

Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										

For Examiner's Use	
Examiner's Initials	
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TOTAL	



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**

<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 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.



M A R 1 1 4 3 6 0 2 F 0 1

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.

$$\text{Pay} = \text{Number of hours worked} \times 12 + 30$$

Ann works for 20 hours.

Work out her pay.

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Answer £ ..... (3 marks)



3 Here is a list of numbers.

7 10 16 23 27 47 60

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)  $\frac{2}{3} = \frac{\square}{18}$

(1 mark)

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

(1 mark)

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

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Answer ..... (2 marks)



**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  $n$ th 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.

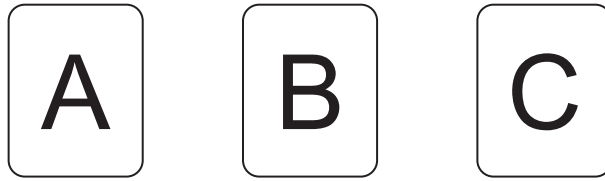
Work out a possible value for  $n$ .

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Answer ..... (2 marks)



12 Here are three number cards.



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.

<b>Serves 4 people</b>	
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.

<p><b>PriceSave</b></p> <p><b>Baked beans</b> Normal price 50 p</p> <p><b>Special offer</b> 30% off all tins</p>
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<p><b>CostCut</b></p> <p><b>Baked beans</b> Normal price 48 p</p> <p><b>Special offer</b> Pay for 3 tins, get 1 free</p>
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Which is cheaper?  
You **must** show your working.

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Answer ..... (5 marks)

15

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

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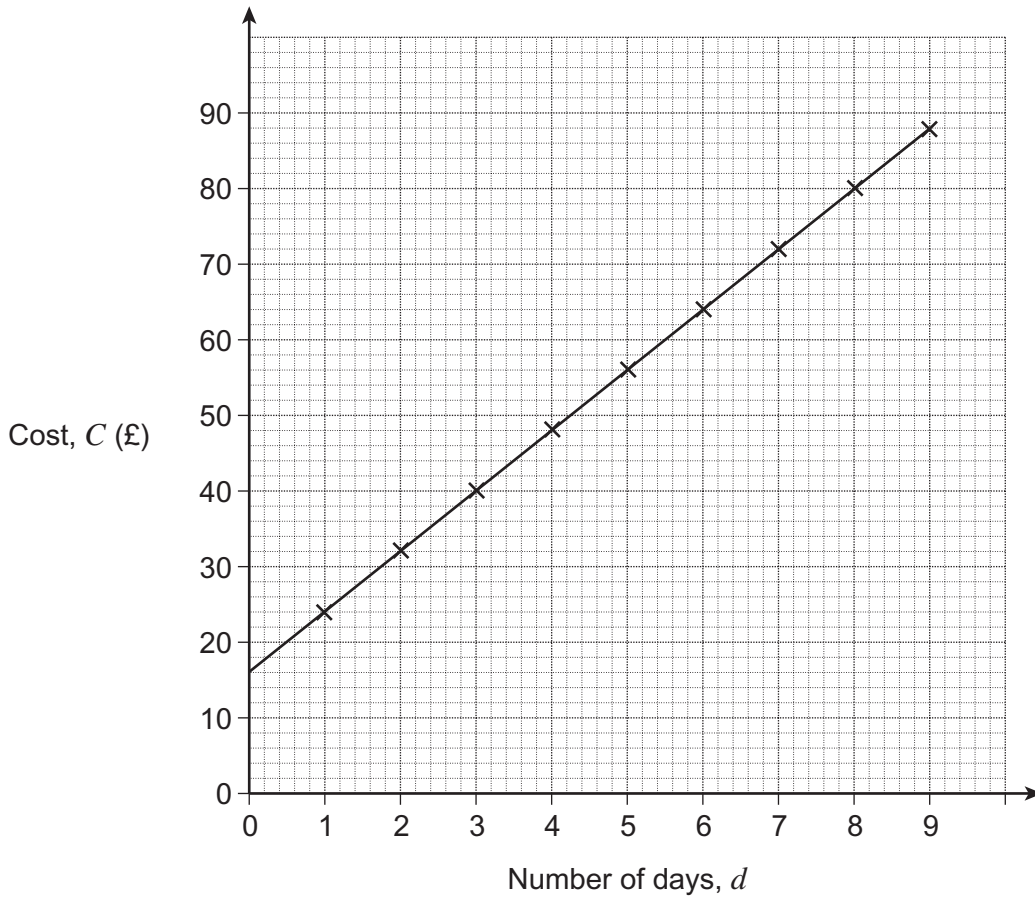
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Answer ..... (2 marks)



- 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**

