Ma

KEY STAGE 2

LEVEL 6

2014

Mathematics tests

Paper 2

Calculator allowed

First name						
Middle name						
Last name						
Date of birth	Day		Month		Year	
School name						
DfE number						

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Please do not write on this page.

Instructions

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

Work as quickly and as carefully as you can.

You have **30 minutes** for this test.

If you cannot do one of the questions, **go on to the next one**.

You can come back to it later, if you have time.

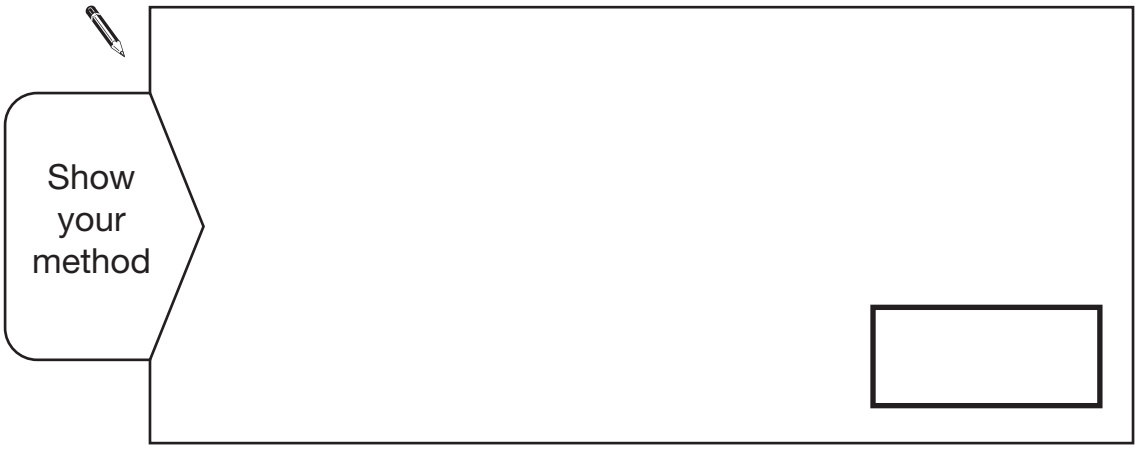
If you finish before the end, **go back and check your work**.

Follow the instructions for each question carefully.

This shows where you need to put the answer.

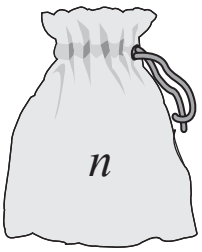
If you need to do working out, you can use any space on a page.

Some questions have an answer box like this:



For these questions you may get a mark for showing your method.

1 (a) There are n counters in Alfie's bag.



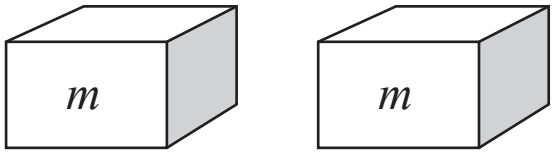
Alfie puts **3** more counters in the bag.

Write an expression for the number of counters that are in the bag now.

1 mark

(b) Megan has two boxes.

There are m counters in each box.

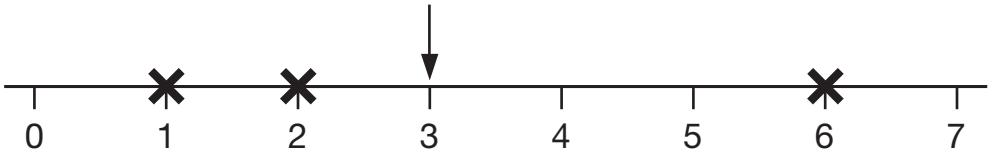


She puts all her counters together in a pile, then removes **5** of them.

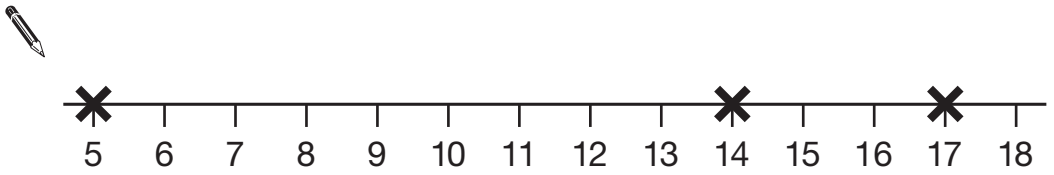
Write an expression for the number of counters that are in the pile now.

1 mark

2 The arrow below points to the **mean** of the three numbers shown by crosses.



(a) Draw an arrow that points to the mean of the three numbers shown below.

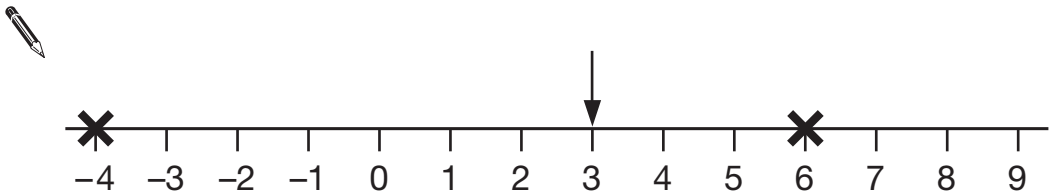


1 mark

(b) The arrow below points to the mean of three numbers.

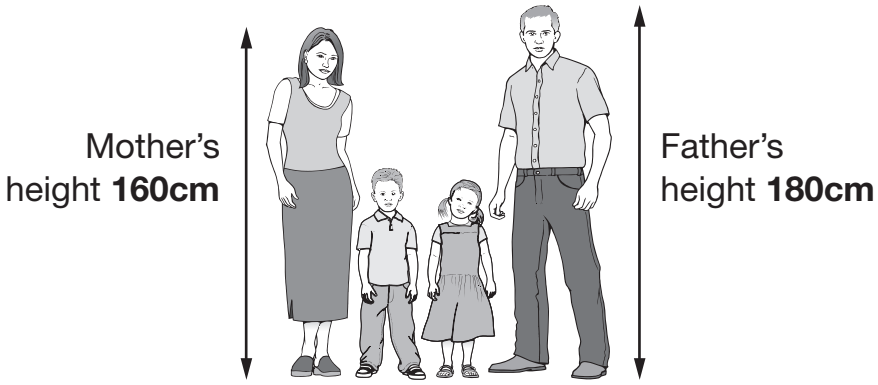
One of the numbers is missing.

Draw a cross to show the position of the missing number.



1 mark

3 Here are Alfie and Emma with their parents.



You can use the table below to predict how tall children will be when they are adults.

There is one formula for boys and a different one for girls:

Boy's predicted height	**Girl's predicted height**
0.4 (*x* + *y*) + 42	**0.4 (*x* + *y*) + 29**
x is the father's height in cm. *y* is the mother's height in cm.	

(a) Calculate the predicted height of Alfie when he is an adult.

cm

1 mark

(b) When Emma is an adult, she is predicted to be taller than her mother.

How much taller?

cm

1 mark

4 Two numbers are in the ratio **4 : 5**

One of the numbers is **60**

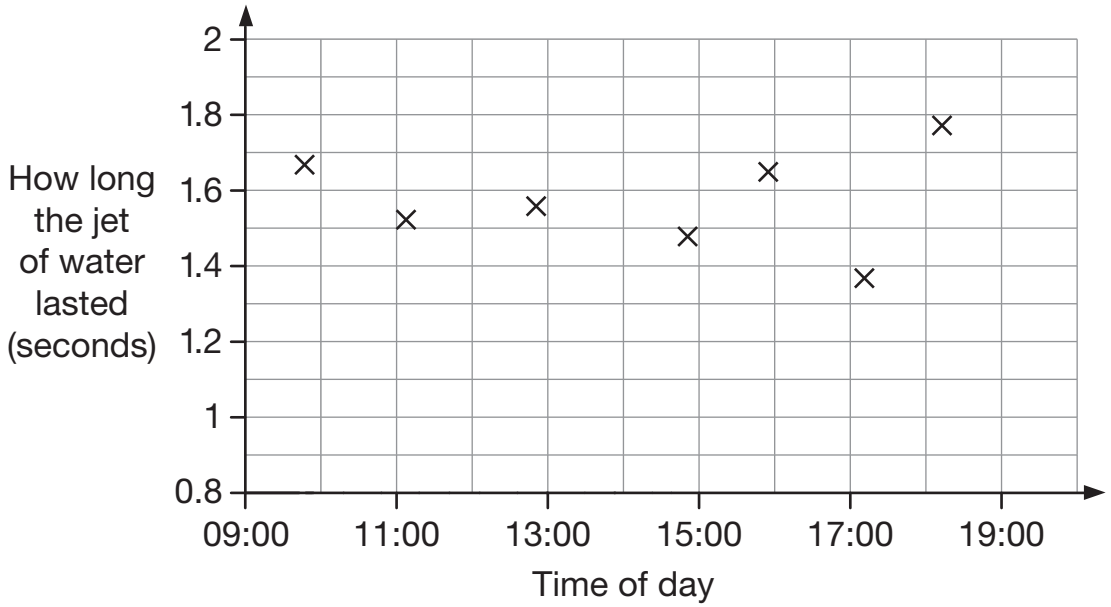
There are two possible values for the other number.

What are the two possible values?

2 marks

5 A geyser is a jet of hot water that comes from below the Earth's surface.

The graph shows information about the times when the jet of hot water appeared.



(a) What was the greatest time between two jets of water?

hours

1 mark

(b) Write in the missing information.

The jets of water lasted for different lengths of time.

The range of these times was about _____ seconds.

1 mark

6 The cost to hire a boat on a lake is worked out using the information below.

Cost to hire a boat:
£4.50 per boat
and then
£3.50 per hour

(a) Four friends hire a boat for five hours.

They share the cost equally.

How much does **each** person pay?

Show your method

£

2 marks

(b) Chen's family hires a boat and pays a total of £15

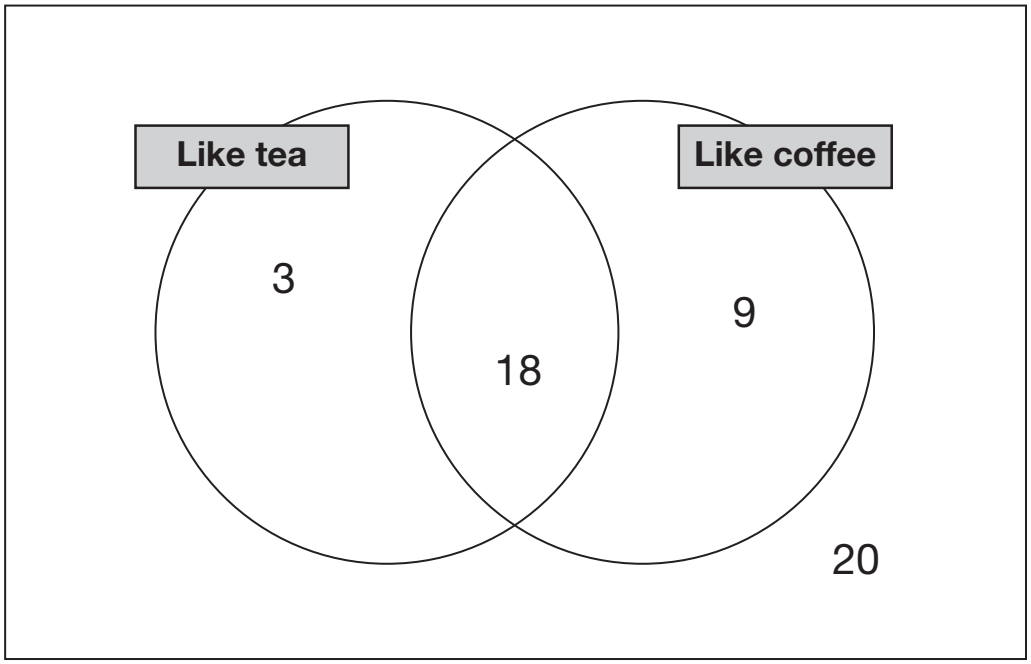
How many hours did they have the boat for?

hours

1 mark

7 In a survey people were asked if they like tea and coffee.

The results are in this Venn diagram.



(a) What **percentage** of people in the survey like **both** tea and coffee?

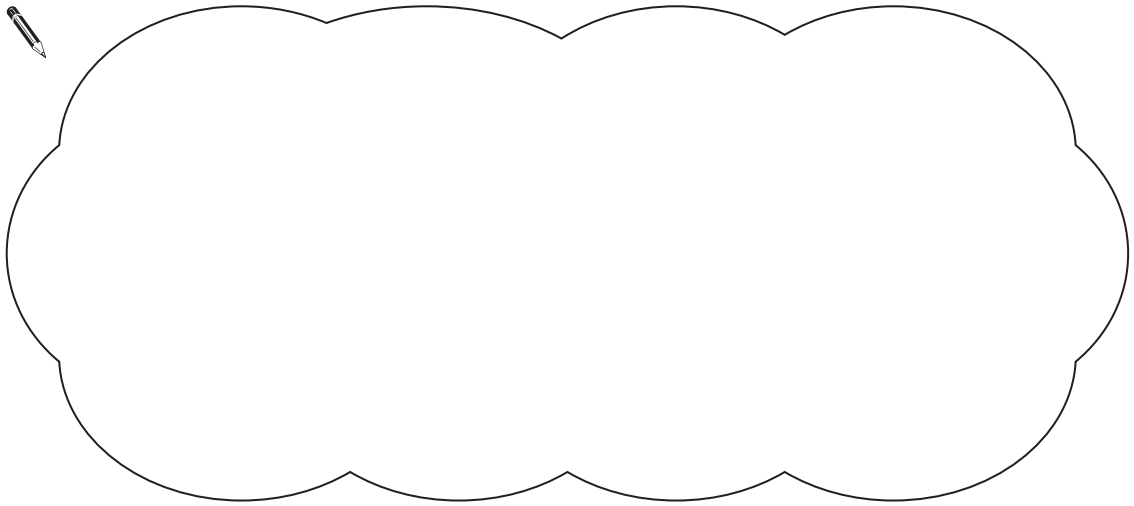
% 1 mark

(b) What **percentage** of people in the survey do **not** like coffee?

% 1 mark

8 Anna says $\frac{4}{7}$ is greater than $\frac{5}{9}$

Explain why Anna is correct.



1 mark

9 Two numbers have a **difference of 1**

They multiply together to make 9

Megan makes this spreadsheet to help find what the two numbers might be.

first number	second number	multiply
2	3	6
2.1	3.1	6.51
2.2	3.2	7.04
2.3	3.3	7.59
2.4	3.4	8.16
2.5	3.5	8.75
2.6	3.6	9.36

Megan says,

'From my spreadsheet, the best estimate for the two numbers is 2.5 and 3.5'

Chen says,

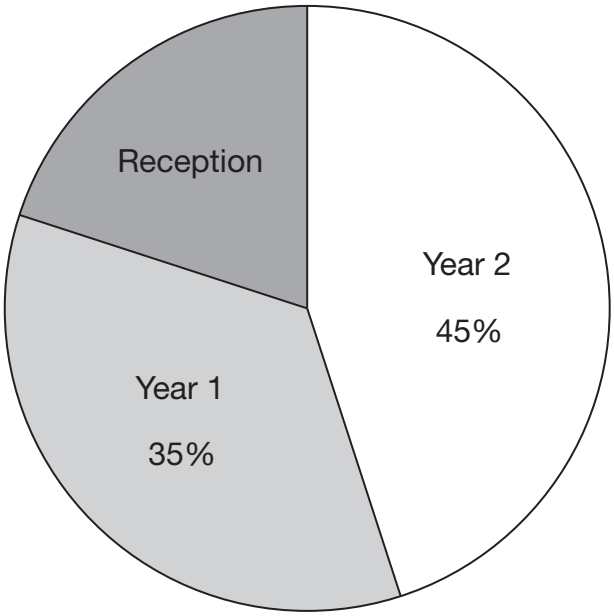
'I can work out a better estimate for the two numbers.'

Write what Chen's estimate could be.

☐ and ☐

2 marks

10 The pie chart shows the Year groups of children at Woodland Infant School.



There are **56** children in **Year 1**

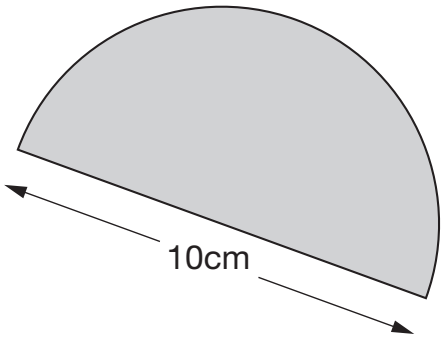
How many children are there in Reception?

Show your method

children

2 marks

11 This shape is a semi-circle.



Not actual size

What is the **perimeter** of the shape?

Use this formula:

the circumference of a circle is **3.14 × diameter**

Show your method

cm

2 marks

12

How many **days** old will the baby be when she has lived for **one million seconds**?

Show your method

days

2 marks

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