Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										

For Examiner's Use	
Examiner's Initials	
Pages	Mark
2 – 3	
4 – 5	
6 – 7	
8 – 9	
10 – 11	
12 – 13	
14 – 15	
TOTAL	

General Certificate of Secondary Education
Foundation Tier
March 2013

Mathematics 43602F

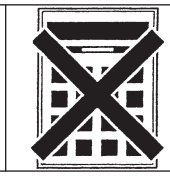
Unit 2

Monday 4 March 2013 9.00 am to 10.15 am

F

For this paper you must have:
- mathematical instruments.

You must **not** use a calculator.



Time allowed
- 1 hour 15 minutes

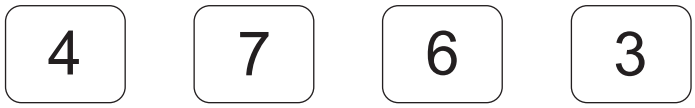
Instructions
- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book.

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 3, 16 and 17. 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 book.

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

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

1 These cards show the number 4763.



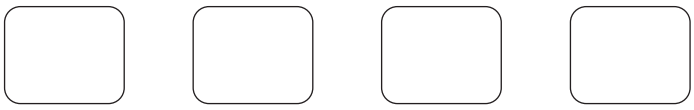
1 (a) Write the number 4763 in words.

.....

.....

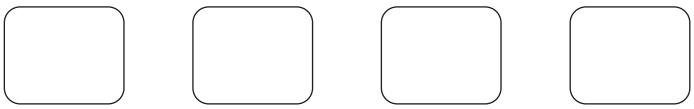
(1 mark)

1 (b) What is the smallest number you can make using **all** four cards?



(1 mark)

1 (c) What is the largest **even** number you can make using **all** four cards?



(2 marks)

1 (d) Write the number 4763 to the nearest 1000.

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

2 A number is between 20 and 40.

It is an even number.
It is a multiple of 7.

What is the number?

.....

.....

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

***3** Megan buys

3 kg of potatoes at £1.50 per kilogram

and

2 kg of onions at £1.40 per kilogram.

She pays with a £10 note.

How much change should she receive?

.....

.....

.....

.....

Answer £ ..... *(4 marks)*

11

4 Estimate the value of $98.7 \div 5$

.....

.....

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

5 (a) Three of these fractions are equivalent.

Circle the odd one out.

$\frac{2}{8}$ $\frac{3}{12}$ $\frac{4}{10}$ $\frac{5}{20}$

(1 mark)

5 (b) Write $\frac{3}{4}$ as a percentage.

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

5 (c) Write 0.3 as a percentage.

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

6 The temperature was recorded at the same time each day.

Day	Mon	Tue	Wed	Thu	Fri	Sat
Temperature (°C)	2	0	1	–3	–1	–2

6 (a) Which temperature was the coldest?

Answer ..... °C *(1 mark)*

6 (b) How much colder was it on Thursday than on Wednesday?

.....

Answer ..... °C *(1 mark)*

6 (c) On Sunday, the temperature was 3°C lower than on Saturday.

What was the temperature on Sunday?

.....

Answer ..... °C *(1 mark)*

Turn over for the next question

8

7 A school took £832 selling tickets.

Each ticket was sold for £4.

How many tickets were sold?

.....

.....

.....

.....

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

8 Work out the value of $5x - 2y$ when $x = 3$ and $y = 4$

.....

.....

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

9 Circle the **three** values that are greater than $\frac{1}{2}$

0.32 65% $\frac{1}{4}$ 0.76 $\frac{2}{3}$ 40%

(3 marks)

10 Tick the correct box in each row.

	Always odd	**Always even**	**Can be odd or even**
Square numbers	☐	☐	☐
Multiples of 12	☐	☐	☐
Prime numbers greater than 10	☐	☐	☐

(3 marks)

Turn over for the next question

10

11 The shaded L-shape is called L_2 because the top number is 2.

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25

The sum of the numbers in L_2 is 34.

11 (a) Work out the sum of the numbers in L_9

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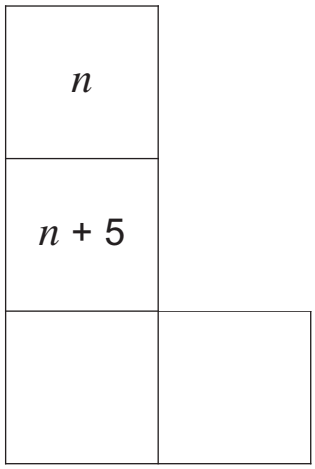
.....

.....

.....

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

11 (b) Complete the boxes for L_n



(2 marks)

11 (c) Work out, in terms of n, the sum of L_n
Give your answer in its simplest form.

.....

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.....

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

Turn over for the next question

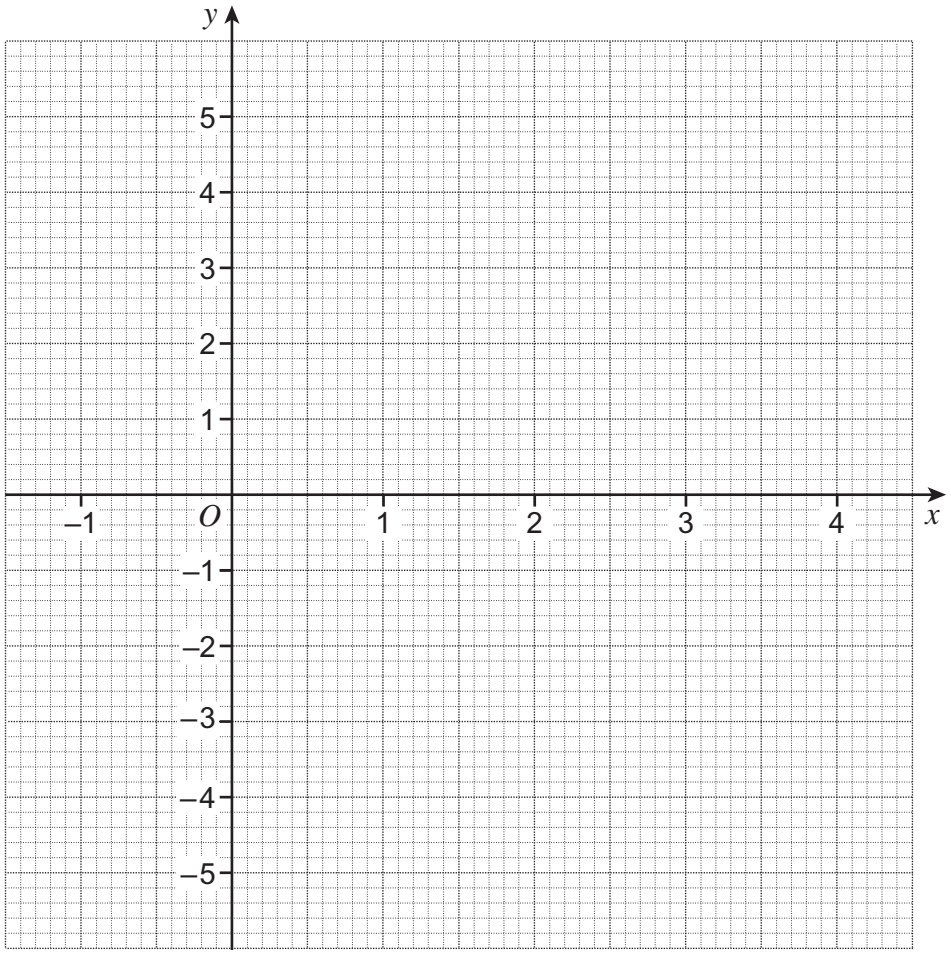
6

12 (a) Complete the table of values for $y = 2x - 3$

x	–1	0	1	2	3	4
y		–3		1		5

(2 marks)

12 (b) On the grid draw the graph of $y = 2x - 3$ for values of x from –1 to 4.



(2 marks)

13 (a) Write down the value of 5^3

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

13 (b) Write down the value of $\sqrt{121}$

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

13 (c) Between which **two** consecutive whole numbers does $\sqrt{40}$ lie?

.....

.....

Answer ..... and ..... *(2 marks)*

14 The terms in this sequence increase by the same amount each time.

..... 12 27

Work out the first term.

.....

.....

.....

.....

Answer ..... *(3 marks)*

11

Turn over ▶

15 The table shows the charge for taking a suitcase on a plane.

Weight of suitcase	Charge
Under 15 kg	Free
15 kg – 22 kg	£20
Over 22 kg	£20 plus £5 for each extra kilogram or part of a kilogram over 22 kg

15 (a) Work out the charge for a suitcase that weighs 24 kg.

.....

Answer £ ..... *(2 marks)*

15 (b) Work out the charge for a suitcase that weighs 24.3 kg.

Answer £ ..... *(1 mark)*

15 (c) Jack has two suitcases.
He pays a total charge of £70.
One suitcase weighs 21 kg.

What is the **most** the other suitcase could weigh?

.....

.....

.....

Answer ..... kg *(3 marks)*

***16** Here are two adverts for biscuits.

Super Snacks	**Cookie Club**
£3.40 per box	£3.09 per box
OFFER 40% off	OFFER $\frac{1}{3}$ off

Which is cheaper, Super Snacks or Cookie Club?
You **must** show your working.

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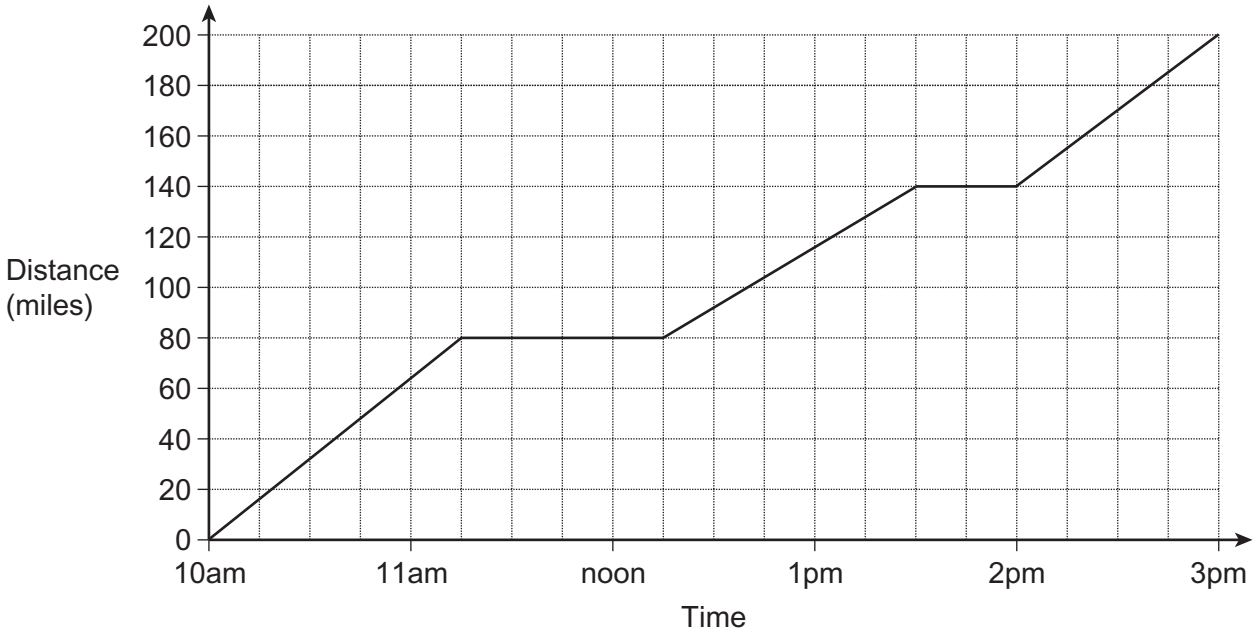
Answer ..... *(5 marks)*

Turn over for the next question

11

***17** The distance-time graph represents a journey Alf makes.



Alf claims that he stopped for less than one-quarter of his total journey time.

Is he correct?
You **must** show your working.

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(3 marks)

18 (a) Simplify $a^{20} \times a^5$

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

18 (b) Simplify $\frac{a^{20}}{a^5}$

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

19 (a) Rearrange $f = 3g + 2$ to make g the subject.

.....

.....

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

19 (b) Multiply out $x^2(4 - x)$

.....

.....

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

END OF QUESTIONS

9

There are no questions printed on this page

DO NOT WRITE ON THIS PAGE
ANSWER IN THE SPACES PROVIDED