

**Ma**

KEY STAGE

**3**

TIERS

**3–5****2006**

# Mathematics test

## Paper 2

### Calculator allowed

Please read this page, but do not open your booklet until your teacher tells you to start. Write your name and the name of your school in the spaces below.

**First name** \_\_\_\_\_

**Last name** \_\_\_\_\_

**School** \_\_\_\_\_

#### Remember

- The test is 1 hour long.
- You may use a calculator for any question in this test.
- You will need: pen, pencil, rubber, ruler, tracing paper and mirror (optional) and a calculator.
- This test starts with easier questions.
- Try to answer all the questions.
- Write all your answers and working on the test paper – do not use any rough paper. Marks may be awarded for working.
- Check your work carefully.
- Ask your teacher if you are not sure what to do.

For marker's  
use only

Total marks	
Borderline check	

## Instructions

### Answers



This means write down your answer or show your working and write down your answer.


### Calculators



You **may** use a calculator to answer any question in this test.

1. Draw lines to match the words to the correct numbers.

The first one is done for you.

	<div data-bbox="274 463 866 580">thirty-six</div>	<div data-bbox="1069 463 1313 580">3006</div>	
	<div data-bbox="274 719 866 835">three hundred and six</div>	<div data-bbox="1069 719 1313 835">36</div>	
	<div data-bbox="274 976 866 1093">three thousand and six</div>	<div data-bbox="1069 976 1313 1093">306</div>	
	<div data-bbox="274 1234 866 1350">three thousand and sixty</div>	<div data-bbox="1069 1234 1313 1350">3600</div>	
	<div data-bbox="274 1491 866 1608">three thousand six hundred</div>	<div data-bbox="1069 1491 1313 1608">3060</div>	

2 marks



2. There are 12 pupils in a group.  
The table on the opposite page gives information about them.  
Use the table to answer these questions.

(a) How many **girls** are in this group?



\_\_\_\_\_

1 mark

(b) Whose birthday is **one day after** Alex Alcroft's birthday?



\_\_\_\_\_

1 mark

(c) Who is the **oldest boy** in the group?



\_\_\_\_\_

1 mark

(d) A new pupil, Sue Li, joins the group.  
She was born exactly **1 month after** Laura Miller.

What is Sue's date of birth?



\_\_\_\_\_

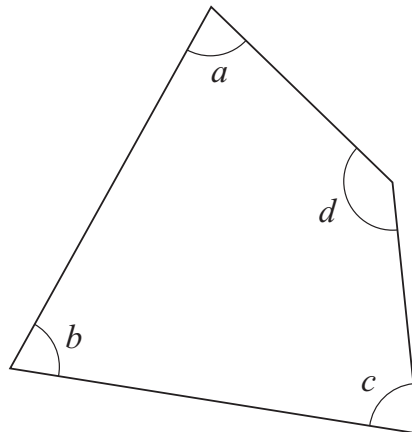
1 mark

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First name	Last name	Male or Female?	Date of birth
Alex	Alcroft	M	20.11.92
Helen	Brooks	F	10.01.93
Huw	Davies	M	21.11.92
Ben	Howard	M	24.06.93
Laura	Miller	F	07.12.92
Amy	Pound	F	08.06.93
Surjit	Sandhu	F	03.01.93
Jade	Smith	F	04.09.92
Mike	Smith	M	26.01.93
Leroy	Taylor	M	06.10.92
Claire	White	F	23.09.92
Louise	Wilson	F	26.02.93



3. (a) Look at this quadrilateral.



Which **angle** is **biggest**? Tick (✓) the correct box below.




Angle *a*

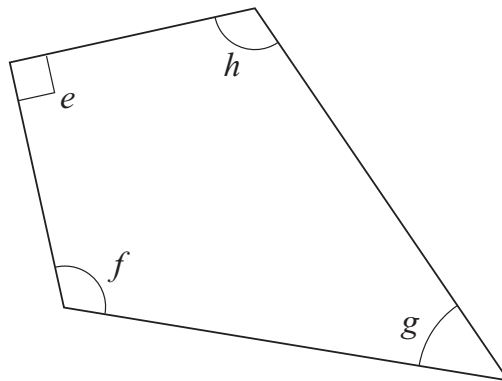
Angle *b*

Angle *c*

Angle *d*

1 mark

(b) Now look at this quadrilateral.



Angle *e* is marked with straight lines.

What does this tell you about the angle?

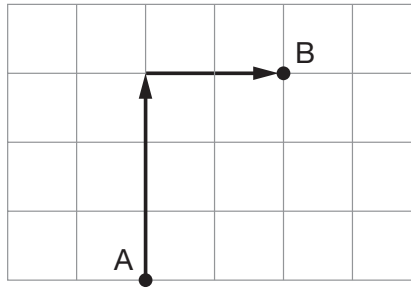


1 mark

4. To move **from A to B**  
on the square grid:

move North 3

then East 2

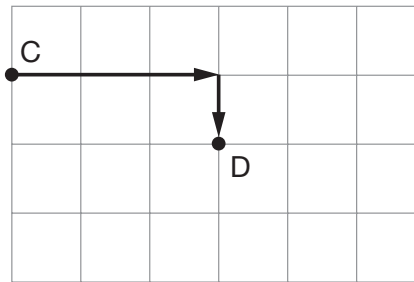


(a) Write the missing direction.

To move **from C to D**  
on the square grid:

move East 3

 then \_\_\_\_\_



\_\_\_\_\_ 1 mark

(b) Write the missing directions.

To move **around the four sides of a square**  
on the square grid:

move West 1

 then \_\_\_\_\_

then \_\_\_\_\_

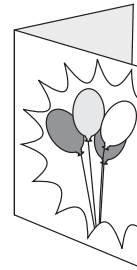
then \_\_\_\_\_

\_\_\_\_\_ 1 mark



5. A shop sells birthday cards.

Each card has a code that shows the price.



Code	Price of card
A	95p
B	£1.25
C	£1.65
D	£1.95
E	£2.35

(a) Karen pays for two cards.

One card has code **A** on it.

The other has code **C**.

Altogether, how much does Karen pay?



1 mark

(b) Tariq pays for two cards.

**Both** cards have code **D** on them.

Tariq pays with a **£10 note**.

How much **change** should he get?



1 mark



(c) Greg pays for two cards.

Altogether he pays **£3.60**

What could the **codes** on Greg's cards be?

There are two different answers. Write them both.



The codes could be \_\_\_\_\_ and \_\_\_\_\_, or

\_\_\_\_\_   
 1 mark

the codes could be \_\_\_\_\_ and \_\_\_\_\_

\_\_\_\_\_   
 1 mark



6. Five people played each other at tennis.

The table shows who **won** each game.

For example, when Bob played Ann, Bob won.

	Ann				
Ann	✕	Bob			
Bob	Bob	✕	Carl		
Carl	Ann	Carl	✕	Dan	
Dan	Ann	Dan	Carl	✕	Ed
Ed	Ann	Bob	Carl	Dan	✕

(a) **Ann** played four games.

How many games did she **win**?



\_\_\_\_\_

1 mark

(b) Write the name of the person who **lost all** their games.



\_\_\_\_\_

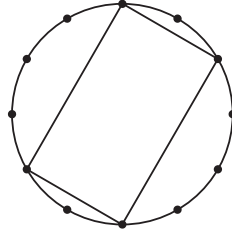
1 mark

(c) Explain why there is a cross (✕) in some of the boxes.

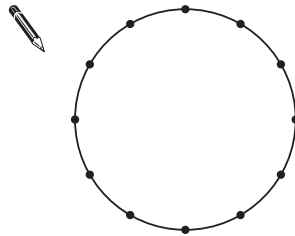


1 mark

7. There are twelve points marked around this circle. The points are equally spaced.  
You can join **4 points** to make a **rectangle**.

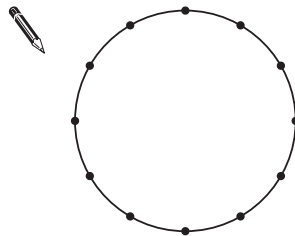


- (a) Join **4 points** to make a **square**.



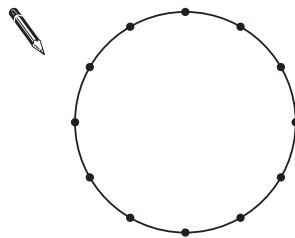
1 mark

- (b) Join **3 points** to make an **equilateral triangle**.



1 mark

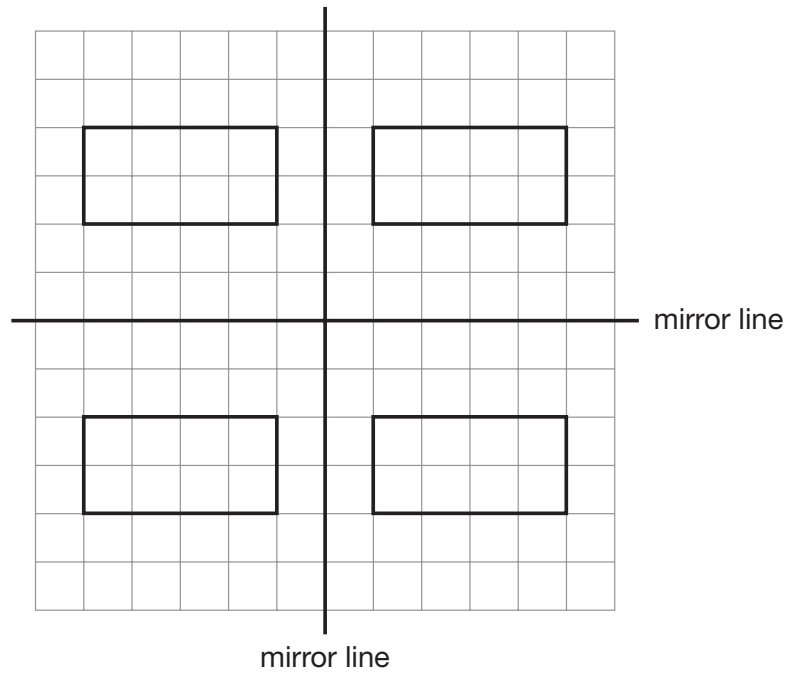
- (c) Join a **different set of 3 points** to make an **isosceles triangle**.



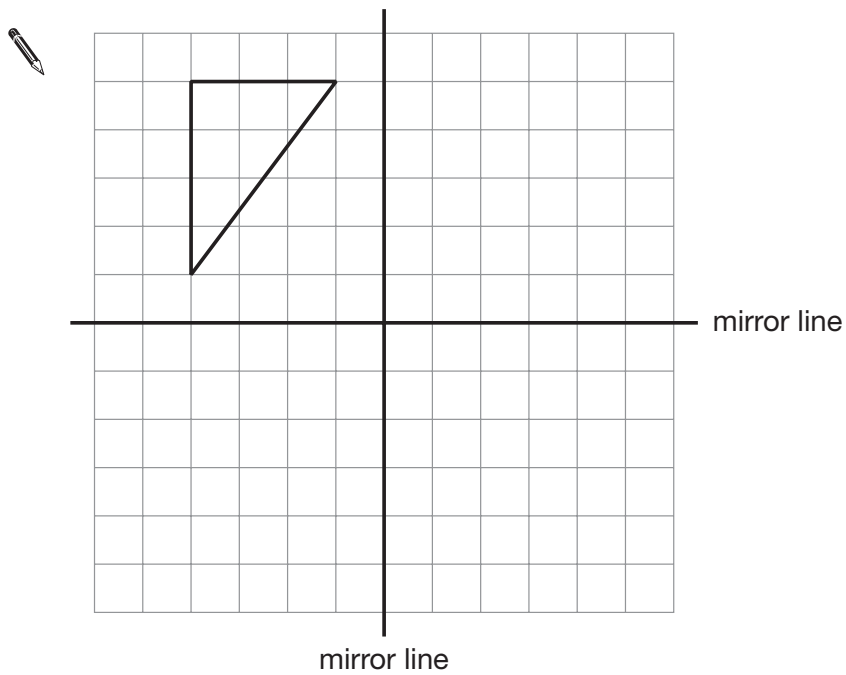
1 mark



8. The square grid shows a rectangle reflected in **two mirror lines**.



On the square grid below, show the **triangle** reflected in the two mirror lines.




\_\_\_\_\_

\_\_\_\_\_


2 marks

9. (a) These rules show how to get from one number to the next in these sequences.


Use the rules to write the next **two** numbers in each sequence.

Rule: <b>Add 8</b>
 4    12    _____    _____

\_\_\_\_\_ 1 mark

Rule: <b>Multiply by 3</b>
 4    12    _____    _____

\_\_\_\_\_ 1 mark


Rule: <b>Divide by 4 then add 11</b>
 4    12    _____    _____

\_\_\_\_\_ 1 mark

(b) A sequence of numbers starts like this:

30      22      18

Could the rule be **Subtract 8**?

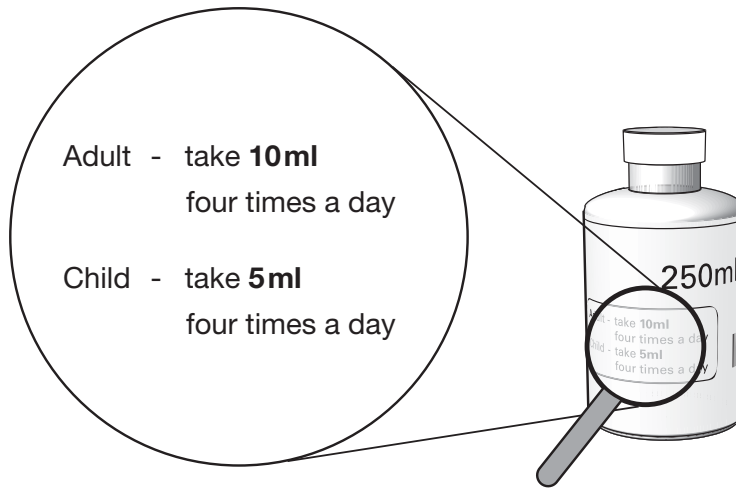
       Yes       No

Explain your answer.



\_\_\_\_\_ 1 mark

10. A bottle contains **250ml** of cough mixture.



**One adult** and **one child** need to take cough mixture  
**4 times a day** every day for **5 days**.

Will there be enough cough mixture in the bottle?

Explain your answer.



2 marks

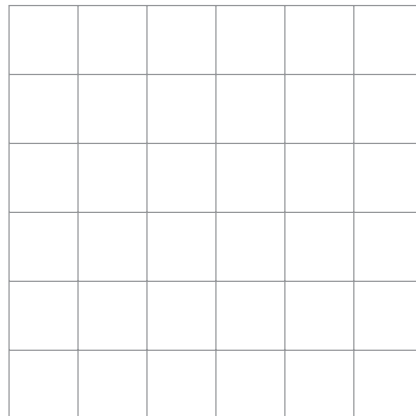
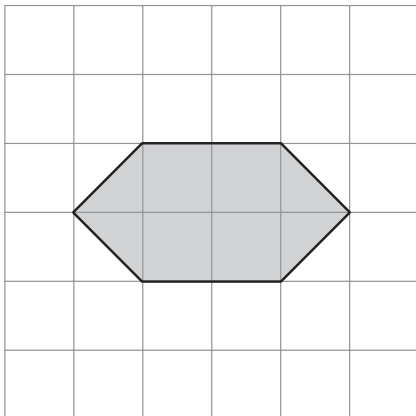
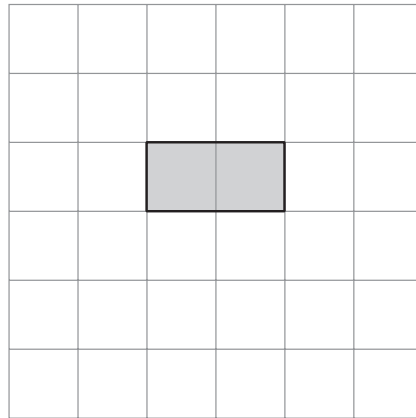
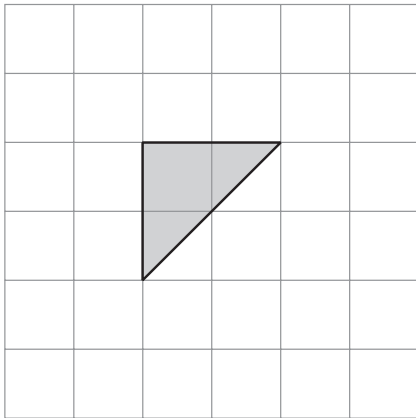
11. The grids in this question are centimetre square grids.

For each shape on the left, draw a **rectangle** that has the **same area**.

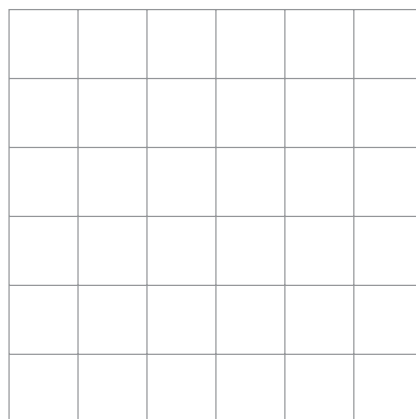
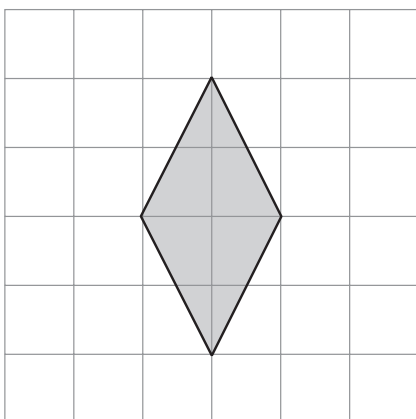
The first one is done for you.

Shape

Rectangle



1 mark



1 mark



12. The table shows the average length of pregnancy for different mammals.

Mammal	Average length of pregnancy
Dolphin	276 days
Horse	337 days
Seal	350 days
Whale	365 days
Camel	406 days
Elephant	640 days

Use the information in the table to answer these questions.

- (a) Which mammal has an average length of pregnancy of **1 year**?



\_\_\_\_\_

1 mark

- (b) Which mammal has an average length of pregnancy of **50 weeks**?



\_\_\_\_\_

1 mark

- (c) A human has an average length of pregnancy of **about 9 months**.

Which other mammal also has an average length of pregnancy of about 9 months?



\_\_\_\_\_

1 mark



13. Write the missing numbers in the boxes.



$$4 \times \square + 20 = 180$$

1 mark

$$4 \times 20 + \square = 180$$

1 mark

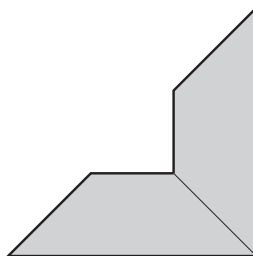
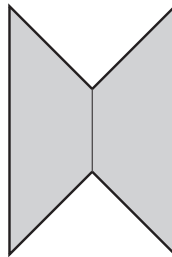
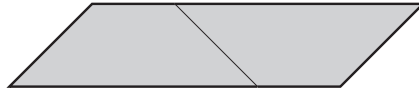
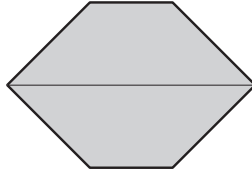
$$4 \times \square - 20 = 180$$

1 mark



14. I use two congruent trapeziums to make the shapes below.

Tick (✓) all the shapes that are **hexagons**.



2 marks

15. The pupils in a class had a sponsored swim.

They collected **£429.24**

(a) How much is £429.24 to the **nearest hundred pounds**?



£

1 mark

(b) How much is £429.24 to the **nearest ten pounds**?



£

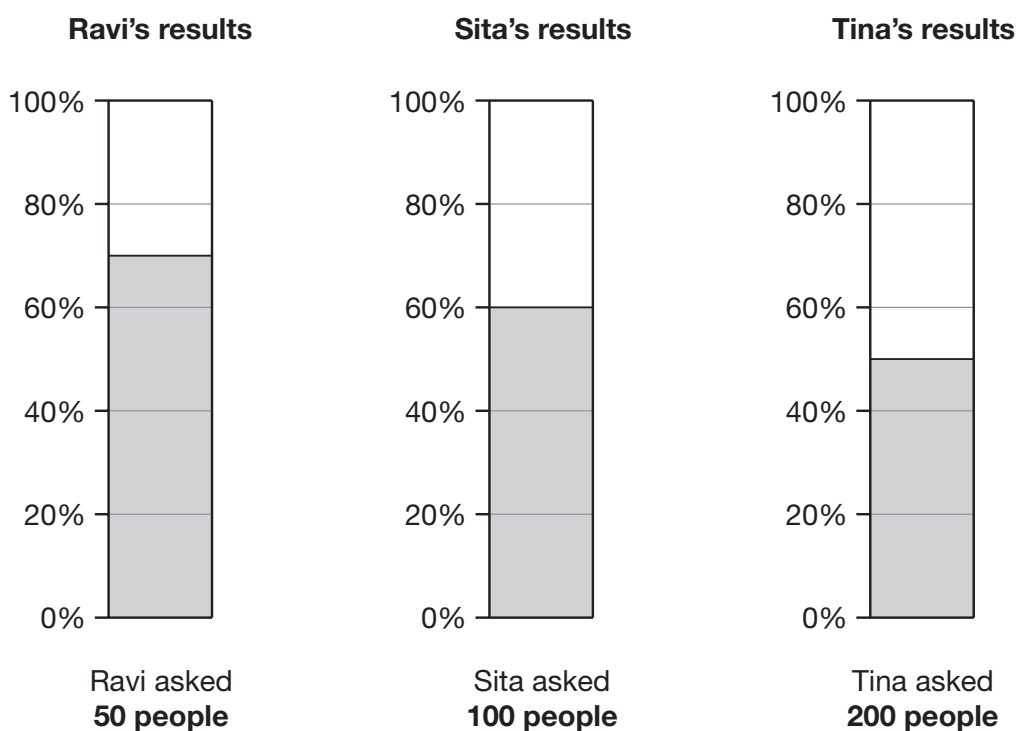
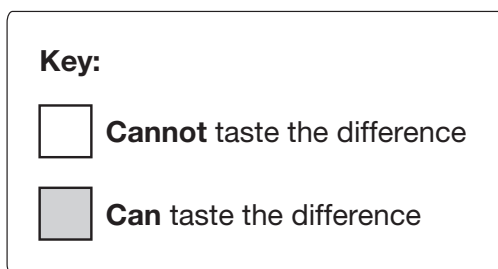
1 mark



16. Wine gums are sweets that are made in different colours.

Pupils tested whether people can taste the difference between black wine gums and other wine gums.

The percentage bar charts show three pupils' results.



(a) Complete the table.

	Number of people who were tested	Number of people who <b>can</b> taste the difference	Number of people who <b>cannot</b> taste the difference
Ravi	50		
Sita	100		
Tina	200		

3 marks

(b) Explain why **Tina's** results are likely to be **more reliable** than Ravi's or Sita's.

1 mark

17. Look at the three expressions below.

$$8 + k$$

$$3k$$

$$k^2$$

When  $k = 10$ , what is the value of each expression?



$8 + k =$  \_\_\_\_\_       $3k =$  \_\_\_\_\_       $k^2 =$  \_\_\_\_\_

2 marks



18. I buy **12 packets** of cat food in a box.

The table shows the different varieties in the box.

Variety	Number of packets
Cod	3
Salmon	3
Trout	3
Tuna	3

- (a) I am going to take out a packet at random from the box.

What is the **probability** that it will be **cod**?



1 mark

- (b) My cat eats **all** the packets of **cod**.

I am going to take out a packet at random from the ones left in the box.

What is the **probability** that it will be **salmon**?



1 mark

- (c) A different type of cat food has **10 packets** in a box.

The probability that the variety is chicken is **0.7**

What is the probability that the variety is **not** chicken?



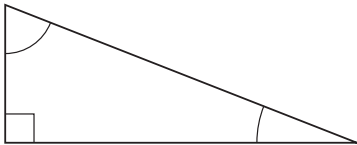
1 mark

19. Some statements in the table are true. Some are false.

Beside each statement, write **true** or **false**.

For **true** statements you must **draw an example**.

The first one is done for you.

Statement	Write <b>true</b> or <b>false</b> . If true, draw an example.
Some triangles have one right angle and two acute angles.	<p style="text-align: center;">true</p> 
Some triangles have three right angles.	
Some triangles have three acute angles.	
Some triangles have one obtuse angle and two acute angles.	
Some triangles have two obtuse angles and one acute angle.	

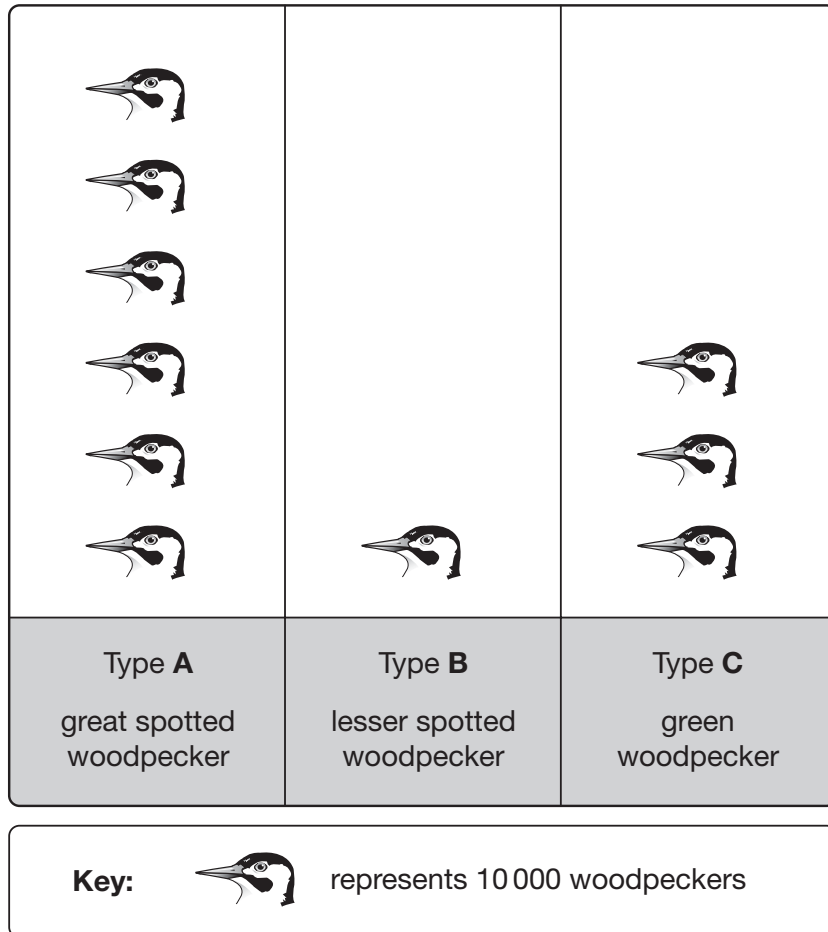


3 marks




20. Three different types of woodpecker live in Britain.

The pictogram shows information about the numbers of each type.



(a) Complete the table below to show the **percentages** of each type of woodpecker.

	Type A	Type B	Type C
	<p>_____ %</p>	<p>_____ %</p>	<p>_____ %</p>

1 mark



(b) The ratio of **type A : type B** woodpeckers is 6 : 1

What is the ratio of **type B : type C** woodpeckers?



\_\_\_\_\_ : \_\_\_\_\_

1 mark

**21.** Write the missing numbers in the boxes.



120mm is the same as

cm

1 mark

120cm is the same as

m

1 mark

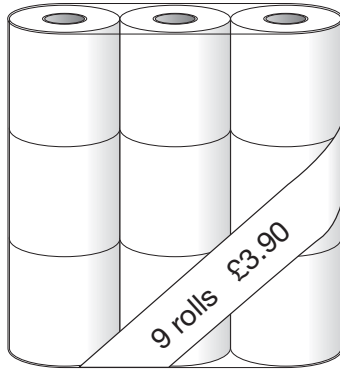
120m is the same as

km

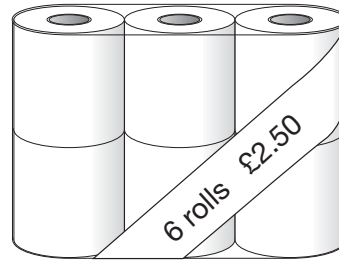
1 mark



22. A shop sells toilet rolls.  
You can buy them in packs of 9 or packs of 6



Pack of 9 toilet rolls  
**£3.90**



Pack of 6 toilet rolls  
**£2.50**

Which pack gives you better value for money?

You **must** show your working.



\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
3 marks

**END OF TEST**



