

Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										

For Examiner's Use	
Examiner's Initials	
Pages	Mark
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16	
TOTAL	



General Certificate of Secondary Education
Foundation Tier
June 2014

Mathematics

43602F

Unit 2

Monday 9 June 2014 9.00 am to 10.15 am

F

<p>For this paper you must have:</p> <ul style="list-style-type: none"> mathematical instruments. <p>You must not use a calculator.</p>	
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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.



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]

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.....

.....

Answer £

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

[2 marks]

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.....

.....

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

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

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

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 $38 \times 20 - 2 \times 19^2 = 38$

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

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

[1 mark]

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.....



*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.

$\frac{13}{4}$

$3\frac{1}{2}$

3.15

$\sqrt{9}$

You **must** show your working.

[3 marks]

.....

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.....

Smallest

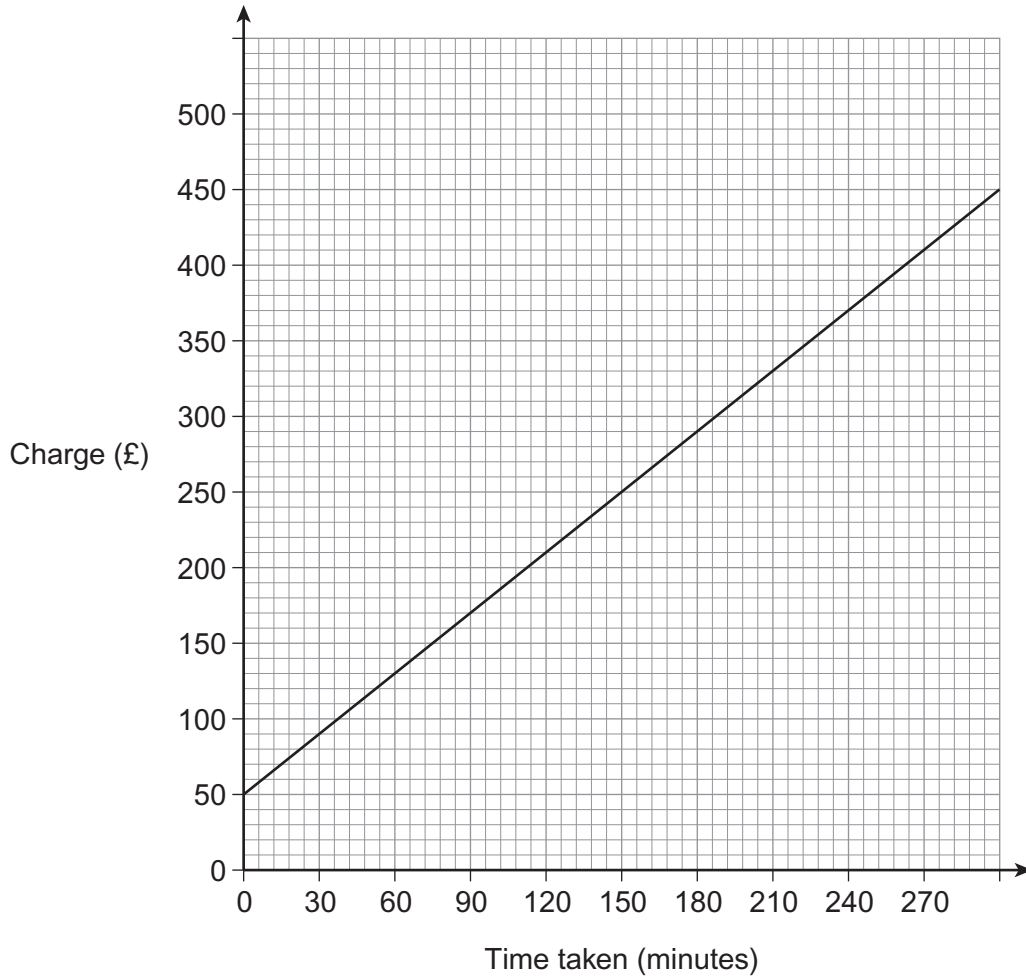
.....

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Largest



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 £

5

Turn over ►



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]

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Answer pence

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

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

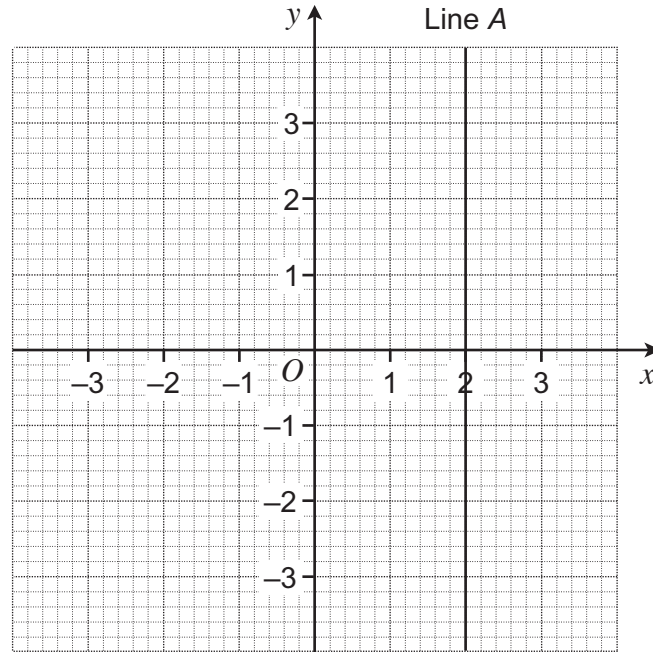
2^3

$\frac{10}{0.5}$

10



14



14 (a) Circle the equation of line A.

[1 mark]

$y = 2$

$x = 2$

$x + y = 2$

$y = x + 2$

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

[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

Turn over ►



***16** Here are three offers for a computer.

Tablet World

Usual price £170

20% off

IT Supplies

Usual price £180

$\frac{1}{4}$ off

PC Heaven

Special offer

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]

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.....

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]

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.....
.....

Answer , ,



- 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]

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.....
.....

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

END OF QUESTIONS

