

Pack B

Practice National Curriculum Test

Key stage 2

Mathematics

Paper 2: reasoning

First name

Middle name

Last name

Date of birth

Day

Month

Year

School name



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Please do not write on this page.

Instructions

You **must not use a calculator** to answer any questions in this test.

Questions and answers

You have **40 minutes** to complete this test.

Follow the instructions for each question.

Work as quickly and as carefully as you can.

If you need to do working out, you can use the space around the question.

Some questions have a method box like this:

Show your method

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

If you cannot do a question, **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.**

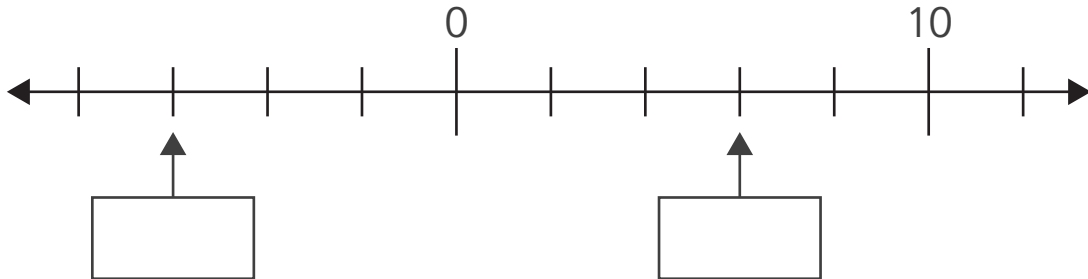
Marks

The number under each box at the side of the page tells you the number of marks available for each question.

1

Here is part of a number line.

Write the missing numbers in the boxes.



1 mark

2

Books are sold in boxes of 8.

There are 30 children in Year 6. Each child needs 1 book.

How many boxes must they buy?

1 mark

Bookmarks are sold in packs of 12.

Year 6 buy 3 packs.

How many bookmarks will they have left over?

1 mark



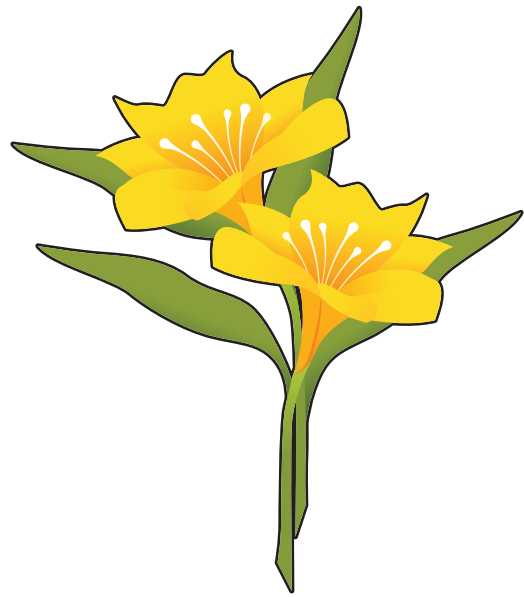
3 Amy buys one bunch of sunflowers and one bunch of daffodils.

She pays with a £5 note.



sunflowers

£1.45



daffodils

£1.20

How much change does Amy get?

Show
your
method

£



1 mark

4 Shen is working out how long he spends on homework every week.

From Monday to Friday, he does homework from 7:30am to 8:00am and from 3:50pm to 4:45pm.

He does no homework at the weekend.

What is the total time Shen spends on his homework every week?

Show
your
method

hours

minutes

2 marks

5

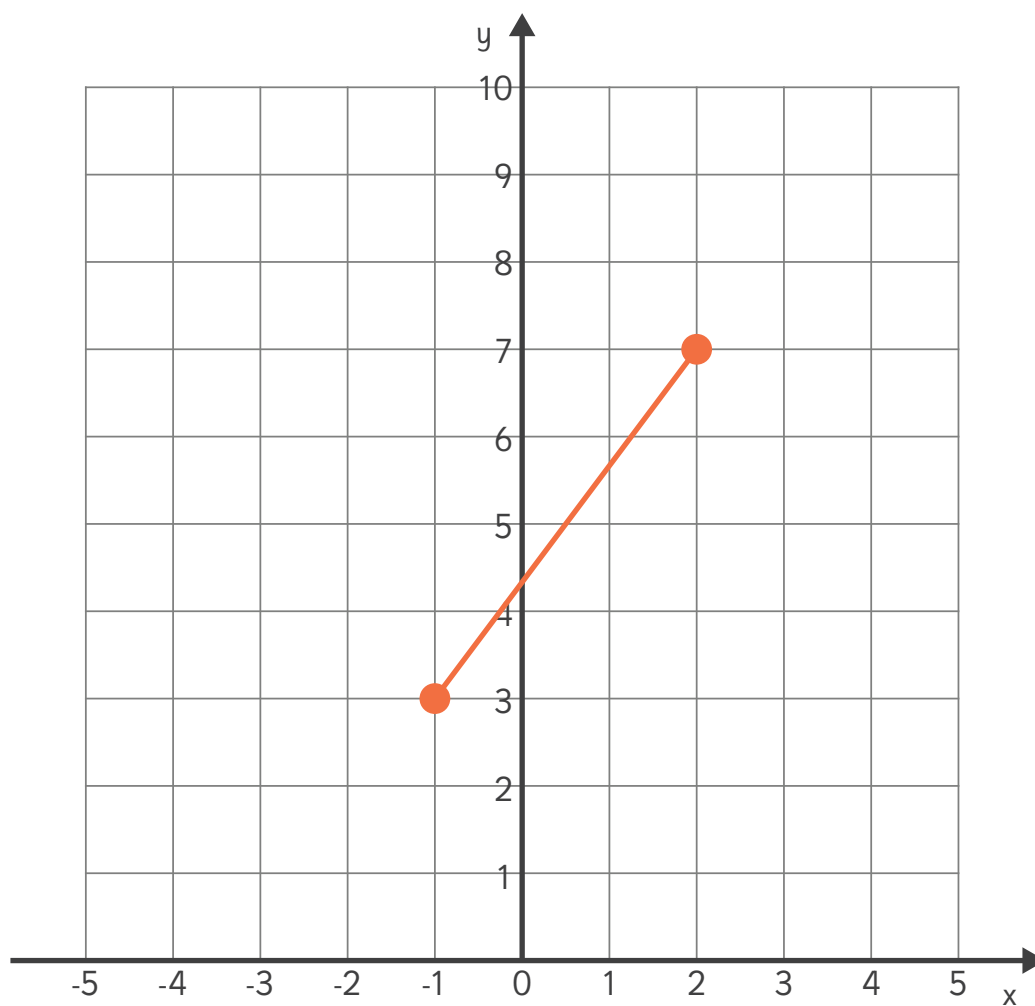
The vertices of a quadrilateral have these coordinates.

(2, 7)**(-1, 3)****(-4, 7)****(-1, 9)**

One side of the quadrilateral has been drawn on the grid.

Complete the quadrilateral.

Use a ruler.



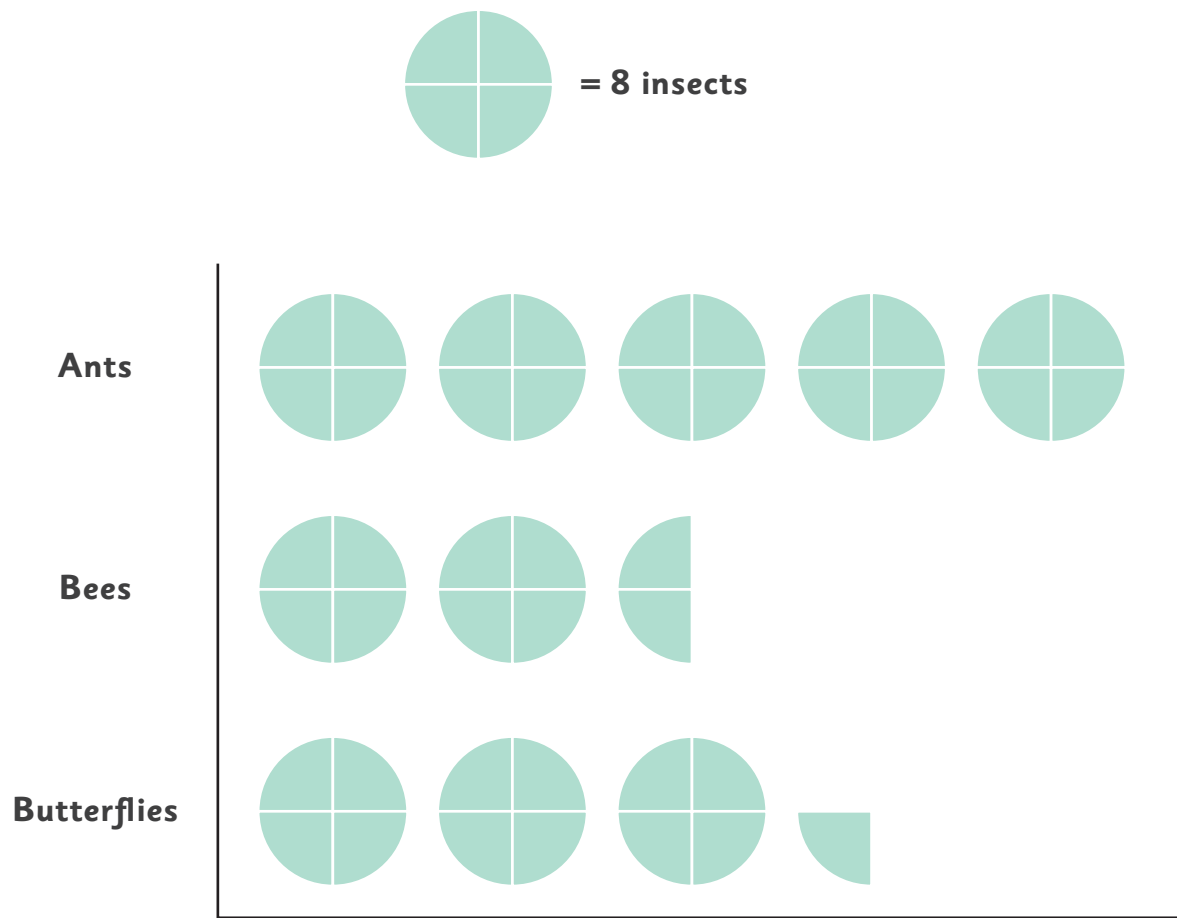
1 mark



6

Inaya is looking for insects in her garden.

She makes a pictogram to show the different insects she found.



How many more butterflies did she see than bees?

☐

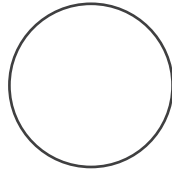
1 mark



7

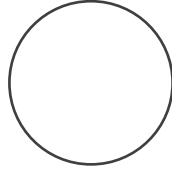
Write the symbol $<$, $>$ or $=$ in each box to make the statements correct.

4×8



$35 - 5$

$48 \div 8$



$3 + 3$



1 mark

8

Here is part of a number sequence.

The numbers decrease by the same amount each time.

250

215

180

145

110

Circle **all** the numbers below that would appear in the sequence.

-30

75

10

40

95



1 mark



9

Tick the numbers that round to **three million** when rounded to the nearest million.

3,104,251

☐

2,711,150

☐

2,116,000

☐

3,365,210

☐

3,901,000

☐☐

1 mark

10

Write the number that is **ten thousand more** than 490,321?

☐

1 mark

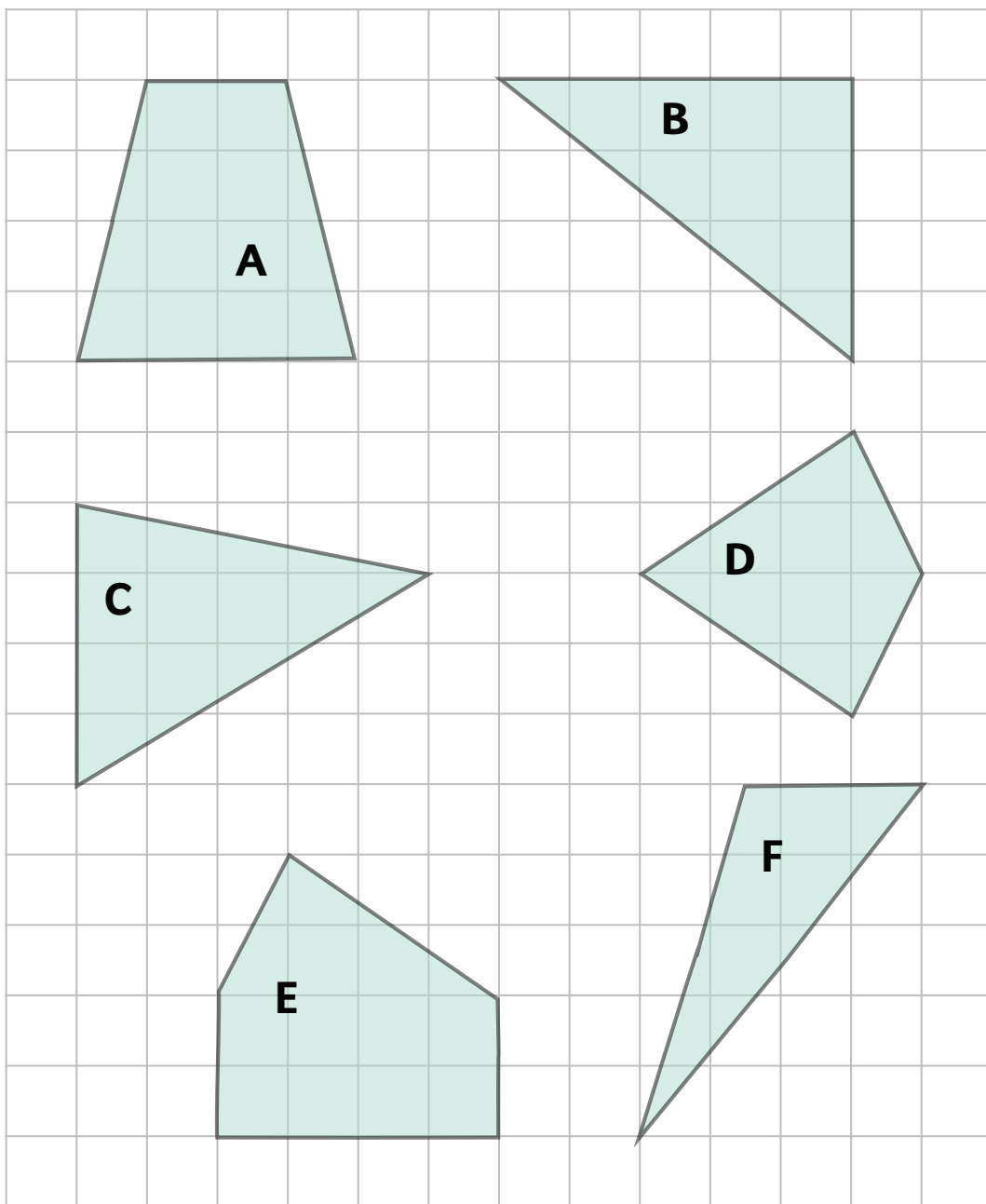
Write the number that is **one thousand less** than 490,321?

☐

1 mark

11

Here are some shapes drawn on a square grid.



Write the letters of two shapes which have a line of symmetry.

_____ and _____



1 mark



12

Circle the two fractions below that are **equivalent**.

$$\frac{1}{2}$$

$$\frac{2}{3}$$

$$\frac{4}{12}$$

$$\frac{3}{4}$$

$$\frac{1}{3}$$

$$\frac{5}{12}$$

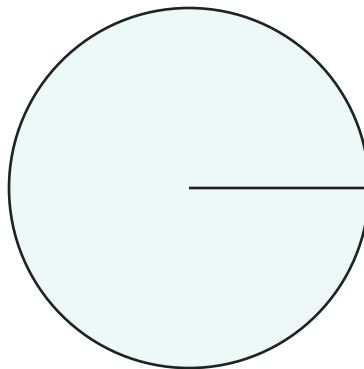
☐

1 mark

13

This diagram below shows a circle.

The distance from the centre to the edge of the circle is 14cm.



What is the diameter of the circle?

cm

☐

1 mark



14

At a restaurant, 8 pizzas cost £128.

Each pizza costs the same.

How much would 11 pizzas cost?

Show
your
method

£

☐

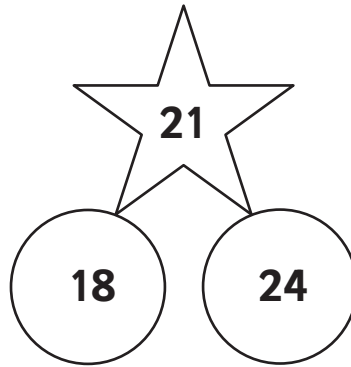
1 mark



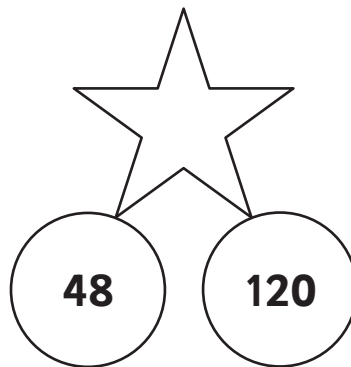
15

The diagram below follows the rule:

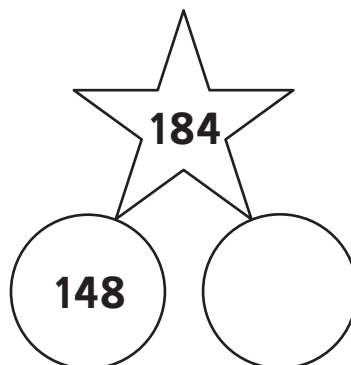
“The star is found by halving the sum of the circles.”



Use the information above to fill in the missing numbers.



1 mark



1 mark



16

Here is a rule for the cost of a taxi journey.

Cost = 70p for each mile + £4.50

A journey is 5 miles.

How much does it cost?

£

1 mark

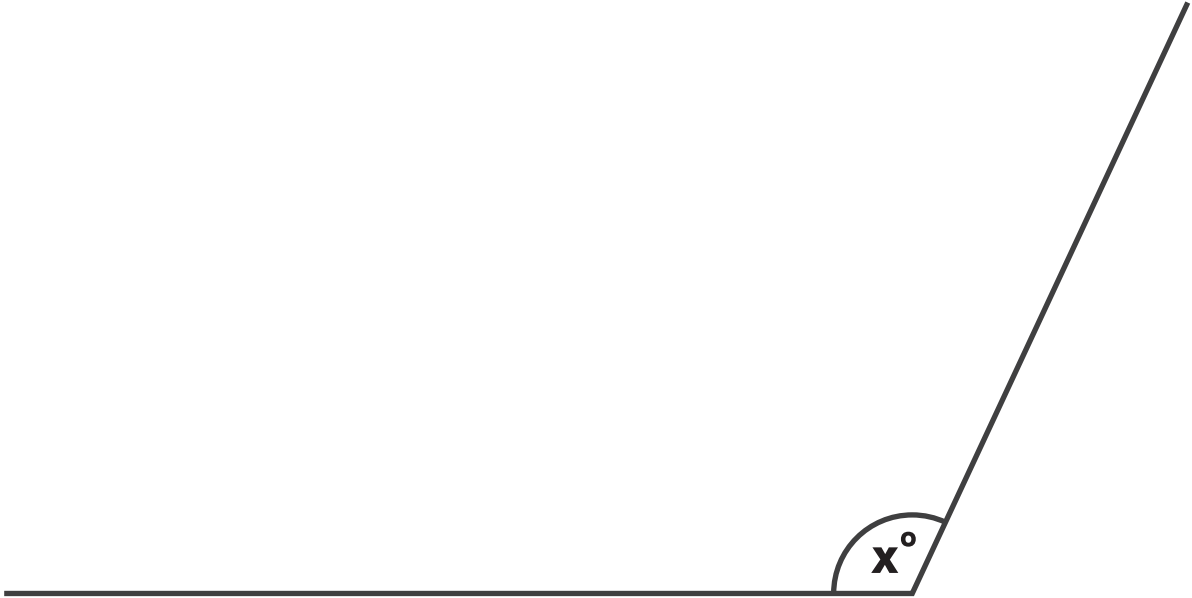
17

One box can hold 21 oranges.

How many boxes are needed to hold 252 oranges?

1 mark





Measure angle x .

☐

1 mark

19

Here are three fraction cards.

$$\frac{2}{3}$$

$$\frac{1}{2}$$

$$\frac{3}{4}$$

Place each card below to make this statement correct.

>

>

1 mark

20

Circle the improper fraction equivalent to $2\frac{4}{5}$.

$$\frac{24}{5}$$

$$\frac{6}{5}$$

$$\frac{14}{5}$$

$$\frac{26}{5}$$

$$\frac{12}{5}$$

$$\frac{28}{5}$$

1 mark



21

Amy builds a tower with 3 blue blocks and 5 yellow blocks.

What fraction of her tower is blue?
Give your answer in its simplest form.

1 mark

Amy adds one more blue block and one more yellow block to her tower.

What fraction of her tower is blue?
Give your answer in its simplest form.

1 mark

22

Abdul is thinking of a number.

He says,

“14% of my number is 168.”

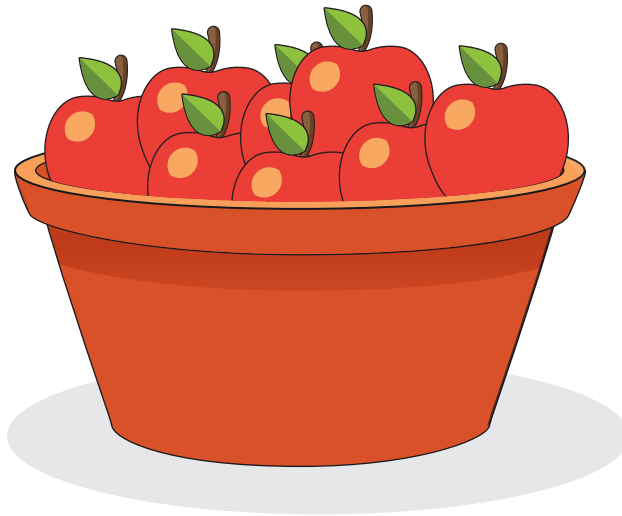
What is Abdul's number?

1 mark



23

Sarah has a bowl of apples.



The bowl itself weights 250 g.

Altogether they weigh 1.27 kg.

There are 12 apples.

What is the mass of one apple?

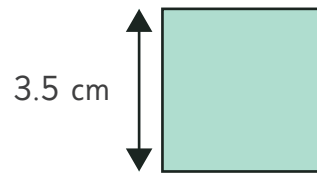
Show
your
method

9



2 marks

Nadia uses these blocks:



This is Nadia's tower.



What is the difference in height between their towers in cm?

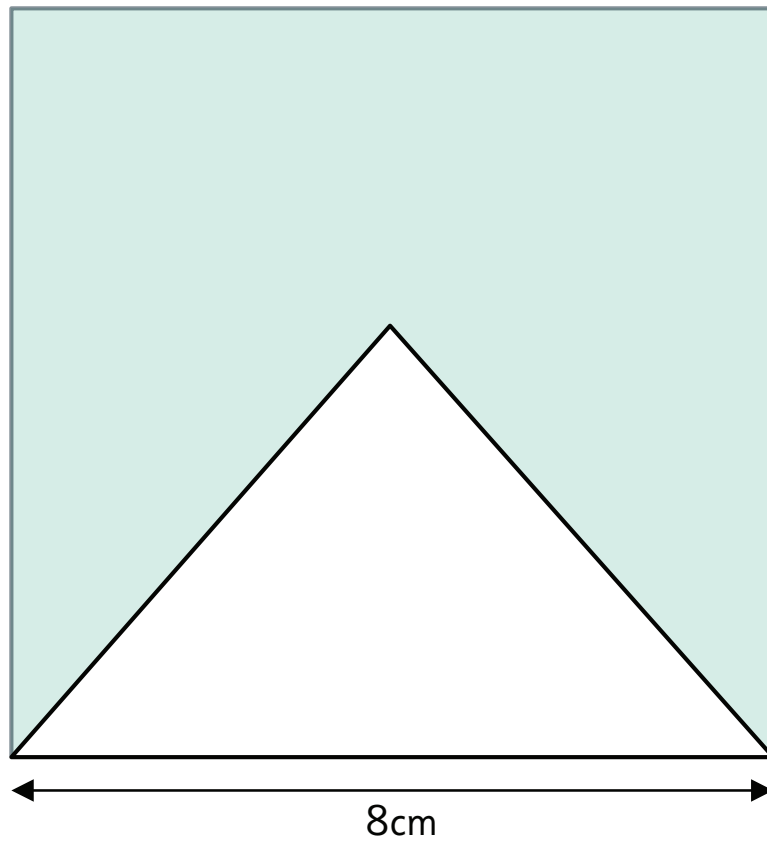
cm

 grammarsaurus.co.uk

25

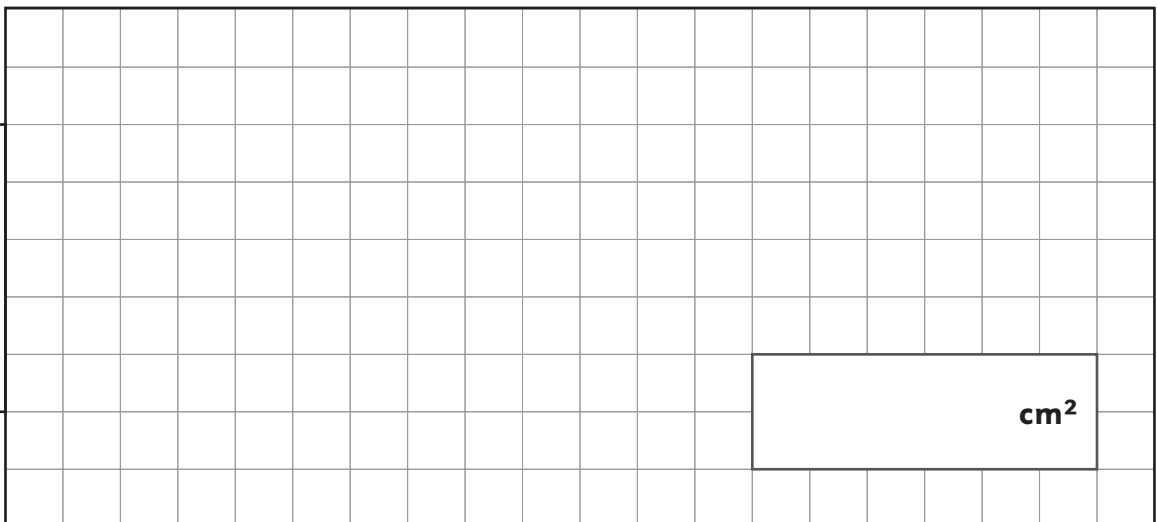
Here is a triangle inside a square.

The triangle is **half** the height of the square.



Calculate the **area** of the shaded part of the shape.

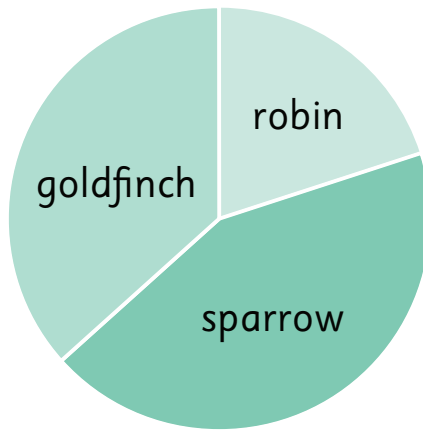
Show
your
method



2 marks



26) Inaya makes a pie chart showing the birds in her garden.



Complete the table to work out the size of each angle on the pie chart.

	Number of birds	Size of angle on pie chart
Goldfinch	10	\circ
Robin	11	\circ
Sparrows	9	\circ



1 mark

Inaya sees 6 more sparrows in her garden.

Calculate the size of the segment for **sparrows** on the new pie chart.

A 20x20 grid with a light gray background and dark gray grid lines. On the left side, there is a white rectangular box with a black border, containing the text "Show your method" in black. On the right side, there is a white rectangular box with a black border, containing a single black dot. The grid is otherwise empty.

1 mark