Surname

Other Names

Candidate Signature

Mathematics **43602F**

Unit 2

Tuesday 11 June 2013   9.00 am to 10.15 am

F

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 13 and 17. 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) Circle the **two** odd numbers.

16   28   37   52   65   74

(1 mark)

1 (b) Work out   74 – 16

....

....

....

Answer ....   *(1 mark)*

2 Write down the next **two** terms in the sequence.

2   9   16   23   ....

(2 marks)

3
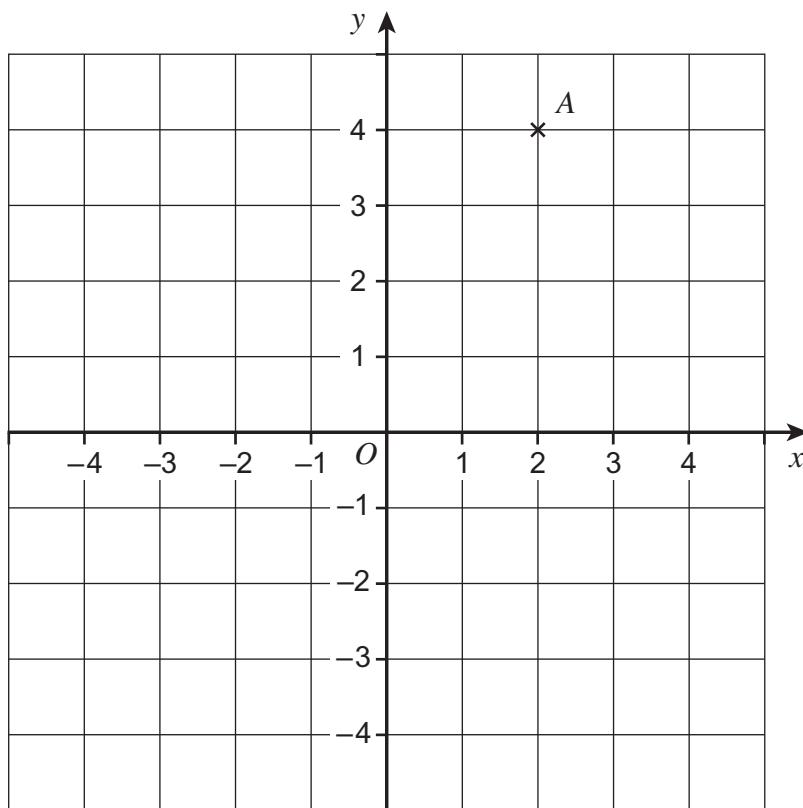
3 (a) Write down the coordinates of point A.

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

3 (b) Plot the point (–3, –1) on the grid.
Label it B. *(1 mark)*

3 (c) Point C has
- the same x-coordinate as point A
- the same y-coordinate as point B.

Write down the coordinates of point C.

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

4 A shop bought a box of pencils for £2.
There were 10 pencils in the box.

4 (a) How much did one pencil cost?

....

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

4 (b) The shop sold all the pencils for 25p each.

How much profit did the shop make?

....

....

....

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

5 Use approximations to estimate the value of 9.9×41

....

Answer ....   *(2 marks)*

6 The cost of hot drinks in a café is shown.

Coffee	£1.50
Tea	£1.25
Hot chocolate	£2.00

Tom buys two hot chocolates and one tea.

6 (a) How much does he pay?

....

....

....

Answer £ .... *(2 marks)*

6 (b) He pays with a £10 note.

How much change should he get?

....

....

....

Answer £ .... *(2 marks)*

9

Turn over ▶

7   Here are three numbers.

                    23   36   40

Give a reason why each number could be the odd one out.

23 is the odd one out because ....

....

36 is the odd one out because ....

....

40 is the odd one out because ....

....

                                                                                                    (3 marks)

8

Pay = £8 × number of hours worked

8 (a) Donna worked for five hours.

Work out her pay.

....

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....

Answer £ .... *(2 marks)*

8 (b) Lee's pay is £96.

How many hours did he work?

....

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....

....

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

7

Turn over ▶

9   Brenda has 100 coloured beads.

27 are red.
41 are blue.
The rest are green.

She wants to make a necklace using all these beads.
She also wants to buy extra beads so she has the same number of each colour.

What is the least number of each colour she needs to buy?

....

....

....

....

....

....

Red ....

Blue ....

Green ....

(4 marks)

10 (a)   Write   3.574   to 1 decimal place.

Answer ....   *(1 mark)*

10 (b)   Put these decimals in order, starting with the smallest.

0.5   0.62   0.325

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

10 (c)   Circle the **two** values that are equivalent to 0.8

8% $\frac{4}{5}$ 80% $\frac{8}{100}$ $\frac{1}{8}$

(2 marks)

11   Three numbers multiplied together give an answer of −12.
The sum of **two** of the numbers is zero.

What could the **three** numbers be?

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....

....

Answer ....   *(2 marks)*

10

Turn over ▶

12 600 people visit a cinema.

$\frac{1}{4}$ go to screen 1.

40% go to screen 2.

The rest go to screen 3.

How many people go to screen 3?

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....

....

Answer .... *(5 marks)*

13 (a) Work out $\quad \frac{1}{3} \times \frac{1}{4}$

....

....

Answer .... *(1 mark)*

*13 (b) What fraction is half way between $\frac{1}{4}$ and $\frac{1}{2}$?

....

....

....

Answer .... *(3 marks)*

14 (a) Work out the value of $3c - 4d$ when $c = 5$ and $d = \frac{1}{2}$

....

....

....

Answer .... *(2 marks)*

14 (b) Expand and simplify $3(2x + 4) + 2(x + 1)$

....

....

....

....

Answer .... *(3 marks)*

Turn over for the next question

14

Turn over ▶

15 A sequence increases by 5 each time.
The first term is x.

15 (a) Write down an expression for the second term.

Answer .... *(1 mark)*

15 (b) The sum of the first four terms is 54.

Set up and solve an equation to work out the value of x.

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....

....

x = ... *(4 marks)*

16 (a) Work out the value of $3^3 + 4^2$

....

....

Answer .... *(2 marks)*

16 (b) Work out $5^3 - 10^2$

Give your answer as a power of 5.

....

....

....

Answer .... *(3 marks)*

*17 Three people share £180.

Billy gets twice as much as Amy.
Chloe gets three times as much as Billy.

Is Chloe's share enough to buy a bike costing £115?
You **must** show your working.

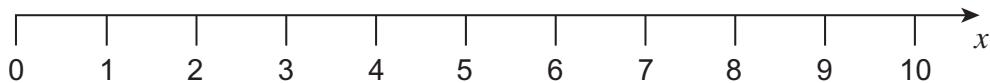...

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(5 marks)

Turn over ▶

18 (a)   Solve $4x - 7 \leqslant 13$

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Answer ....   *(2 marks)*

18 (b)   Show $3 < x \leqslant 8$ on the number line.

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├────┼────┼────┼────┼────┼────┼────┼────┼────┼────►
0    1    2    3    4    5    6    7    8    9   10   x
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(2 marks)

END OF QUESTIONS

4

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