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For Examiner's Use	
Examiner's Initials	
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General Certificate of Secondary Education  
Foundation Tier  
June 2015

# Mathematics

43602F

## Unit 2

Thursday 4 June 2015 9.00 am to 10.15 am

**F**

<p><b>For this paper you must have:</b></p> <ul style="list-style-type: none"> <li>mathematical instruments.</li> </ul> <p>You must <b>not</b> 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 15 and 21. 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.

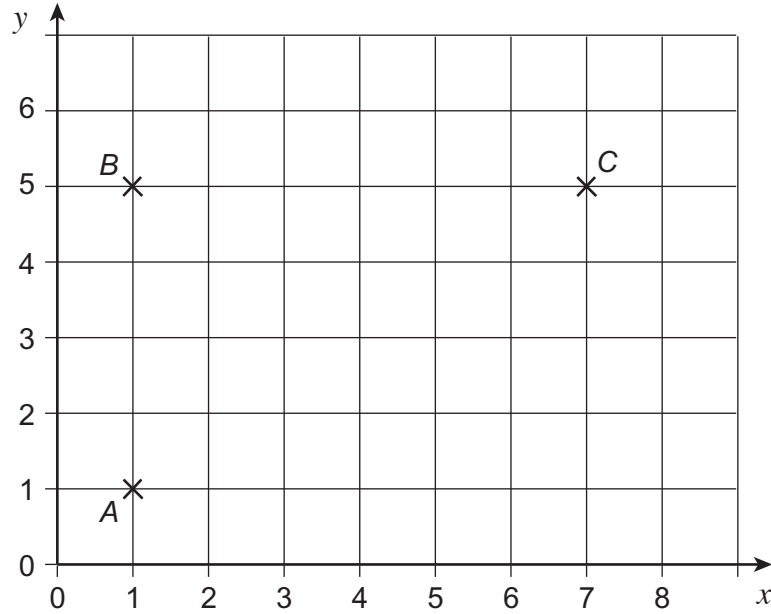
### Advice

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



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

- 1** Points  $A$ ,  $B$  and  $C$  are shown on the grid.



- 1 (a)** Write down the coordinates of point  $C$ .

[1 mark]

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

- 1 (b)**  $ABCD$  is a rectangle.

Write down the coordinates of point  $D$ .

[1 mark]

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

- 1 (c)** Write down the coordinates of the midpoint of  $AC$ .

[1 mark]

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



**2 (a)** A number is  
between 30 and 60  
even  
and a multiple of 7

What are the **two** possible numbers?

**[2 marks]**

.....  
.....

Answer ..... and .....

**2 (b)** Circle the number that is **not** a factor of 36

**[1 mark]**

4                  6                  8                  9

**Turn over for the next question**



3 I put these coins into two piles.



50p



20p



20p



20p



5p



5p



5p



5p

Each pile has the same amount of money.

List the coins in each pile.

[3 marks]

.....

.....

.....

.....

.....

Pile 1 .....

Pile 2 .....



4 (a) Write 40% as a fraction.

[1 mark]

.....

Answer .....

4 (b) Write 70% as a decimal.

[1 mark]

.....

Answer .....

4 (c) Write  $\frac{1}{4}$  as a percentage.

[1 mark]

.....

Answer ..... %

Turn over for the next question



5 (a) Work out  $184 \div 8$

[1 mark]

.....

.....

.....

Answer .....

5 (b) Work out  $0.4 \times 3$

[1 mark]

.....

.....

.....

Answer .....



6

$x$ ,  $y$  and  $z$  are numbers.  
The total for each row in the table is shown.

			<b>Total</b>
$x$	$x$	$x$	21
$x$	$x$	$y$	26
$x$	$y$	$z$	34

Work out the values of  $x$ ,  $y$  and  $z$ .

**[3 marks]**

.....

.....

.....

.....

.....

.....

.....

.....

.....

$$x = \text{.....}$$

$$y = \text{.....}$$

$$z = \text{.....}$$



7 Mrs Black's five children owe her some money.

Mary	Tom	Will	Ben	Frances
-13	-7	-4	-21	-5

Key: 

Mary
- 13

 means that Mary owes £13

7 (a) Who owes the least amount?

Circle your answer.

[1 mark]

Mary                  Tom                  Will                  Ben                  Frances

7 (b) How much **more** does Ben owe than Frances?

[1 mark]

.....

Answer £ .....

7 (c) Tom borrows another £3

How much does he owe now?

[1 mark]

.....

Answer £ .....





**8 (a)** Circle the word that describes  $5x + 2$  **[1 mark]**

equation

expression

formula

term

**8 (b)** Circle the word that describes  $3x + 7 = 16$  **[1 mark]**

equation

expression

formula

term

**9 (a)** Write these numbers in order, with the smallest first. **[1 mark]**

0.37

0.325

0.4

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

**9 (b)** Circle the **two** values that are equivalent to 0.6 **[2 marks]**

 $\frac{1}{6}$ 

6%

 $\frac{3}{5}$  $\frac{6}{100}$ 

60%



**10** Work out the value of  $\sqrt{4^3}$  **[2 marks]**

.....  
.....

Answer .....

**11 (a)** Simplify fully  $3a + 8a - 5a$  **[1 mark]**

.....  
.....

Answer .....

**11 (b)** Solve  $10x = 85$  **[1 mark]**

.....  
.....

$x =$  .....

**11 (c)** Solve  $\frac{y}{5} = 4$  **[1 mark]**

.....  
.....

$y =$  .....



12 Two-fifths of a number is 12

Work out half of the number.

[3 marks]

.....

.....

.....

.....

.....

Answer .....

13 Complete the shopping bill.

[3 marks]

Carrots 0.5 kg at 98p per kg .....

Potatoes 2.5 kg at £1.50 per kg .....

Total .....

Turn over for the next question

Turn over ►



**14** The term-to-term rule of a sequence is

Divide the number by 2 and subtract 4

The first term is 32

Work out the fourth term.

**[3 marks]**

.....  
.....  
.....

Answer .....

**\*15** The total cost,  $C$  pence, of  $x$  pens and  $y$  rulers is given by

$$C = 70x + 60y$$

Work out the total cost of five pens and three rulers.  
Give your answer in pounds.

**[3 marks]**

.....  
.....  
.....

Answer £ .....



16



Bag A



Bag B

Bag A contains £7.20 in 20p coins.

Bag B contains only 5p coins.

The number of coins in bag B is three-quarters of the number of coins in bag A.

How much money is in bag B?

**[4 marks]**

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Answer £ .....

10

Turn over ►



17 The table shows information about grocery items.

	Small	Medium	Large
Bag of apples	–	495 grams	795 grams
Tin of fish	195 grams	285 grams	–
Packet of nuts	37 grams	57 grams	87 grams

Use approximations to estimate the **total** amount these items weigh.

- 2 large bags of apples
- 1 small tin of fish
- 2 medium packets of nuts

You **must** show your working.

[3 marks]

.....

.....

.....

.....

.....

Answer ..... grams

18 Work out **all** the integers that satisfy the inequality  $8 < 2n \leq 16$

[2 marks]

.....

.....

.....

Answer .....



**19**  $x + y = 100$

$x$  is a square number.

$y$  is a prime number.

Work out the values of  $x$  and  $y$ .

**[2 marks]**

.....  
.....  
.....  
.....

$x = \dots\dots\dots y = \dots\dots\dots$

**20** The cost of a car repair is divided into labour and parts in the ratio 3 : 1  
Value added tax (VAT) at 20% is added to the cost of labour and the cost of parts.  
The cost of labour is £150 before VAT is added.

Work out the total cost of the repair including VAT.

**[4 marks]**

.....  
.....  
.....  
.....  
.....

Answer £ .....



- \*21 (a)** Write 200 as the product of prime factors.  
Give your answer in index form.

**[3 marks]**

Answer .....

- 21 (b)** Circle the **two pairs** of numbers that have

Highest Common Factor (HCF) 4

**and**

Least Common Multiple (LCM) 60

**[2 marks]**

4 and 60

4 and 30

4 and 12

12 and 30

12 and 20





**22** The cash price for a boiler is £2000  
Customers can pay the cash price or pay monthly.

<p style="text-align: center;"><b>Cash Price</b> £2000</p>
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<p style="text-align: center;"><b>Pay Monthly</b> 60 monthly payments of £40</p>
--

Work out the percentage increase from the cash price when paying monthly. **[4 marks]**

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Answer ..... %

**END OF QUESTIONS**



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