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| Centre Number | | | | | | Candidate Number | | | | |
| Surname | | | | | | | | | | |
| Other Names | | | | | | | | | | |
| Candidate Signature | | | | | | | | | | |

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|---------------------|------|
| 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 | |



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

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

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.

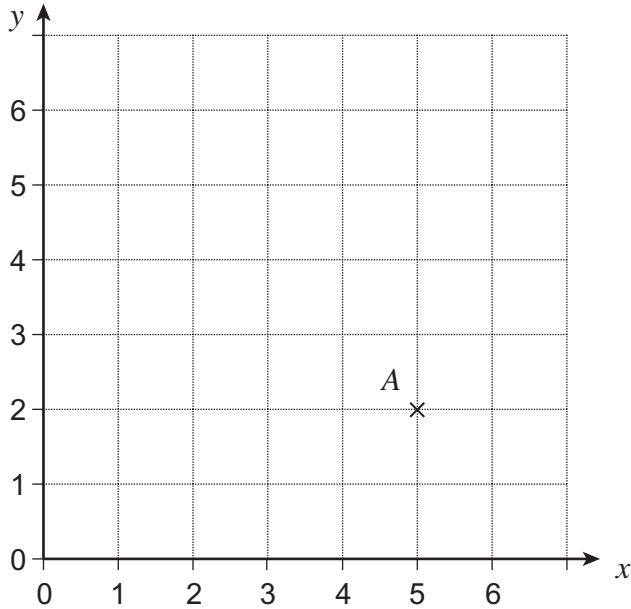
Advice

- 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 (..... ,)

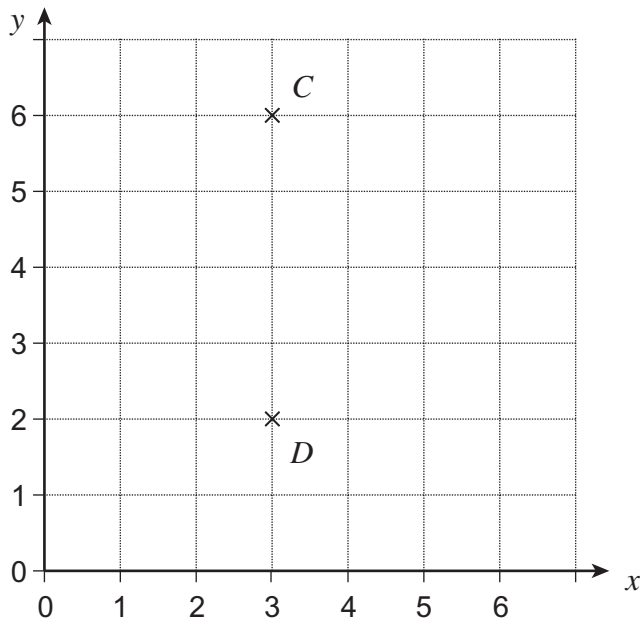
(1 mark)

- 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



***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.

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(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.

.....
.....

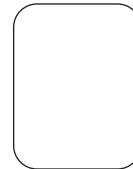
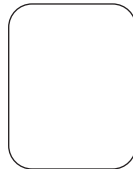
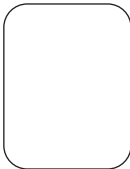
(1 mark)

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

Answer

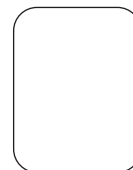
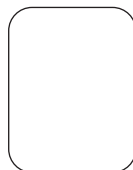
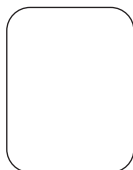
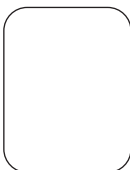
(1 mark)

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

Turn over ►



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



***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?

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Answer (4 marks)



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

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.....

Answer (2 marks)

9 (b) Solve $10x = 65$

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.....

$x =$ (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 The first term in a sequence is 10
The term-to-term rule is 'take away 6'

Work out the 4th term.

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Answer (3 marks)

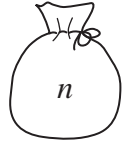
11 Write down the **two** prime numbers between 20 and 30

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.

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Answer (4 marks)



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.

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.....

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.

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Answer £ (3 marks)

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

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Answer £ (2 marks)



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

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.....

(1 mark)

16 (b) $125 = a + b$

a and b are square numbers.

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

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$a = \dots\dots\dots b = \dots\dots\dots$

and $a = \dots\dots\dots b = \dots\dots\dots$ (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.

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(2 marks)

Turn over for the next question

| |
|---|
| 5 |
|---|

Turn over ►



- 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.

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Answer (3 marks)

END OF QUESTIONS



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