marked.

Information
- The marks for questions are shown in brackets.
- The maximum mark for this paper is 66.
- The quality of your written communication is specifically assessed in questions 4, 6, 14 and 15.
  These questions are indicated with an asterisk (∗)
- You may ask for more answer paper and graph paper.
  These must be tagged securely to this answer booklet.

Advice
- In all calculations, show clearly how you work out your answer.

43602F

Answer **all** questions in the spaces provided.

1   The table shows the size of population for five Derbyshire villages.

Village	Population
Ashover	1796
Bamford	1184
Clowne	7447
Darley Dale	5167
Eckington	16 684

1 (a)   Write the population of Darley Dale in words.

Answer ....

.... *(1 mark)*

1 (b)   Write the population of Clowne correct to the nearest 100.

Answer .... *(1 mark)*

1 (c)   Write the population of Eckington to the nearest 1000.

Answer .... *(1 mark)*

1 (d)   How many more people live in Eckington than Bamford?

....

.... *(2 marks)*

2 (a) From this list of numbers

65   5   25   70   75   34

2 (a) (i) Write down a multiple of 10.

Answer .... *(1 mark)*

2 (a) (ii) Write down a factor of 35.

Answer .... *(1 mark)*

2 (a) (iii) Write down a square number.

Answer .... *(1 mark)*

2 (a) (iv) Write down three-quarters as a percentage.

Answer .... % *(1 mark)*

2 (b) Work out $70 \div (65 - 5 - 25) \times 75$

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Answer .... *(2 marks)*

3 In a school there are 800 students and 70 teachers.
10% of the students are left handed.
20% of the teachers are left handed.

How many left-handed students and teachers are there altogether?

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....

Answer .... *(3 marks)*

14

Turn over ▶

✳4 Shamina buys three apples that cost 40p each and four bananas that cost 25p each.
She pays with a £10 note.

How much change should Shamina get?

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....

Answer £ .... *(3 marks)*

5 (a) Solve $a - 2 = 9$

....

Answer $a =$ .... *(1 mark)*

5 (b) Solve $\dfrac{b}{3} = 5$

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Answer $b =$ .... *(1 mark)*

5 (c) Solve $2c - 3 = 11$

....

....

....

Answer $c =$ .... *(2 marks)*

✱**6** Here is part of a price list for a fruit and vegetable stall.

Price List

Fruit

Apples	30p each
Bananas	25p each
Oranges	20p each

Vegetables

Broccoli	75p per 100g
Carrots	20p per 100g
Cauliflower	£1 per 100g

The Government says we should eat 5 portions of fruit and vegetables every day.
A portion is an item of fruit or 100g of vegetables.

Dita has £10 to spend on fruit and vegetables for one week.
She wants to buy at least two different fruits and two different vegetables.

Show **one** way of buying fruit and vegetables so that she has 5-a-day for one week.

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(5 marks)

12

Turn over ▶

7   Here are instructions for cooking a turkey.

> Cook for 15 minutes at 220 °C
>
> Reduce the oven temperature to 160 °C
> and cook for 40 minutes per kilogram.

Kirsty is going to cook a 7 kilogram turkey.
She wants to take it out of the oven at 12.45 pm.

At what time must she start to cook it?

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Answer .... *(4 marks)*

8   Tom is 60.

His daughter Fiona is $\dfrac{3}{5}$ of his age.

His grandson James is $\dfrac{4}{15}$ of his age.

How many years older than James is Fiona?

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Answer .... *(4 marks)*

9 (a) The rule for the next term of a sequence is

Multiply the previous term by three and subtract one.

The first two terms of the sequence are 2 and 5.

Write down the next **two** terms.

...................................…………........…...

...................................………….....……....…...

Answer   2   5   ....   *(2 marks)*

9 (b) The nth term of a different sequence is $5n$.

The first term is 5

Write down the next **three** terms.

Answer   5   ....*(1 mark)*

9 (c) Work out the nth term of this sequence.

7   10   13   16   19

...................................…………......……....…...

Answer .... *(2 marks)*

Turn over for the next question

13

Turn over ▶

10(a) Work out the value of $\sqrt{25} \times \sqrt[3]{64}$

....

....

Answer .... *(2 marks)*

10 (b) (i) Write down the value of 9^2.

Answer .... *(1 mark)*

10 (b) (ii) Tick the box for the statement that is true.

The sum of the squares of two odd numbers is always odd ☐

The sum of the squares of two odd numbers is always even ☐

The sum of the squares of two odd numbers could be odd or even ☐

Give an example to justify your choice.

....

....

(2 marks)

11 Work out the value of $\dfrac{1}{4} + \dfrac{2}{3}$

....

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Answer .... *(2 marks)*

12 Estimate the value of $\dfrac{\sqrt{99}}{19}$

....

....

Answer .... *(2 marks)*

13 In the magic square, the rows, columns and diagonals add to the same number.

10	w	x
5	y	9
6	11	4

Work out the values of w, x and y.

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....

Answer w = ... x = ... y = ... *(3 marks)*

✳**14** The rate of VAT was reduced in December 2008 from $17\frac{1}{2}$% to 15%.

For sale

Lawnmower £140 + VAT

Work out the difference in price of a lawnmower due to the reduction in VAT.

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Answer £ .... *(3 marks)*

15

Turn over ▶

✳15 Barbara uses her car to work as a volunteer driver at her local hospital.
She is paid 40p for every mile she drives.
On average she drives 2000 miles each month.

Here is some information about the running costs of Barbara's car.

Fuel Consumption	50 miles per gallon
Other running costs	10 pence per mile

15 (a) Petrol costs £5 per gallon

Calculate Barbara's annual fuel bill.

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Answer £ .... *(2 marks)*

15 (b) After paying for fuel and other running costs, Barbara saves the money left over.
Barbara is planning to use this money for a holiday that will cost £3000.
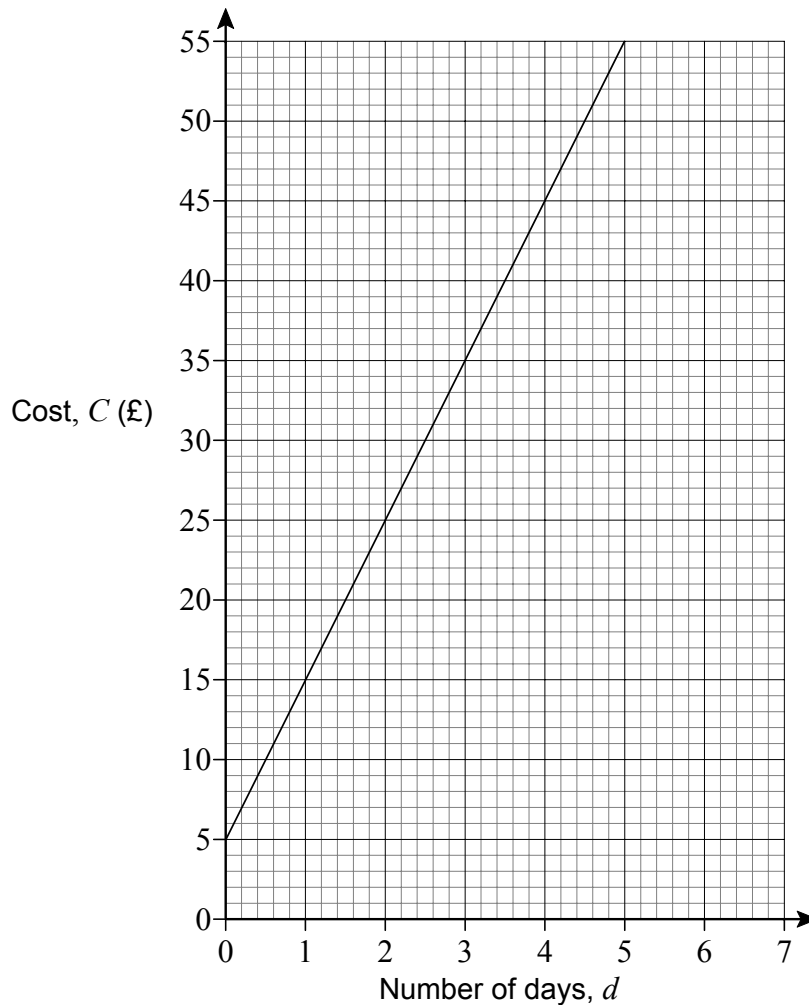
Will Barbara have enough money after saving for one year?

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(4 marks)

16 An activity centre hires out road bikes and mountain bikes.

The graph shows the cost, C (£) of hiring a road bike for a number of days, d.

Cost, C (£)

Number of days, d

16 (a) Circle the correct formula connecting the cost, C and the number of days, d for hiring a road bike.

$C = 2d + 5$ $\qquad$ $C = 5d + 10$ $\qquad$ $C = 10d + 5$

....

.... *(1 mark)*

16 (b) The cost of hiring a mountain bike is given by the formula $C = 5d + 15$

Rowan would like to hire a mountain bike.

He thinks that a mountain bike will always cost more to hire than a road bike.

Is this true? Yes ☐ No ☐

Explain your answer.

....

.... *(3 marks)*

10

Turn over ▶

17   Mohsin invests some money in a cash ISA (c) and in a savings account (s).

The ratio of the amounts of money invested is   c : s = 3 : 7

He invests £3600 in the cash ISA.

How much money does he invest altogether?

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....

....

Answer £ .... *(2 marks)*

END OF QUESTIONS

2

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