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Other Names										
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For Examiner's Use	
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General Certificate of Secondary Education  
Foundation Tier  
November 2010

# Mathematics

**43602F**

## Unit 2

Friday 12 November 2010 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 6, 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 booklet.

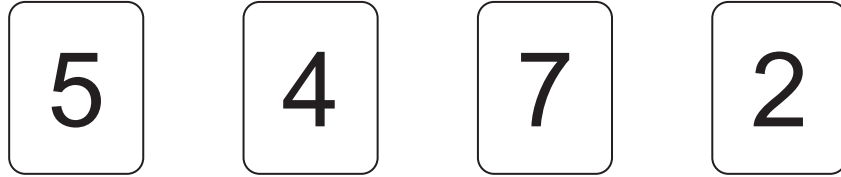
### Advice

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



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

- 1 Here is a set of four number cards.



The cards show the number 5472.

- 1 (a) Write down the number 5472 in words.

Answer .....

..... (1 mark)

- 1 (b) Write down the smallest number you can make using all four cards.

.....

Answer     (1 mark)

- 1 (c) Write down the largest **odd** number you can make using all four cards.

.....

Answer     (2 marks)

- 1 (d) Write the number 5472 to the nearest hundred.

Answer ..... (1 mark)



**2** Ann is paid £200 a week.  
Each week she saves one-quarter of her pay.

**2 (a)** How much does she save each week?

.....

Answer £ ..... (2 marks)

**2 (b)** She is saving for a new carpet that costs £320.  
How many weeks does it take to save enough to buy the carpet?

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.....  
.....

Answer ..... (2 marks)

**3** Jay has £1.50 in change.  
She only has 20 pence coins and 10 pence coins.  
She has twice as many 20 pence coins as 10 pence coins.

How many 20 pence coins does she have?

.....  
.....

Answer ..... (2 marks)

**Turn over for the next question**



- 4 The table shows what you need to make 4 pancakes.

<p><b>4 pancakes</b></p> <p>120 g of plain flour</p> <p>1 egg</p> <p>300 ml of milk</p>
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Beth wants to make 12 pancakes.

Complete the table below.

.....

.....

<p><b>12 pancakes</b></p> <p>.....g of plain flour</p> <p>.....eggs</p> <p>.....ml of milk</p>
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(3 marks)



5 (a) (i) Write down a multiple of 6 that is greater than 20.

Answer ..... (1 mark)

5 (a) (ii) Write down a factor of 20 that is less than 6.

Answer ..... (1 mark)

5 (b) Use these mathematical terms to complete the statements below.

cube      cube root      square      square root

10 is the ..... of 100

144 is the ..... of 12

5 is the ..... of 125

(3 marks)

5 (c) This is Ben's working for the calculation  $12 + 4 \times 10$

$$12 + 4 = 16$$

$$16 \times 10 = 160$$

$$\text{Answer} = 160$$

Ben is wrong.

Work out the correct answer for the calculation.

.....  
.....

Answer ..... (1 mark)



\*6 Here are the monthly charges for Mark’s mobile phone.

Monthly charge £15  
 100 free minutes then 12 p per minute  
 200 free texts then 10 p per text

During one month, Mark makes 150 minutes of calls and sends 285 texts.

Work out the total charge for the month.

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Answer £ ..... (5 marks)

7 Kay has 325 beads.  
Sharon has 165 beads.  
Kay gives Sharon some beads.  
They now have the same number of beads.

How many beads does Kay give Sharon?

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.....

Answer ..... (3 marks)



8 (a) The numbers in this sequence decrease by the same amount each time.

74 ..... 58 50 42 .....

What are the **two** missing numbers?

.....

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

8 (b) The numbers in this different sequence decrease by the same amount each time.

26 ..... ..... ..... 6

What are the **three** missing numbers?

.....  
.....  
.....  
.....

Answer ..... , ..... , ..... (2 marks)

9 (a) Solve  $3a = 12$

.....

Answer  $a =$  ..... (1 mark)

9 (b) Solve  $\frac{x}{5} = -6$

.....

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

9 (c) Solve  $5c + 4 = 19$

.....  
.....

Answer  $c =$  ..... (2 marks)

9 (d) Factorise fully  $4t - 20$

.....

Answer ..... (1 mark)



10 (a) Work out the value of  $2a + 3b$  when  $a = 5$  and  $b = 8$

.....  
.....

Answer ..... (2 marks)

10 (b) Expand and simplify  $3(2m - 4) + 5(m + 2)$

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

11 I am thinking of a number.  
Two-thirds of the number is 60.

What is  $1\frac{1}{2}$  times the number?

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Answer ..... (3 marks)

12 You are given that  $P = x^2 - y^2$

12 (a) Show that  $P$  is a prime number when  $x = 4$  and  $y = 3$

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(2 marks)

12 (b) Work out **two** other pairs of values for  $x$  and  $y$  so that  $P$  is a prime number.

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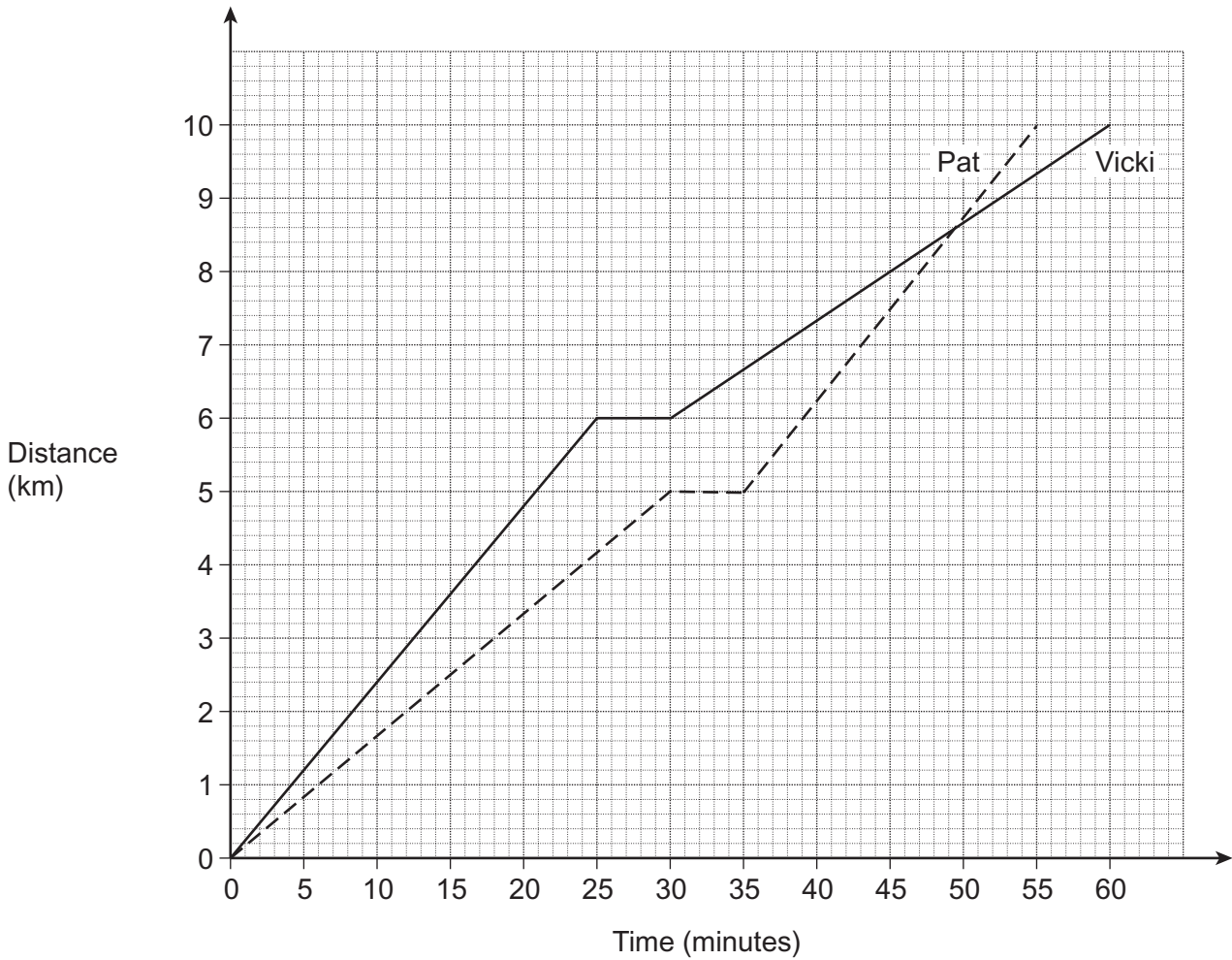
Answer  $x =$  ..... and  $y =$  .....

$x =$  ..... and  $y =$  ..... (3 marks)





13 The graph shows two training runs by Pat and Vicki.



13 (a) After how many minutes does Pat overtake Vicki?

Answer ..... minutes (1 mark)

13 (b) How far ahead is Vicki when Pat starts again after her rest?

.....  
 .....

Answer ..... km (2 marks)



**14** Two teachers and 18 students go to the theatre.  
 The cost of a student's ticket is half of the cost of a teacher's ticket.  
 The total cost of the tickets is £132.

Work out the cost of one student's ticket.

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Answer £ ..... (3 marks)

**15** What fraction is half way between  $\frac{1}{4}$  and  $\frac{1}{8}$ ?

Give your answer as a fraction in its simplest form.

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Answer ..... (3 marks)

**16** Divide £600 in the ratio 9 : 6 : 5

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Answer £ ..... : £ ..... : £ ..... (3 marks)



**\*17** Martha sells jars of jam at a farmers' market.  
She has 80 jars to sell at £3 each.  
She sells 50 jars and then reduces the price by 40%.  
Martha then sells the remaining jars at the reduced price.

It costs her £95 to make the jars of jam.  
Her target is to make a profit of at least £100.

Does she meet her target?  
You **must** show your working.

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(5 marks)

**END OF QUESTIONS**



**There are no questions printed on this page**

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

