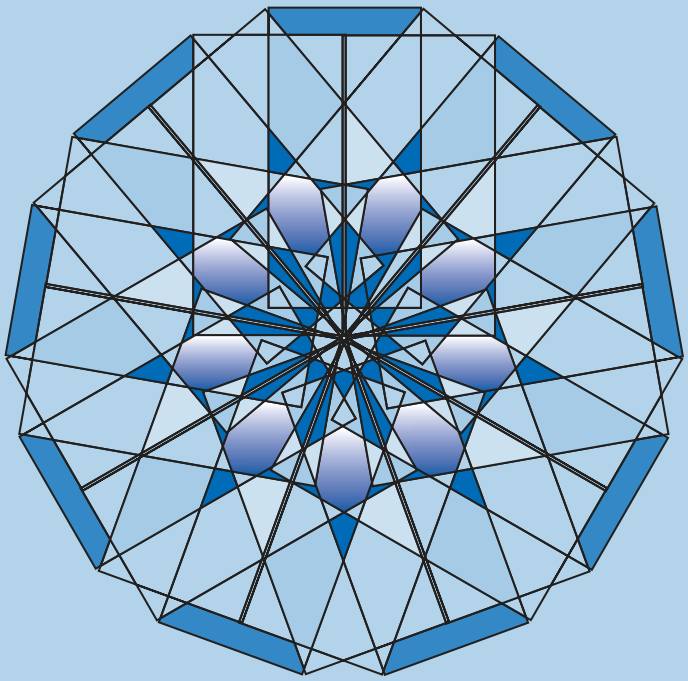
MATHEMATICS

KEY STAGE 2 2002

TEST C | LEVEL 6

CALCULATOR ALLOWED

PAGE	MARKS
5	
7	
9	
11	
13	
15	
TOTAL	



First Name

Last Name

School

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.

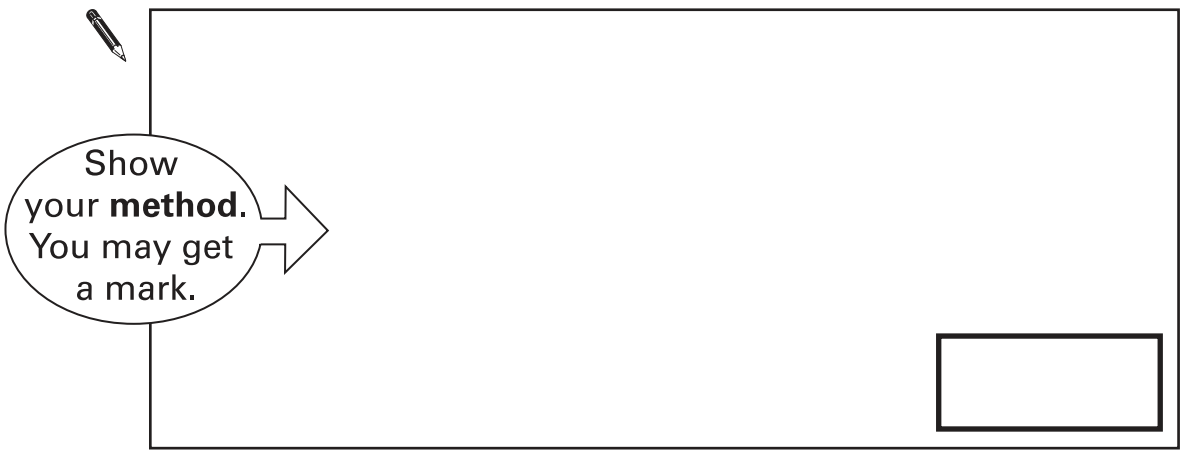
If you finish before the end, **go back and check your work**.

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:

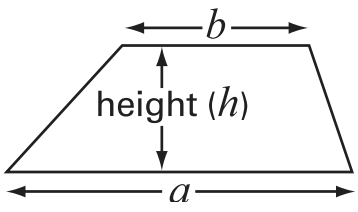


For these questions you may get a mark for showing your method.

Formulae

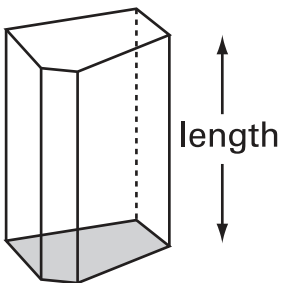
You might need to use these formulae in this test.

Trapezium



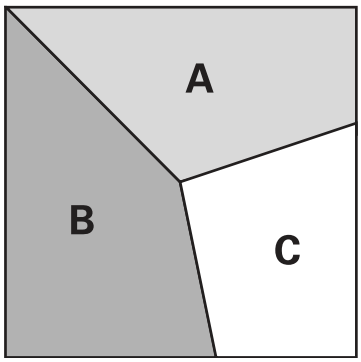
Area = $\frac{1}{2}(a + b)h$

Prism



Volume = area of cross-section × length

1 This square is divided into three parts.



Part **A** is $\frac{1}{3}$ of the area of the square.

Part **B** is $\frac{2}{5}$ of the area of the square.

What fraction of the area of the square is part **C**?

Show your **method**. You may get a mark.

1

2 marks

2 Paulo makes a sequence of numbers.

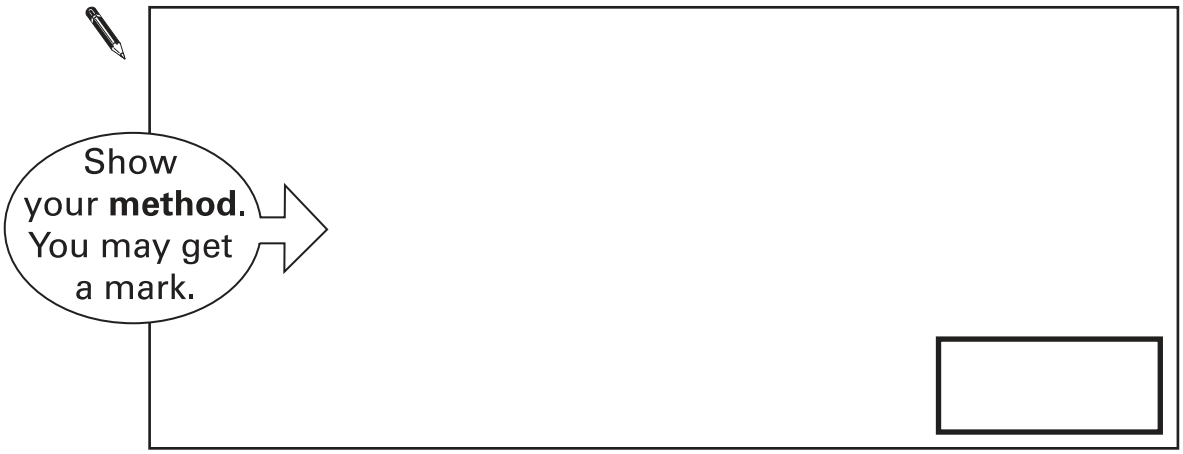
He chooses a starting number and then subtracts equal amounts each time.

The **third number** in his sequence is **45**

The **tenth number** is **–32**

		45							–32

What is the **first** number in the sequence?



2

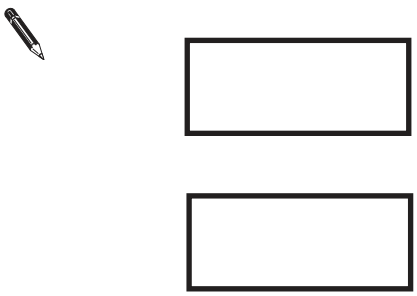
2 marks

3 Two numbers are in the **ratio 3 : 2**

One of the numbers is **0.6**

There are two possible answers for the other number.

What are the two possible answers?



3

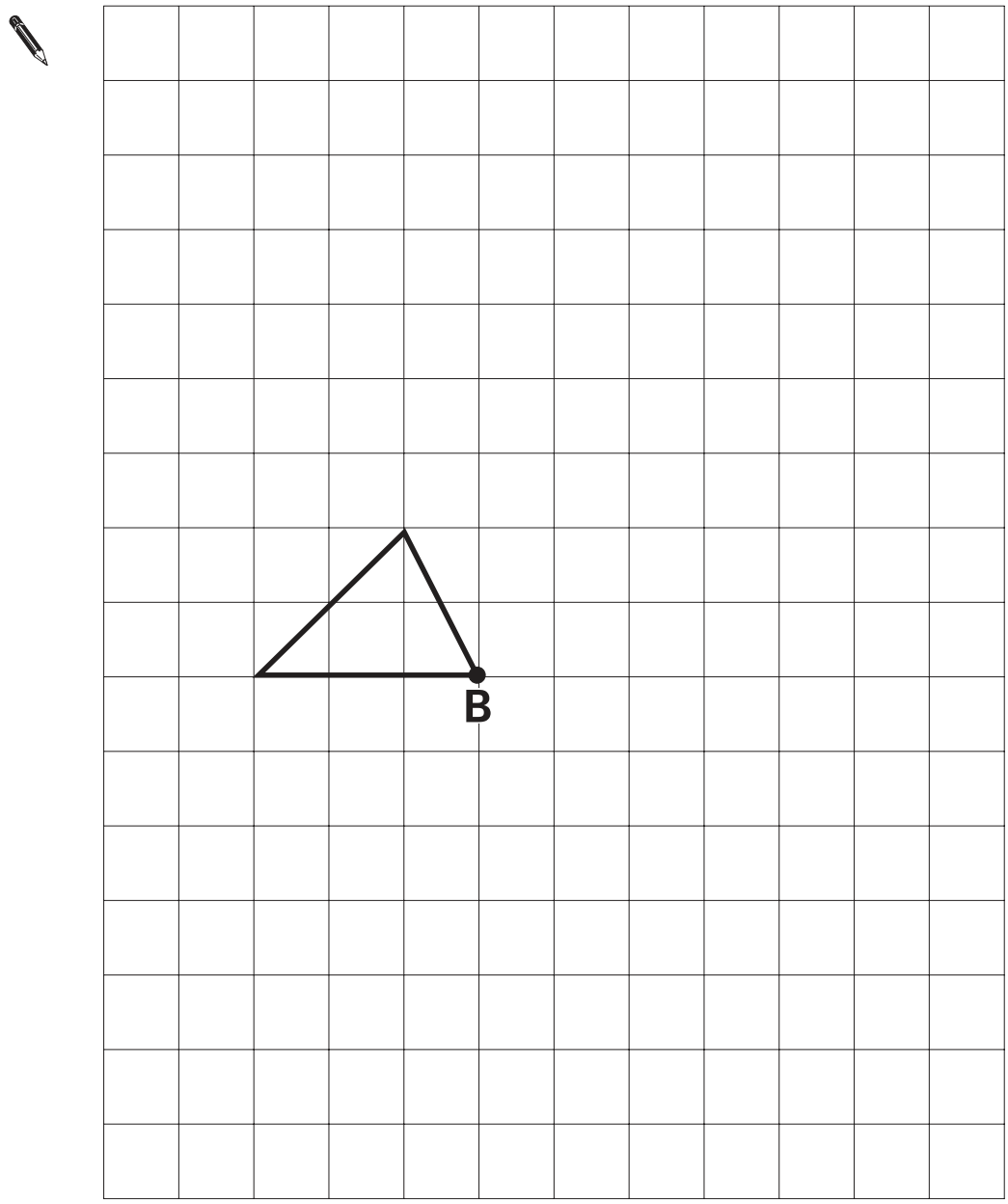
2 marks

Total

4 Here is a shape on a square grid.

The shape is rotated **90° clockwise** about point B
and enlarged by a **scale factor of 2**

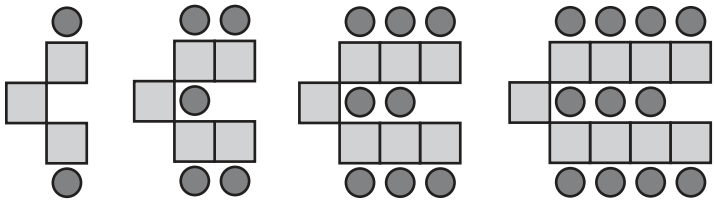
Use a ruler to draw the enlarged shape in its new position.



4

2 marks

5 Here is a sequence of shapes made from squares and circles.



shape number (n)	1	2	3	4
number of circles (c)	2	5	8	11
number of squares (s)	3	5	7	9

The sequence continues in the same way.

The formula for the **number of circles (c)** in **shape number (n)** is

$$c = 3n - 1$$

Use the formula to work out the **shape number** which has **104 circles**.

Show your **method**. You may get a mark.

5a

2 marks

Write the formula for the **number of squares (s)** in **shape number (n)**.

S = ...

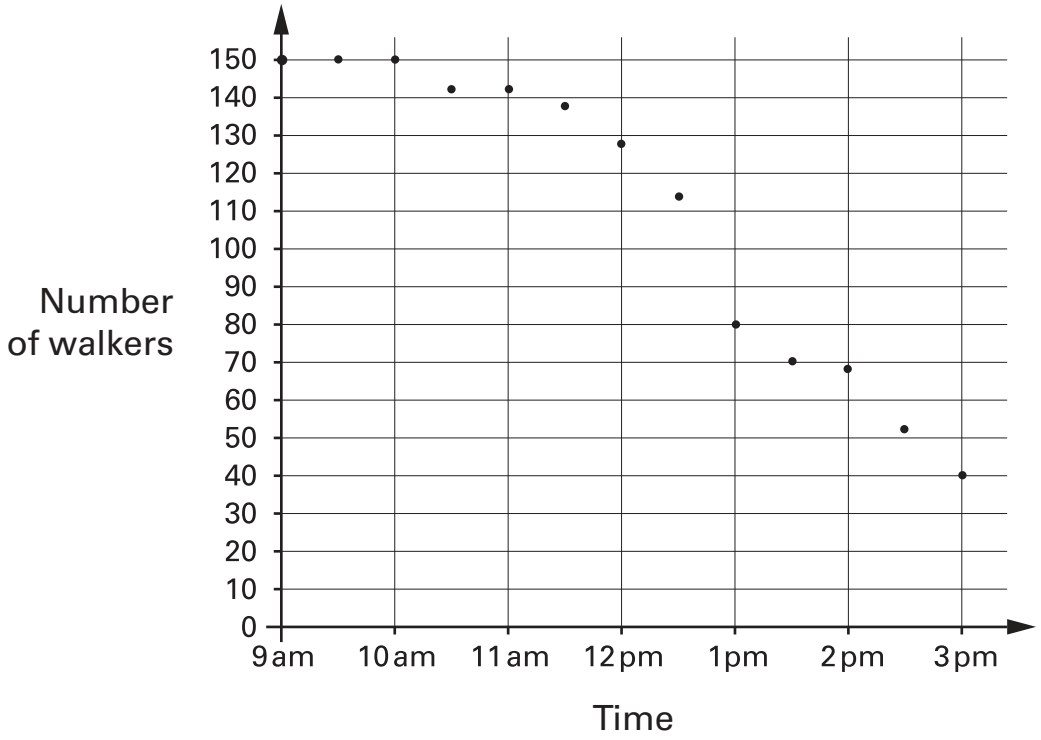
5b

1 mark

Total

6 **150 people** take part in a walk.

This chart shows the number of people still walking at different times.



Use the chart to estimate the **time** when **two-thirds of the people** are still on the walk.

6a

1 mark

What **percentage** of the people who started are **still on the walk at 3 pm**?

Show your **method**. You may get a mark.

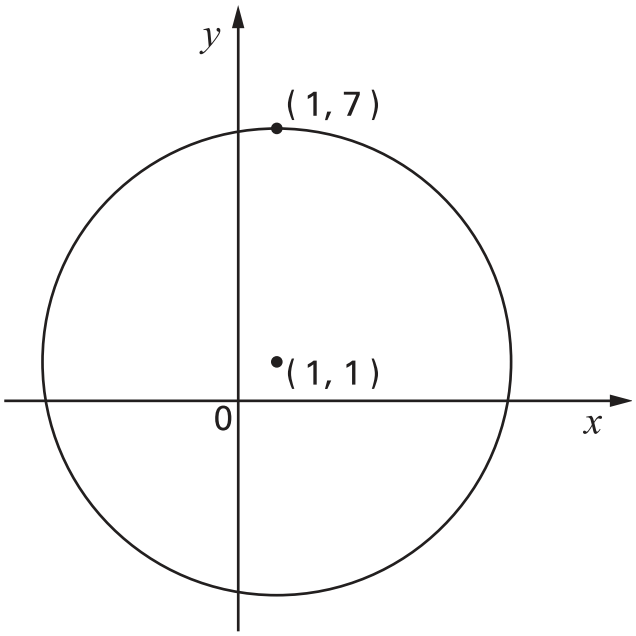
%

6b

2 marks

7 Here is a circle with its **centre** at the point **(1, 1)**

The point **(1, 7)** is on the circumference of the circle.



For each of these points, put a tick (✓) to show if it is **inside** the circle, **on** the circle or **outside** the circle.

One has been done for you.

	inside the circle	**on** the circle	**outside** the circle
(3, 7)			✓
(7, 1)			
(1, –7)			
(–2, –2)			

7

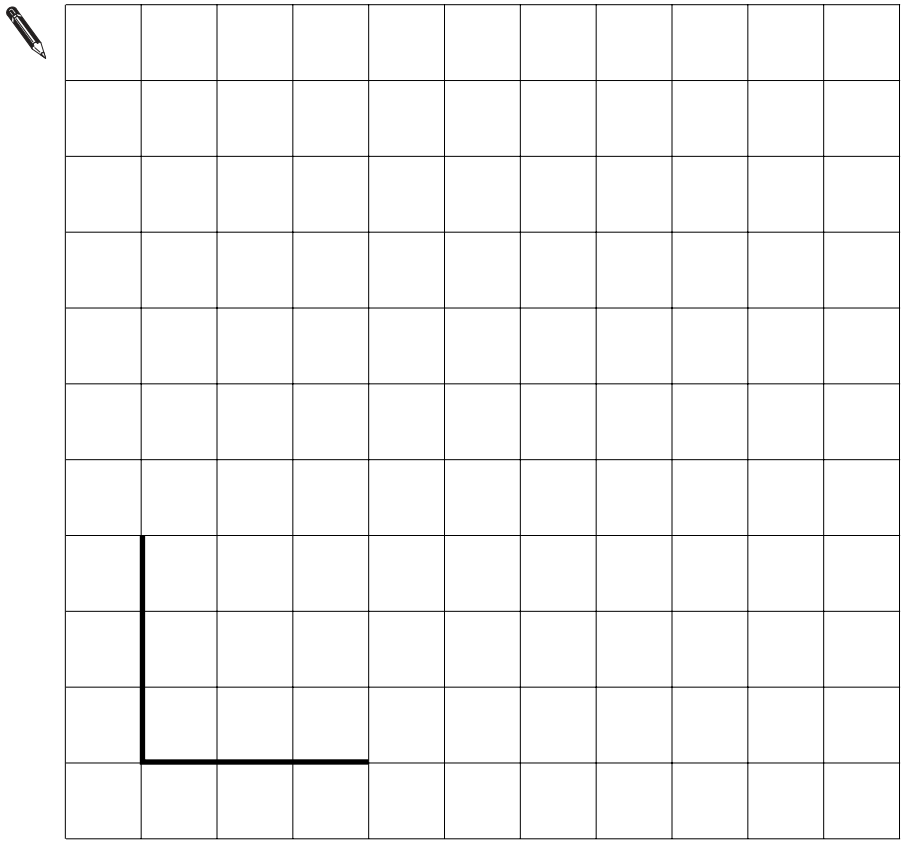
2 marks

Total

8 Here is a centimetre grid.

Draw **two** more lines to make a **quadrilateral** with an area of **18cm^2**

Use a ruler.

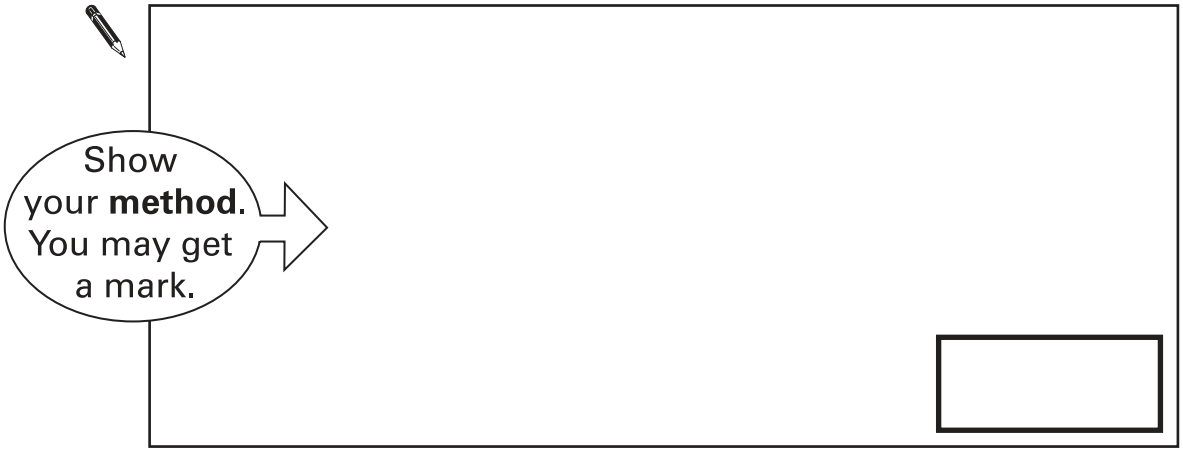


8

1 mark

9 Find the value of ***t*** in this equation.

$$33 - 8t = 15$$



9

2 marks

10 Circle the two decimals which are **closest in value** to each other.

0.9 0.09 0.99 0.1 0.01

10

1 mark

Total

11

In Class 6, **80%** of the children like crisps.

75% of the children **who like crisps** also like chocolate.

In Class 6, what percentage of the children like **both** crisps and chocolate?

Show your **method**. You may get a mark.

%

11

2 marks

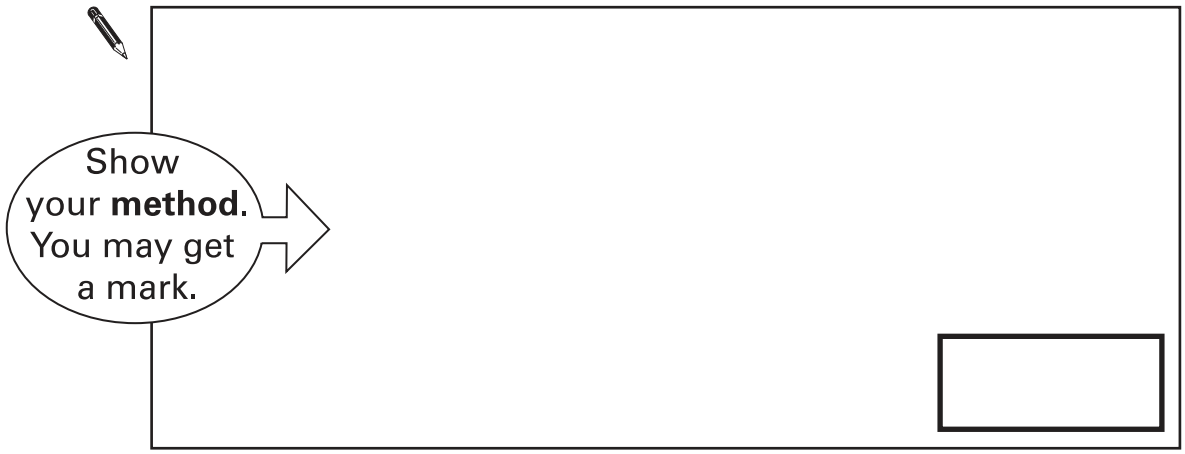
12 Lili and Julian each start with the **same** number.

Lili works out **half of the number**.

Julian works out **three-quarters of the number**.

The **sum** of their answers is **275**

What was the number they started with?



12

2 marks

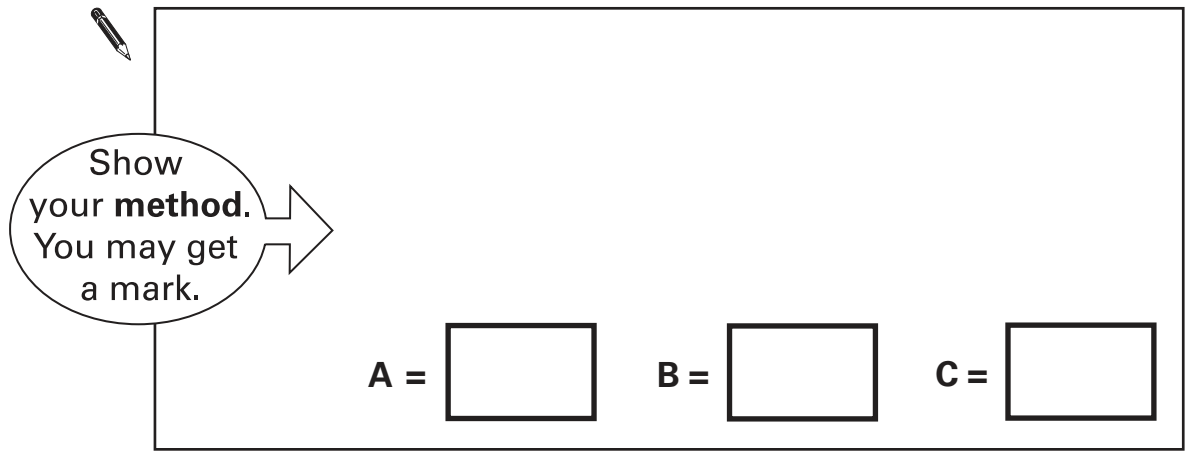
13 A, B and C stand for three different numbers.

The mean of A and B is 40

The mean of B and C is 35

A + B + C = 100

Calculate the values of **A**, **B** and **C**.

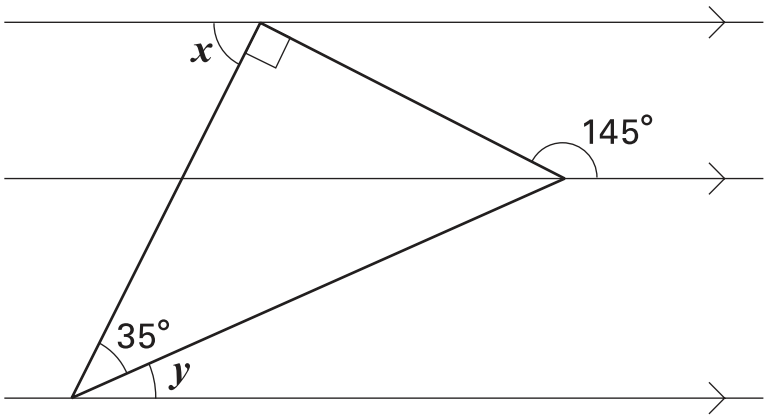


13

2 marks

Total

14 The diagram shows a right-angled triangle and three parallel lines.



Not to scale

Calculate the size of angle x and angle y

Do **not** use a protractor (angle measurer).

$x =$ ° 14a 1 mark

$y =$ ° 14b 1 mark

15 Draw a line from each of the expressions on the left to an equivalent expression on the right.

$(w + 5) + (w - 7)$	12
	$w + 12$
	-2
$(w + 5) - (w + 7)$	$2w + 12$
	$w - 2$
	$2w - 2$

15a
1 mark

15b
1 mark

Total

QCA key stage 2 team, 83 Piccadilly, London W1J 8QA

Order refs:
QCA/02/865 (pupil pack)
QCA/02/858 (mark schemes pack)