Surname

Other Names

Candidate Signature

General Certificate of Secondary Education
Foundation Tier
June 2014

Mathematics　　　　　　　　　　**43602F**

Unit 2

F

Monday 9 June 2014　　9.00 am to 10.15 am

For Examiner's Use	
Examiner's Initials	
Pages	Mark
2 – 3	
4 – 5	
6 – 7	
8 – 9	
10 – 11	
12 – 13	
14 – 15	
16	
TOTAL	

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, 7 and 16. 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.

43602F

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

1   A bottle holds 1600ml of water.
300 ml cups are filled from the bottle.

1 (a)   How many cups can be filled from the bottle?

[2 marks]

....

....

Answer ....

1 (b)   How much water is left in the bottle?

[1 mark]

....

....

Answer .... ml

2 (a)   Write in figures the number   thirty thousand and sixteen

[1 mark]

Answer ....

2 (b)   Write in words the number   0.43

[1 mark]

Answer ....

2 (c)   Write down the **value** of the digit 9 in the number   41 982

[1 mark]

Answer ....

*3

CAKES

Large   80p each
Small   50p each

Work out the total cost of 3 large cakes and 10 small cakes.
Give your answer in pounds.

[3 marks]

....

....

....

Answer £ ....

4 (a)   Write down the **three** multiples of 30 between 100 and 200

[2 marks]

....

....

....

Answer .... , ... , ...

4 (b)   Circle the number in the list that is **not** a factor of 30

[1 mark]

2   3   5   6   8

12

Turn over ▶

5 (a) Circle the **two** numbers that add up to 100

[1 mark]

21   34   35   65   76

5 (b) Circle the **two** numbers that are even.

[1 mark]

21   34   35   65   76

5 (c) The number 31 is 5 less than the square number 36

Circle the number that is 5 **less** than a square number.

[1 mark]

21   34   35   65   76

5 (d) Circle the number that is 5 **more** than a square number.

[1 mark]

21   34   35   65   76

6 Here are the first three lines of a number pattern.

Line 1 $\quad 2 \times 2 - 2 \times 1^2 = 2$

Line 2 $\quad 4 \times 3 - 2 \times 2^2 = 4$

Line 3 $\quad 6 \times 4 - 2 \times 3^2 = 6$

6 (a) Write down Line 4 of the pattern.

[2 marks]

Line 4 .... = ...

6 (b) Which line of the pattern is this?

[1 mark]

Line .... $\quad 38 \times 20 - 2 \times 19^2 = 38$

6 (c) $\qquad$ Line n $\qquad 2n(n + 1) - 2n^2 = 2n$

Show how $\quad 2n(n + 1) - 2n^2 \quad$ simplifies to $\quad 2n$

[1 mark]

....

....

....

8

*7 Four friends **each** save £25 every month for one year.

They see this advert for a holiday.

HOLIDAY for 4 people

Usually £2600

Now HALF PRICE!

Is the total saved enough to buy this holiday?
You **must** show your working.

[5 marks]

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....

8   Put these in order starting with the smallest value.

$$\frac{13}{4} \qquad\qquad 3\frac{1}{2} \qquad\qquad 3.15 \qquad\qquad \sqrt{9}$$

You **must** show your working.

[3 marks]

....

....

....

....

....

Smallest ....

....

....

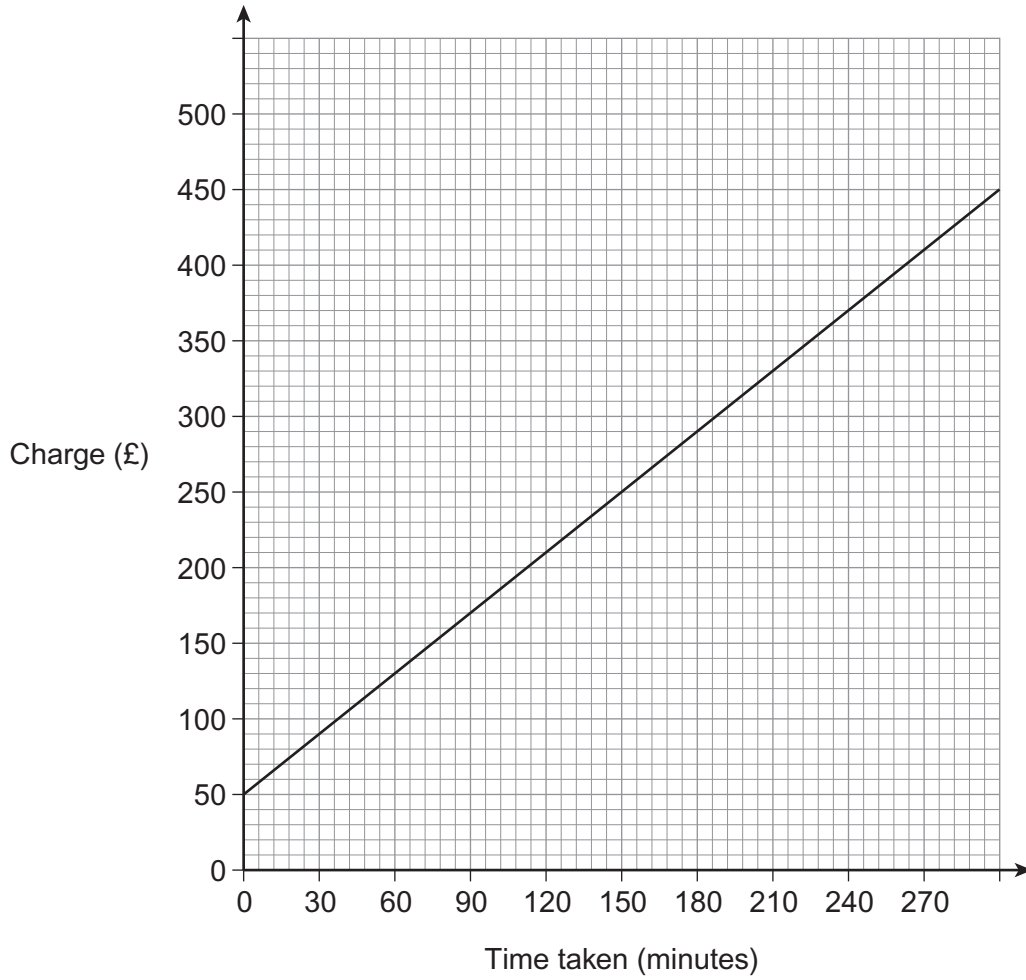Largest ....

8

Turn over ▶

9 Law firm *A* uses this graph to work out charges.

9 (a) How much does Law firm *A* charge for 30 minutes?

[1 mark]

Answer £ ....

9 (b) Law firm *A* charges a customer £370

How many minutes is this for?

[1 mark]

Answer .... minutes

9 (c) Law firm *B* charges

£150 for up to 90 minutes

plus £50 for every extra 30 minutes.

Which law firm is cheaper, and by how much, for 270 minutes?

[3 marks]

....

....

....

Law Firm .... is cheaper by £ ....

10 Nick buys four oranges.
He pays with a £2 coin.

He is given three coins in change.
The three coins all have the **same** value.

Work out the cost of **one** orange.

[4 marks]

....

....

....

....

....

....

....

Answer .... pence

11 $c = \dfrac{1}{2}$ $d = \dfrac{1}{3}$

Work out the value of cd

[2 marks]

....

....

....

Answer ....

12 Solve $8x - 10 = 30$

[2 marks]

....

....

$x =$ ....

13 Put the correct symbol in each box.

Choose from $<$ $>$ $=$

[3 marks]

11×12 ☐ 22×6

3^2 ☐ 2^3

$\dfrac{10}{0.5}$ ☐ 10

Turn over ▶

14
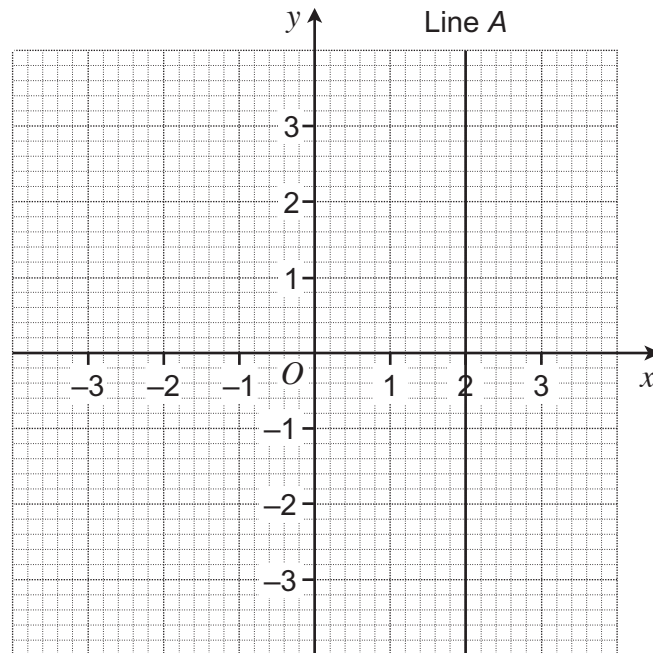
14 (a) Circle the equation of line *A*.

[1 mark]

$y = 2$ $\qquad$ $x = 2$ $\qquad$ $x + y = 2$ $\qquad$ $y = x + 2$

14 (b) On the grid draw the line $\quad y = x$

[1 mark]

14 (c) Write down the coordinates of the point where the line $y = x$ crosses line *A*.

[1 mark]

Answer (.......... , ...)

15 2476 adults watch a cricket match.

The ratio   men : women   is   3 : 1

How many **more** men than women watch the match?

[3 marks]

....

....

....

....

....

Answer ....

Turn over for the next question

6

*16 Here are three offers for a computer.

Tablet World	IT Supplies	PC Heaven
Usual price £170	Usual price £180	Special offer
20% off	$\frac{1}{4}$ off	Pay £23 each month for 6 months

Which offer is the cheapest?
You **must** show your working.

[6 marks]

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....

Answer ....

17 (a) Simplify fully $4a - 3a + 2b - 8b$

[2 marks]

....

....

....

Answer ....

17 (b) Factorise $m^2 - 2m$

[1 mark]

Answer ....

17 (c) Multiply out $5x(x - 3)$

[2 marks]

....

Answer ....

18 I am thinking of a number.

My number is between 20 and 30
My number and 12 have only one common factor.

What number could I be thinking of?
Give all **three** possible answers.

[2 marks]

....

....

....

Answer .... , ... , ...

13

19 Two positive fractions add up to $\frac{1}{3}$

Each fraction has a **different** value.

What could the fractions be?
Give **one** possible answer.

[3 marks]

....

....

....

Answer ....   + ...   = $\frac{1}{3}$

END OF QUESTIONS

3