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	
16–17	
TOTAL	

AQA

General Certificate of Secondary Education
Foundation Tier
November 2013

Mathematics 43602F

Unit 2

F

Friday 8 November 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

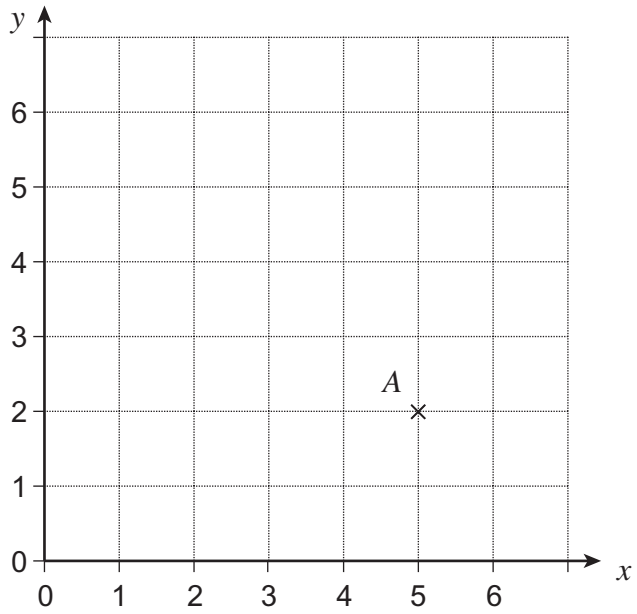
Instructions
- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this 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 2, 8 and 19. 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 Point A is shown on the grid.



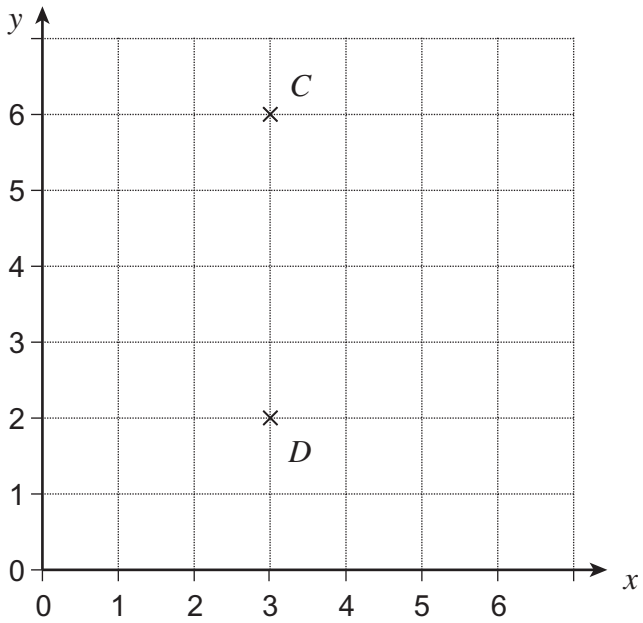
1 (a) Write down the coordinates of A.

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

1 (b) Plot point B (1, 2) on the grid.

(1 mark)

1 (c) Point E is the same distance from point C as it is from point D on the grid below.



Write down **two** possible pairs of coordinates of E.

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

Turn over for the next question

4

*__2__ Dan has £1200.
He pays £350 for a holiday.

His credit card bill is £750.

Does he have enough left to pay the bill?
You **must** show your working.

.....

.....

.....

.....

.....

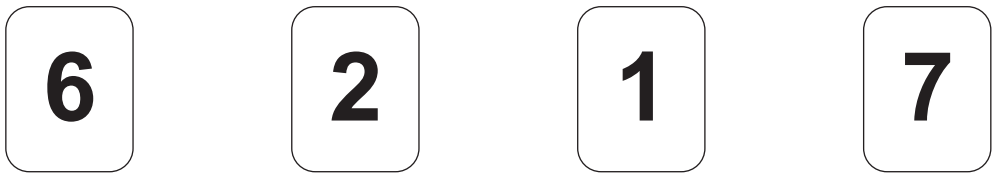
(3 marks)

3 Complete the table.

Fraction	Decimal	Percentage
$\frac{1}{2}$		50%
$\frac{3}{4}$	0.75	
	0.10	10%

(3 marks)

4 Here are four number cards.



4 (a) Write the number 6217 in words.

.....

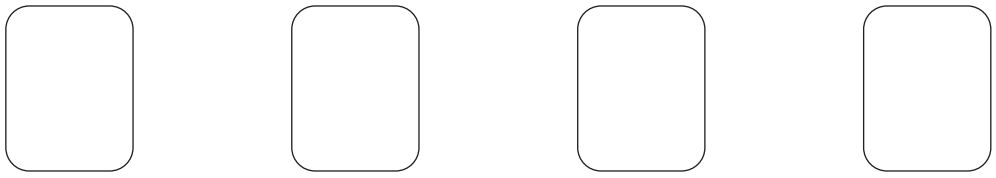
.....

(1 mark)

4 (b) Write the number 6217 to the nearest 10.

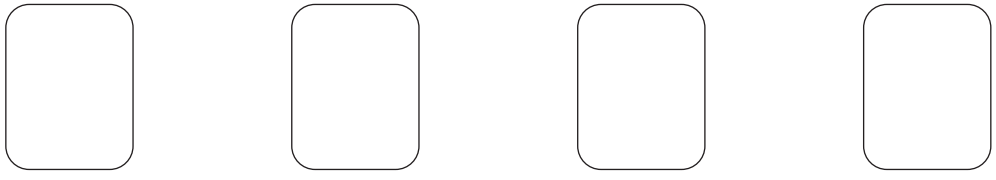
Answer ..... *(1 mark)*

4 (c) Use all **four** cards to show the smallest possible number.



(1 mark)

4 (d) Use all **four** cards to show a number with a value as close to 4000 as possible.



(1 mark)

10

5 (a) Write down the next **even** number after 4832.

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

5 (b) An **odd** number is between 90 and 100.

It is a multiple of 7.

Work out the number.

.....

.....

.....

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

5 (c) Why is 9 a factor of 18?

.....

.....

(1 mark)

6 Jo works for 12 hours.
She is paid £8 for each hour she works.

Jo says, "My pay is £100."

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

.....

.....

.....

(2 marks)

7 (a) Circle the expression that is equivalent to $4 \times x$

x^4 $4x$ 4^x $x \times x \times x \times x$

(1 mark)

7 (b) Circle the expression that is equivalent to $y \times y \times y$

$3y$ y^2 $3y^2$ y^3

(1 mark)

7 (c) Circle the expression that is equivalent to $a + b$

$b + a$ ab ba $2ab$

(1 mark)

Turn over for the next question

9

***8** Shabir buys 30 bottles of lemonade for a party.
He is given 20% discount off the total price.

One bottle costs 80p **before** the discount.

How much does he pay?

.....

.....

.....

.....

.....

.....

.....

Answer ..... *(4 marks)*

9 (a) Work out the value of $5c - d$ when $c = 3$ and $d = 7$

.....

.....

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

9 (b) Solve $10x = 65$

.....

.....

$x =$ ..... *(2 marks)*

9 (c) Solve $y + 32 = 43$

.....

.....

$y =$ ..... *(1 mark)*

9 (d) Factorise $5a - 10$

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

Turn over for the next question

10

10 The first term in a sequence is 10

The term-to-term rule is 'take away 6'

Work out the 4th term.

.....

.....

.....

.....

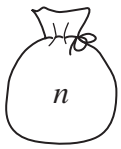
.....

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

11 Write down the **two** prime numbers between 20 and 30

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

12 There are n plums in Bag A.
Bag B has three times as many plums as Bag A.
Bag C has 14 more plums than Bag A.
Bag B and Bag C have the same number of plums.



Bag A

Bag B

Bag C

Use algebra to work out the number of plums in Bag A.
You **must** show your working.

.....

.....

.....

.....

.....

.....

.....

Answer ..... *(4 marks)*

9

Turn over ▶

13 (a) Work out 0.6×0.1

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

13 (b) Work out $0.5 - 0.18$

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

14 Work out $\frac{5}{6} \times \frac{3}{20}$

Give your answer as a fraction in its simplest form.

.....

.....

.....

.....

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

15 The table shows the cost of a short break at a holiday park.

Holiday starts in	Adult	1st and 2nd Child	3rd and 4th Child
June	£199 each	£39 each	FREE
July	£299 each	£49 each	£19 each
August	£349 each	£59 each	£39 each

Mr and Mrs Hyde and their **three** children want a short break starting on 28 July.

15 (a) Use approximations to **estimate** the cost of this short break.
You **must** show your working.

.....

.....

.....

.....

.....

Answer £ ..... *(3 marks)*

15 (b) Work out **exactly** how much **more** it would cost if they went in August instead of July.

.....

.....

.....

Answer £ ..... *(2 marks)*

11

16 (a) Show that 125 is a cube number.

.....

.....

(1 mark)

16 (b) 125 = a + b

a and b are square numbers.

Find **two** possible pairs of values for a and b.

.....

.....

.....

.....

.....

a = ... b = ...

and a = ... b = ... *(2 marks)*

17 Kerry needs $\frac{2}{3}$ of a tank of petrol to drive home.

She has $\frac{5}{8}$ of a tank of petrol.

Does she have enough petrol to drive home?
You **must** show your working.

.....

.....

.....

.....

.....

(2 marks)

Turn over for the next question

5

18 (a) Write 36 as the product of prime factors.
Give your answer in index form.

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

18 (b) Work out the Highest Common Factor (HCF) of 36 and 81.

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

***19** Customers at a shop who spend £100 or more can pay by these methods.

A	12 payments	Each payment is 10% of the cost price
B	24 payments	Each payment is 6% of the cost price
C	36 payments	Each payment is 4% of the cost price

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

.....

.....

.....

.....

.....

.....

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

END OF QUESTIONS

8

There are no questions printed on this page

DO NOT WRITE ON THIS PAGE
ANSWER IN THE SPACES PROVIDED

There are no questions printed on this page

DO NOT WRITE ON THIS PAGE
ANSWER IN THE SPACES PROVIDED

There are no questions printed on this page

DO NOT WRITE ON THIS PAGE
ANSWER IN THE SPACES PROVIDED