

PROBLEM SOLVING 2

CONTENT DOMAIN REFERENCES:
A1, A4, A5

KS2 SATS

PRACTICE QUESTIONS BY TOPIC

1

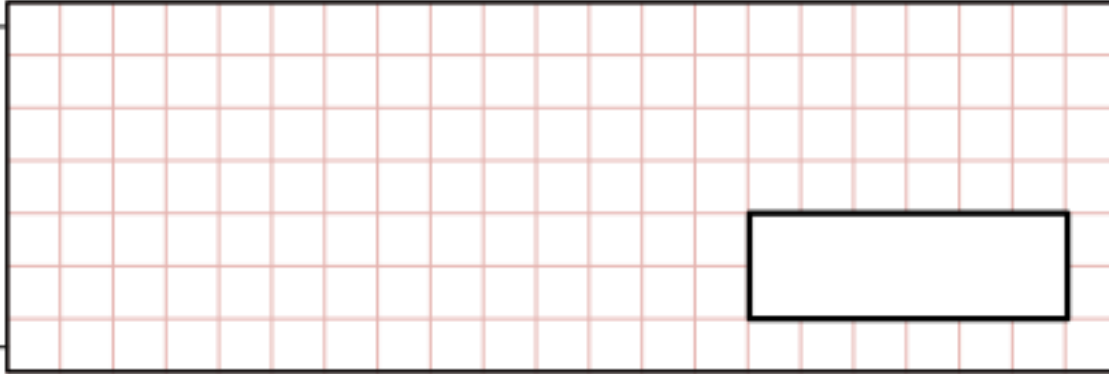
Look at this equation.

[Extra]

$$3a + 20 = 4a + k$$

If $a = 15$, find the value of k

Show your method



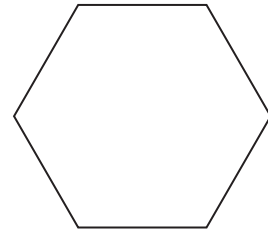
[2 marks]

2

The **perimeter** of a regular hexagon is $42a + 18$

[Extra]

Write an expression for the length of **one** of its sides.



The **perimeter** of a square is $4(c - 9)$

Find the perimeter of the square when $c = 15$



[2 marks]

3

Here are five number cards.

[2004]

A

A

A

B

B

A and B stand for two **different** whole numbers.

The sum of all the numbers on all five cards is 30

What could be the values of A and B?

 A = B =

[1 mark]

4

[2013]

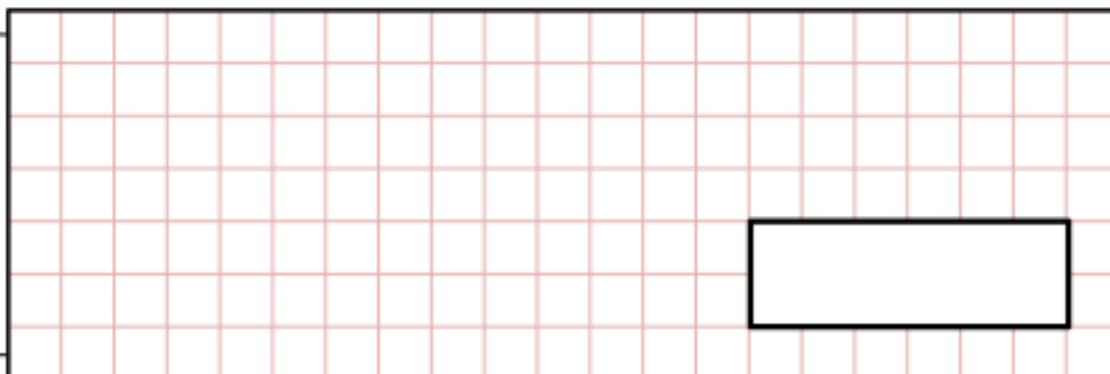


A cake costs 15p more than a biscuit.

Megan bought a cake and two biscuits for 90p.

How much do a cake and a biscuit each cost?

Show your method

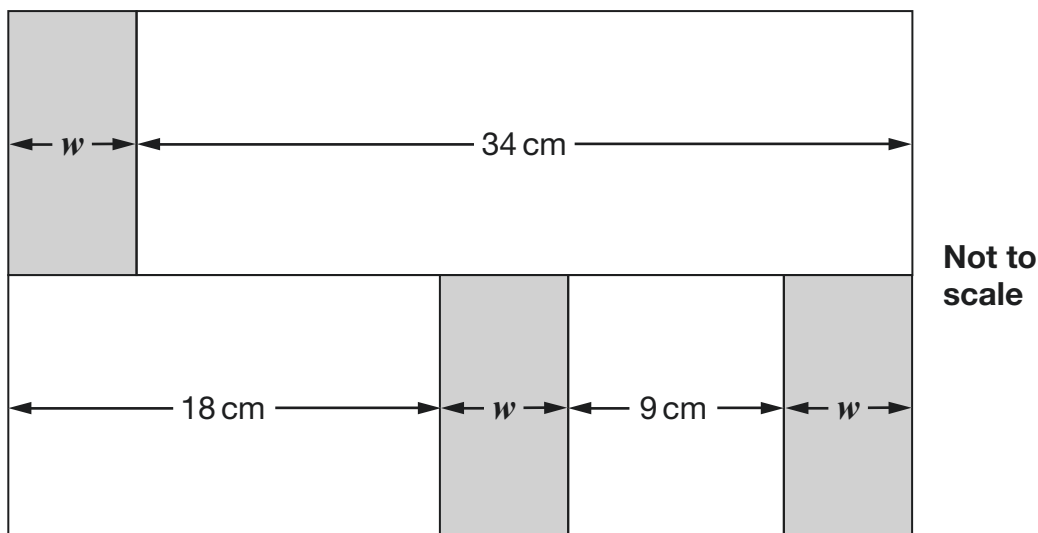

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[2 marks]

5

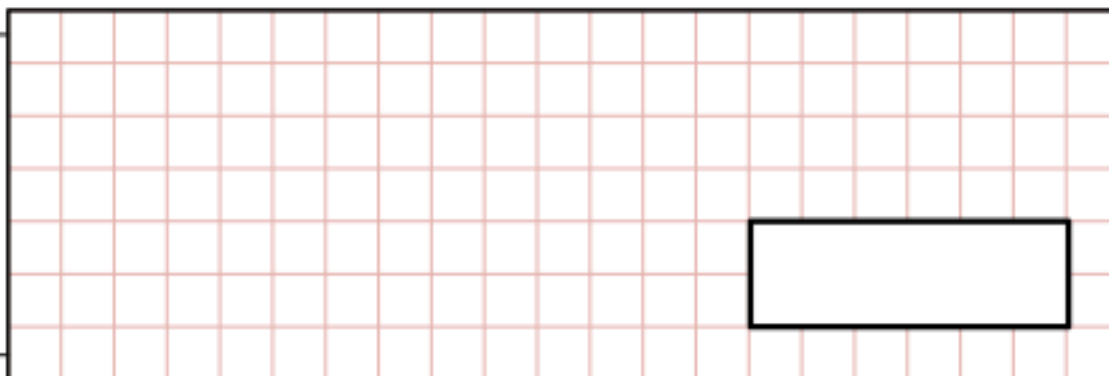
In this diagram, the shaded rectangles are all of equal width (w).

[2017]



Calculate the width (w) of one shaded rectangle.

Show your method



[2 marks]

6

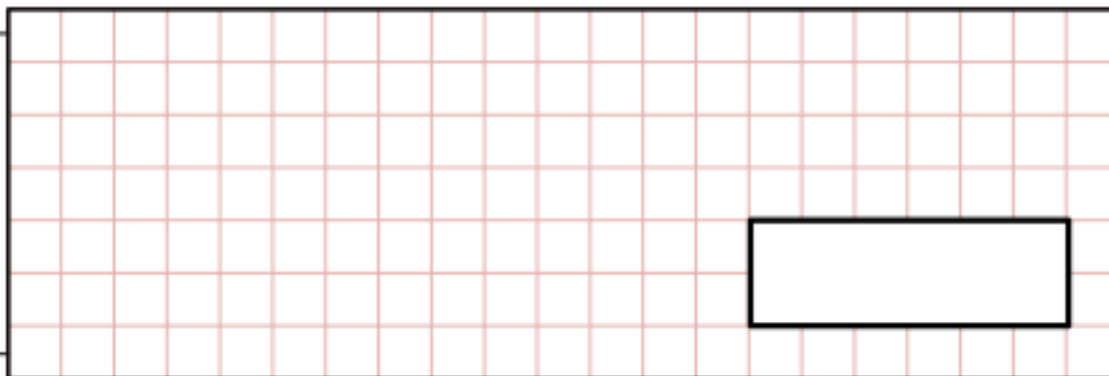
The **sum** of two numbers is **998**

[Extra]

The **difference** between them is **10**

What are the two numbers?

Show your method



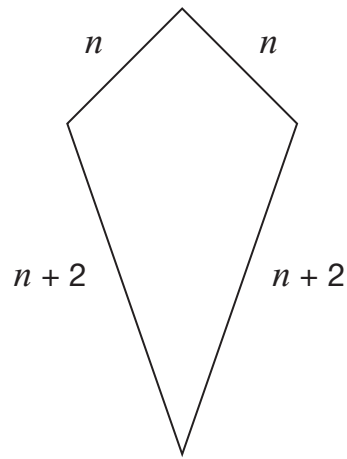
[2 marks]

7

The diagram shows a kite.

[Extra]

The side lengths are in centimetres.



Not drawn accurately

When $n = 9$, what is the perimeter of the kite?



_____ cm

When the perimeter of the kite is **100 cm**, what is the value of n ?

$n =$ _____

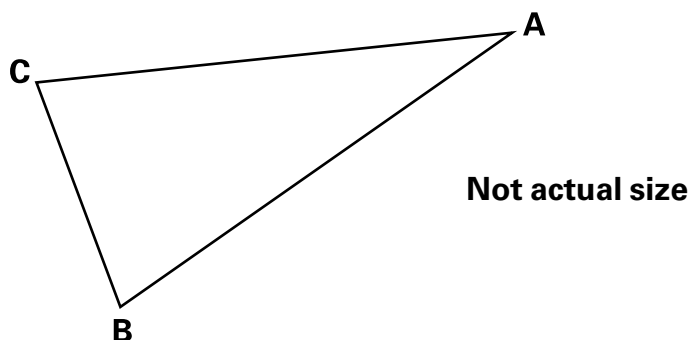
[3 marks]

8

[2001]

Triangle **ABC** is isosceles and has a perimeter of 20 centimetres.

Sides **AB** and **AC** are each **twice** as long as **BC**.



Calculate the length of the side **BC**.

Do not use a ruler.

Show your method

[2 marks]

9

[2000]

n stands for a number.

Complete this table of values.

n	$5n - 2$
20	<input type="text"/>
<input type="text"/>	38

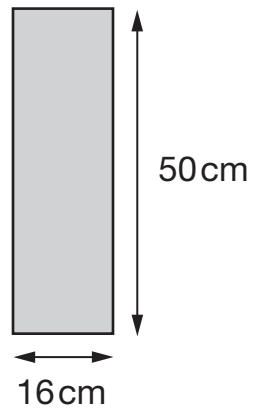
[2 marks]

10

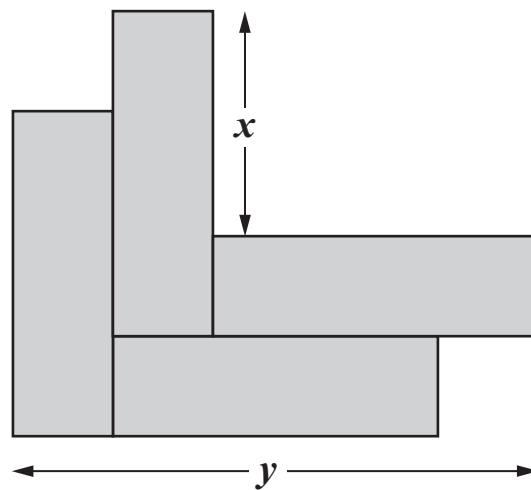
[2007]

Kate has some rectangles.

They each measure 16 centimetres by 50 centimetres.

**Not actual size**

She makes this design with four of the rectangles.

Work out the lengths x and y .

 $x =$ cm

$y =$ cm

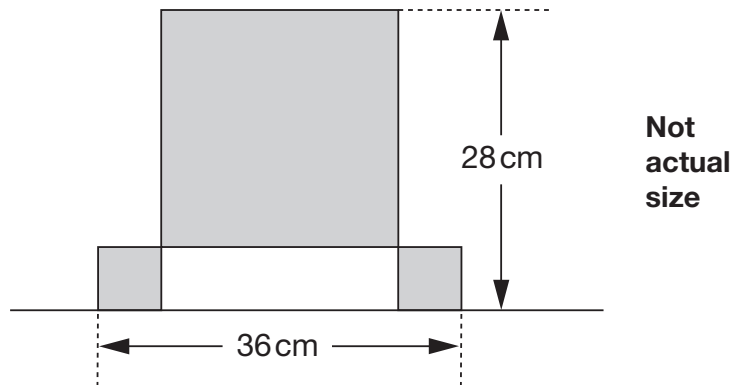
[2 marks]

11

This design has **one large square** and **two identical small squares**.

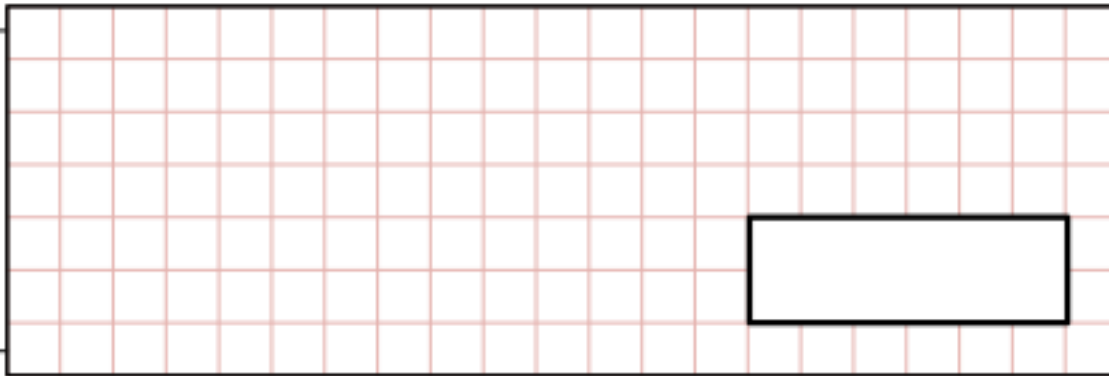
[2009]

The design measures 36 centimetres by 28 centimetres.



Calculate the length of a side of the **large** square.

Show your method



[2 marks]

12

Look at these equations.

[Extra]

$$11 = 6 + a$$

$$a + 7 = 10 + b$$

Use both equations to work out the value of b

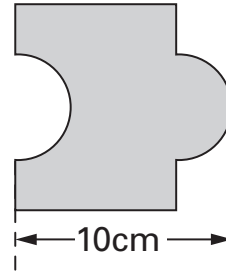
$$b = \underline{\hspace{2cm}}$$

[2 marks]

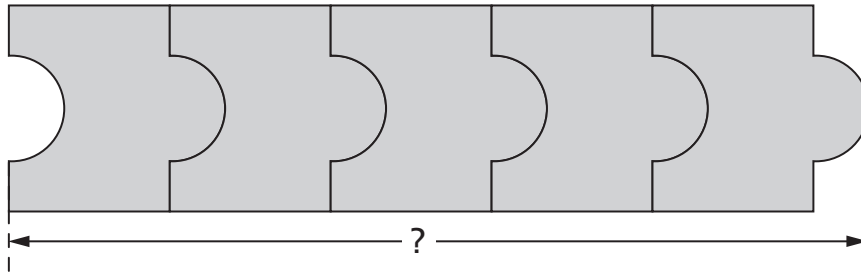
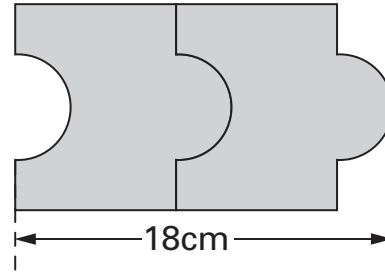
Josh has some tiles.

Not actual size

Each tile is 10cm long.



Two tiles fitted together are 18cm long.



Calculate the length of **five** tiles fitted together.

Show your method

[2 marks]

15

[2000]



Two families go to the cinema.

The Smith family buy tickets for **one adult** and **four children** and pay **£19**

The Jones family buy tickets for **two adults** and **two children** and pay **£17**

What is the cost of **one child's ticket**?

Show your method

[2 marks]

16

[2000]

The sum of two numbers is 5.

The difference between the numbers is 0.5

What are the numbers?

and

[1 mark]

17

[2002]

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?

Show your method

[2 marks]