Surname

Other Names

Candidate Signature

AQA

General Certificate of Secondary Education
Foundation Tier
March 2011

Mathematics **43602F**

Unit 2

Wednesday 9 March 2011   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 10 and 14. 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 booklet.

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

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

1 (a) Write the number 3840 in words.

Answer ....

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(1 mark)

1 (b) Write the number five thousand and twelve in figures.

Answer ....

(1 mark)

1 (c) What is the value of the digit 4 in the number 8462?

Answer ....

(1 mark)

1 (d) Write the number 2684 correct to the nearest 1000.

Answer ....

(1 mark)

1 (e) Work out 500 − 358

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Answer ....

(2 marks)

2 Ann's pay (£) is worked out using this formula.

Pay = Number of hours worked × 12 + 30

Ann works for 20 hours.

Work out her pay.

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Answer £ ....

(3 marks)

3   Here is a list of numbers.

<div align="center">

7   10   16   23   27   47   60

</div>

From this list, write down

3 (a)   the multiple of 8

Answer ....   *(1 mark)*

3 (b)   the factor of 30

Answer ....   *(1 mark)*

3 (c)   the number that is one-third of 69

Answer ....   *(1 mark)*

3 (d)   the cube number.

Answer ....   *(1 mark)*

4   Anil, Ben, Chloe, Dave and Emma play a game.
Here is some information about the number of points they score.

Anil scores 20 points.
Ben scores 12 more points than Anil.
Ben scores twice as many points as Chloe.
Dave scores 11 fewer points than Ben.

The total number of points scored is 100.

How many points does Emma score?

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Answer ....   *(4 marks)*

5 There are 12 cans in one pack of cola.
One pack costs £6.50

Josh buys ten packs.
He sells 90 of the cans for 80p each.
He sells the rest at half price.

How much profit does he make?

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Answer £ .... *(5 marks)*

6 (a) Solve $x + 3 = 7$

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Answer x = ... *(1 mark)*

6 (b) Solve $2x + 5 = 1$

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

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

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

7 (a) (ii) Write 30% as a decimal.

Answer ....   *(1 mark)*

7 (a) (iii) Write $\frac{1}{4}$, 30% and 0.2 in order with the smallest first.

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Answer ....   *(1 mark)*

7 (b) Complete the following.

7 (b) (i) $\frac{2}{3} = \frac{\boxed{}}{18}$

(1 mark)

7 (b) (ii) $\frac{\boxed{}}{4} = \frac{15}{20}$

(1 mark)

7 (c) Work out $\frac{3}{8}$ as a decimal.

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Answer ....   *(2 marks)*

15

Turn over ▶

8 Andy has some sweets.
He gives one-quarter of the sweets to Dan.
Dan eats five sweets and has one left.

How many sweets does Andy start with?

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Answer .... *(2 marks)*

9 (a) Here are the first two terms of a sequence.

5   4   ……   ……   ……

The rule for finding the next term in the sequence is

Multiply the previous term by 2 and subtract 6

Work out the first negative term of the sequence.

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Answer .... *(2 marks)*

9 (b) Here are the first three terms of another sequence.

1   4   7   ……   ……   ……

Which of the following is the nth term for this sequence?
Circle the correct answer.

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$n + 3$ $3n + 1$ $3n - 2$ $3n + 2$

(1 mark)

*10(a) (i)   Simplify the expression $m \times 5$

Answer .... *(1 mark)*

10 (a) (ii)   Simplify fully $2a + 5b + 3a - 2b$

Answer .... *(2 marks)*

10 (b) n represents an even number.

Explain why $(n + 1)(n - 1)$ is always odd.

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(2 marks)

11 (a)   Circle **all** the prime numbers in this list.

3   6   7   9   10   13   15

(2 marks)

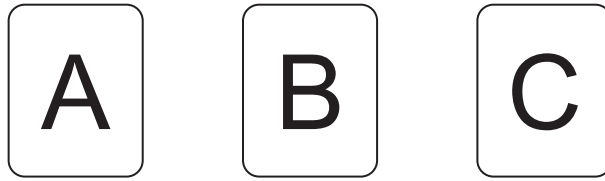**11 (b)** n is a positive whole number.
$6n - 1$ is **not** a prime number.

Work out a possible value for n.

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Answer .... *(2 marks)*

12 Here are three number cards.

A B C

There is a whole number on the back of each card.

The number on card A is three times the number on card B.
The number on card C is twice the number on card A.
The sum of the numbers on all three cards is 120.

Work out the number on each card.

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Answer A .... B .... C .... *(3 marks)*

13 Here is a list of ingredients.

Serves 4 people	
Bacon	50 g
Minced beef	450 g
Chopped tomatoes	400 g
Button mushrooms	100 g
Beef stock	125 ml

Marco is making a meal for 14 people using these ingredients.

Work out the number of grams of minced beef he needs.

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

*14 Bella wants to buy 12 tins of baked beans for a barbeque.
Two supermarkets have these special offers.

PriceSave **Baked beans** Normal price 50 p **Special offer** 30% off all tins	**CostCut** **Baked beans** Normal price 48 p **Special offer** Pay for 3 tins, get 1 free

Which is cheaper?
You **must** show your working.

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Answer .... *(5 marks)*

15 Use approximations to estimate the value of $\dfrac{10.13^2}{0.496}$

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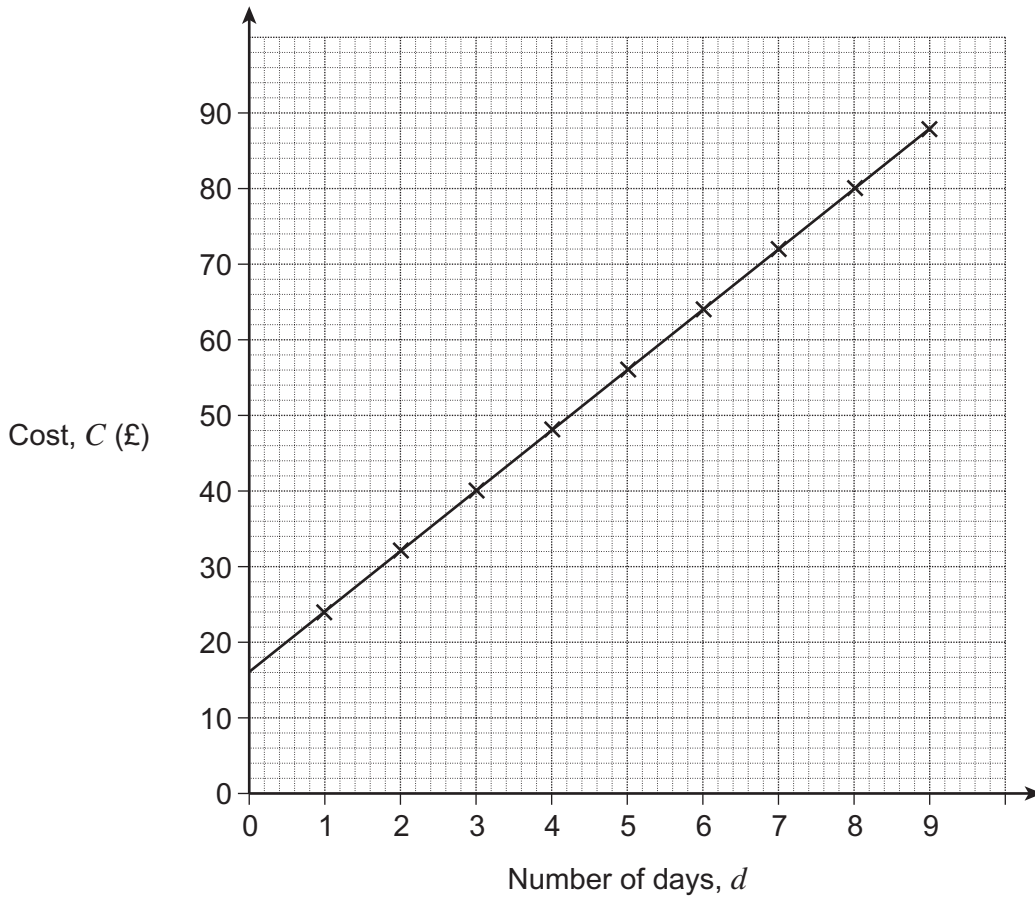Answer .... *(2 marks)*

16 The graph shows the cost, C (£), of hiring a circular saw from Branch Tool Hire for a number of days, d.

16 (a) Circle the correct formula for the cost, C.

$C = 24d$ $C = 8d + 24$ $C = 16d + 8$ $C = 8d + 16$

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(1 mark)

16 (b)   The cost of hiring a circular saw from Woods Tool Hire is given by the formula

$$C = 9d + 11$$

Sam thinks that Woods Tool Hire is always cheaper.

Is this true?
Tick a box.

Yes ☐   No ☐

Give reasons for your answer.

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(3 marks)

17   Concrete is made by mixing cement, sand and gravel in the ratio   1 : 2 : 4
A builder mixes 455 kg of concrete.

How much gravel does he need?

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

END OF QUESTIONS

7

There are no questions printed on this page

**DO NOT WRITE ON THIS PAGE
ANSWER IN THE SPACES PROVIDED**