Surname

Other Names

Candidate Signature

AQA

General Certificate of Secondary Education
Foundation Tier
March 2013

Mathematics   43602F

Unit 2

F

Monday 4 March 2013   9.00 am to 10.15 am

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.

$$\boxed{4} \quad \boxed{7} \quad \boxed{6} \quad \boxed{3}$$

1 (a) Write the number 4763 in words.

....

....

(1 mark)

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

$$\boxed{} \quad \boxed{} \quad \boxed{} \quad \boxed{}$$

(1 mark)

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

$$\boxed{} \quad \boxed{} \quad \boxed{} \quad \boxed{}$$

(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?

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....

....

Answer £ ....   *(4 marks)*

4   Estimate the value of   98.7 ÷ 5

....

....

Answer ....   *(2 marks)*

5 (a)   Three of these fractions are equivalent.

Circle the odd one out.

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

(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

Turn over ▶

7 A school took £832 selling tickets.

Each ticket was sold for £4.

How many tickets were sold?

....

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....

Answer .... *(2 marks)*

8 Work out the value of $\quad 5x - 2y \quad$ 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

Turn over ▶

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

....

....

....

....

Answer .... *(2 marks)*

11 (b)   Complete the boxes for L$_n$

n
$n + 5$
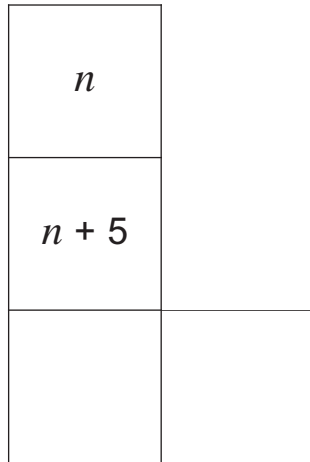
(2 marks)

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

....

....

....

Answer .... *(2 marks)*

Turn over for the next question

6

Turn over ▶

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.
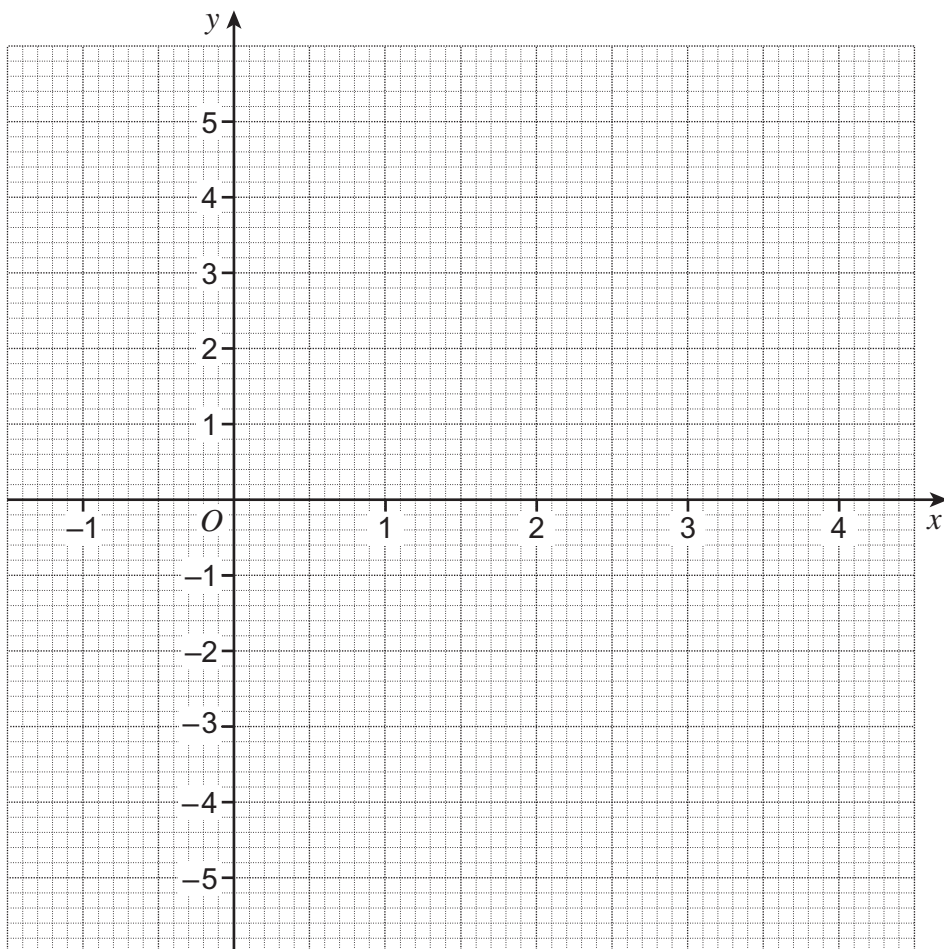
(2 marks)

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.

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....

Answer ....   *(3 marks)*

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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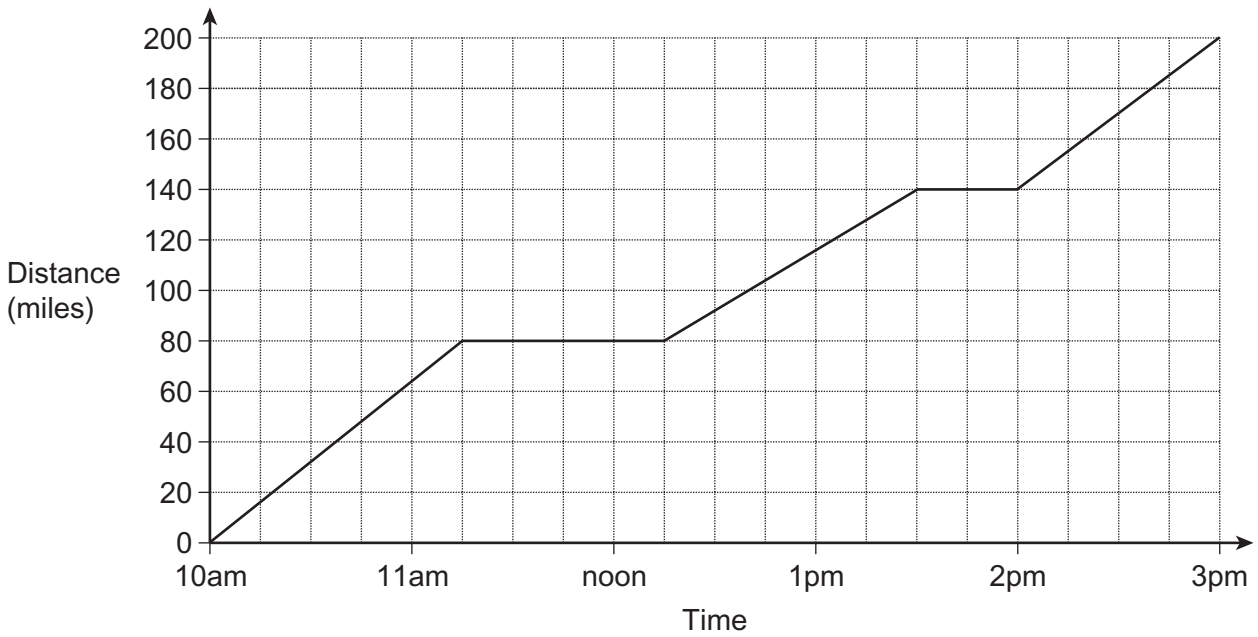Answer ....   *(5 marks)*

Turn over for the next question

*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 $\dfrac{a^{20}}{a^5}$

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

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ANSWER IN THE SPACES PROVIDED