

The logo for White Rose Maths is a circular emblem. The top half of the circle is dark blue with the word "White" in white. The bottom half is white with the words "Rose" and "Maths" in dark blue. The word "Rose" features a stylized rose icon in place of the letter 'o'.

**White
Rose
Maths**

Negative numbers & Roman Numerals

Can you spot the mistake in these number sequences?

a) $2, 0, 0, -2, -4$

b) $1, -2, -4, -6, -8$

c) $5, 0, -5, -10, -20$

Explain how you found the mistake and convince me you are correct.

Rosie counts forwards and backwards in 10s from 317

Circle the numbers Rosie will count.

427

997

−7

1,666

3,210

5,627

−23

7

−3

Explain why Rosie will not say the other numbers.

True or False?

- The temperature outside is -5 degrees, the temperature inside is 25 degrees.
The difference is 20 degrees.
- Four less than negative six is negative two.
- 15 more than -2 is 13

Explain how you know each statement is true or false.

Put these statements in order so that the answers are from smallest to greatest.

- The difference between -24 and -76
- The even number that is less than -18 but greater than -22
- The number that is half way between 40 and -50
- The difference between -6 and 7

Solve the following calculation:

$$\text{XIV} + \text{XXXVI} = \underline{\hspace{2cm}}$$

How many other calculations, using Roman Numerals, can you write to get the same total?

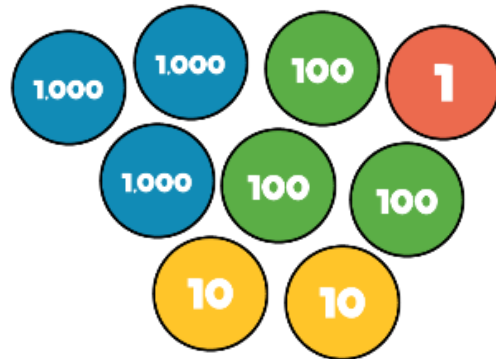
Mo says,

In the 10 times table, all the numbers have a zero.
Therefore, in Roman Numerals all multiples of 10 have an X



Research and give examples to prove whether or not Mo is correct.

Put these amounts in ascending order.



Half of 2,400

LXXXVI

Solve

$$\text{CCCL} + \text{CL} =$$

How many calculations, using Roman Numerals, can you write to get the same total?

Here is part of a Roman Numerals hundred square.

Complete the missing values.

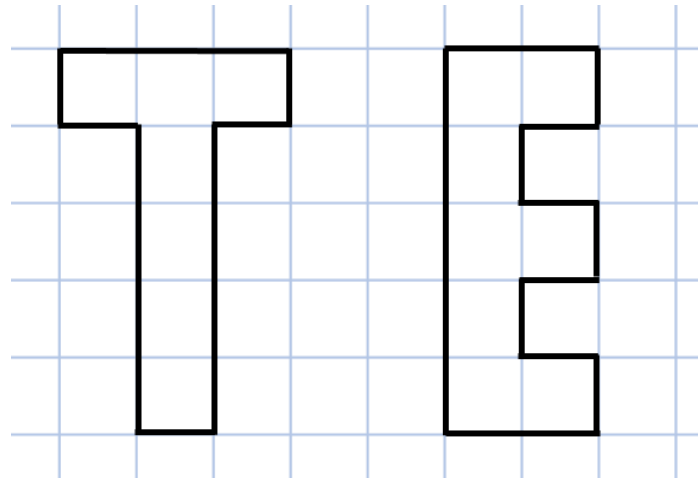
XLIV	XLV		XLVII
		LVI	LVII
LXIV		LXVI	LXVII

What patterns do you notice?



Length and Perimeter

Which of these shapes has the longest perimeter?



Explore other letters which could be drawn as rectilinear shapes.

Put them in order of shortest to longest perimeter.

Can you make a word?

You have 10 paving stones to design a patio. The stones are one metre square.

The stones must be joined to each other so that at least one edge is joined corner to corner.



Use squared paper to show which design would give the longest perimeter and which would give the shortest.

The width of a rectangle is 2 metres less than the length.

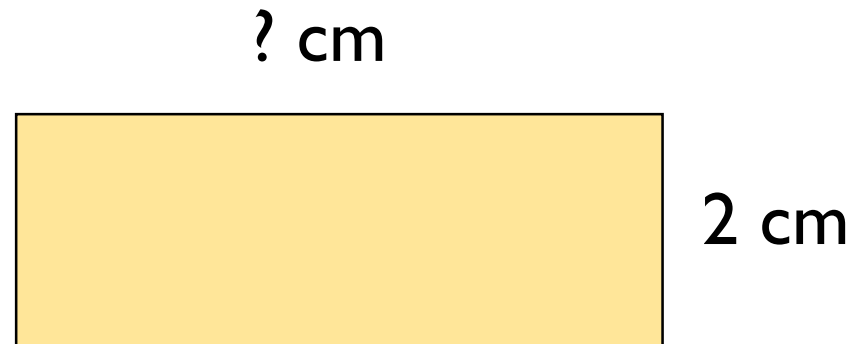
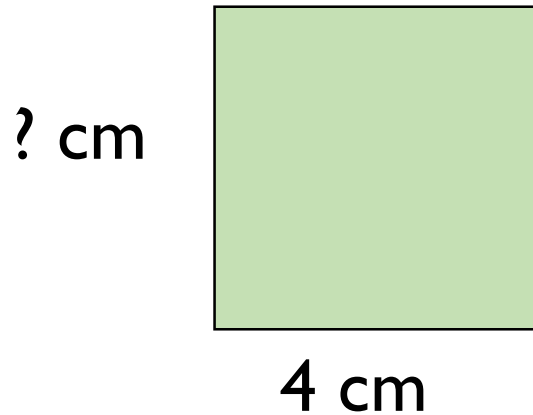
The perimeter of the rectangle is between 20 m and 30 m.

What could the dimensions of the rectangle be?

Draw all the rectangles that fit these rules.

Use 1 cm = 1 m.

Each of the shapes have a perimeter of 16 cm.
Calculate the lengths of the missing sides.

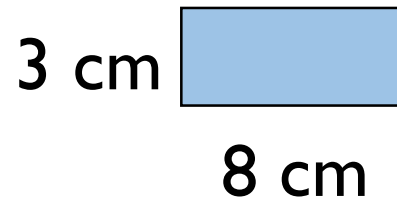


Always, Sometimes, Never

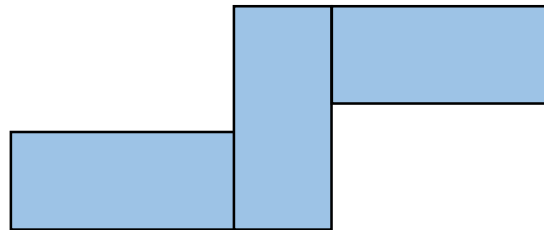
When all the sides of a rectangle are odd numbers, the perimeter is even.

Prove your answer.

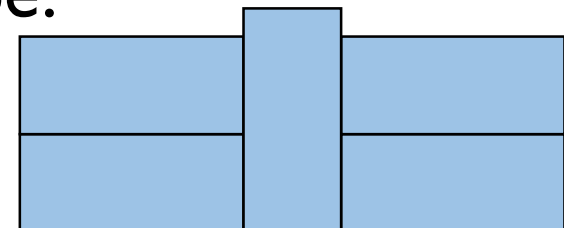
Amir has some rectangles all the same size.



He makes this shape using his rectangles. What is the perimeter?

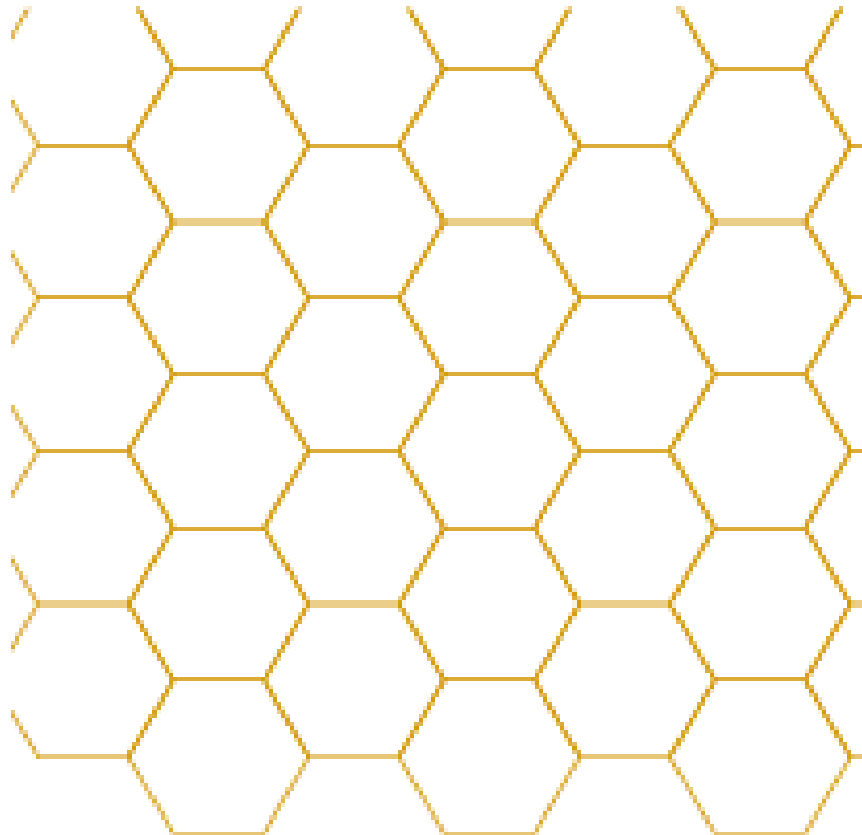


He makes another shape using the same rectangles. Calculate the perimeter of this shape.

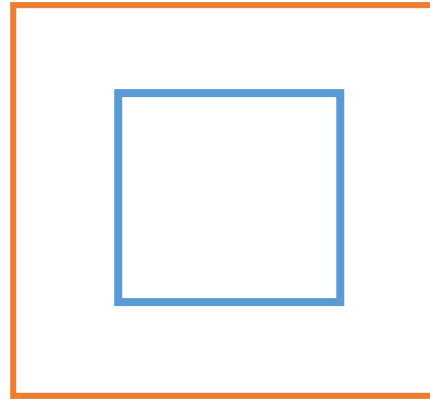


Each regular hexagon has a side length of 2 cm

Can you construct a shape with a perimeter of 44 cm?



Here is a square inside another square.



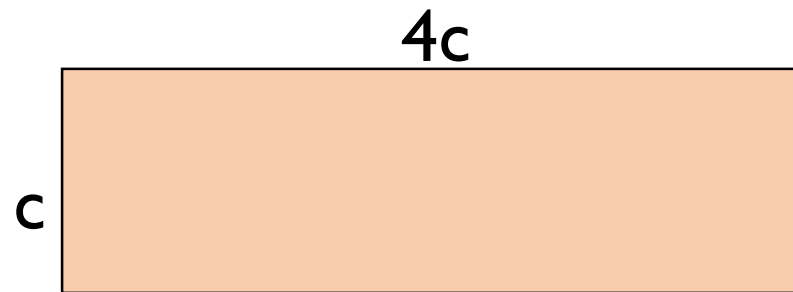
The perimeter of the inner square is 16 cm

The outer square's perimeter is four times the size of the inner square.

What is the length of one side of the outer square?

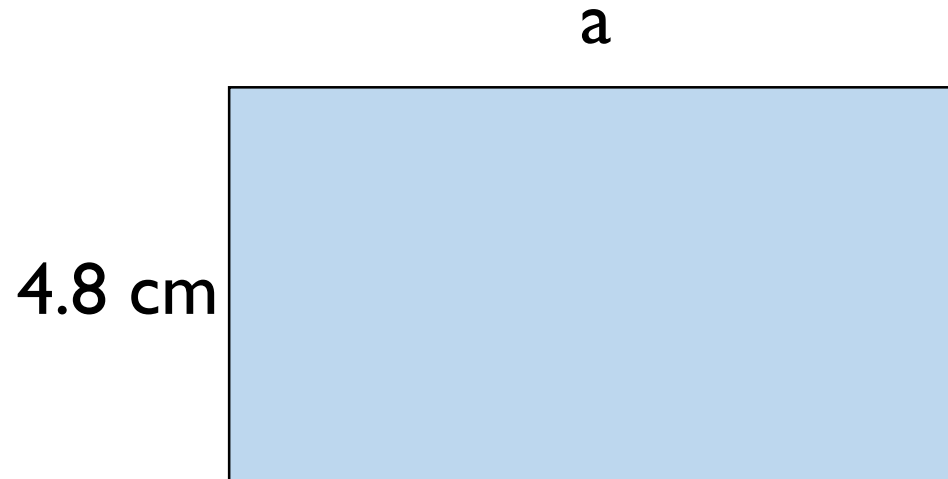
How do you know? What do you notice?

The value of c is 14 m.



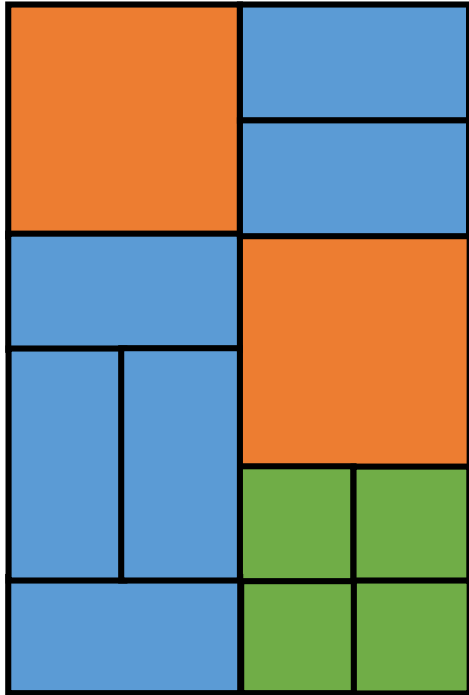
What is the total perimeter of the shape?

The blue rectangle has a perimeter of 38 cm.



What is the value of a?

Each orange square has an area of 24 cm^2 .



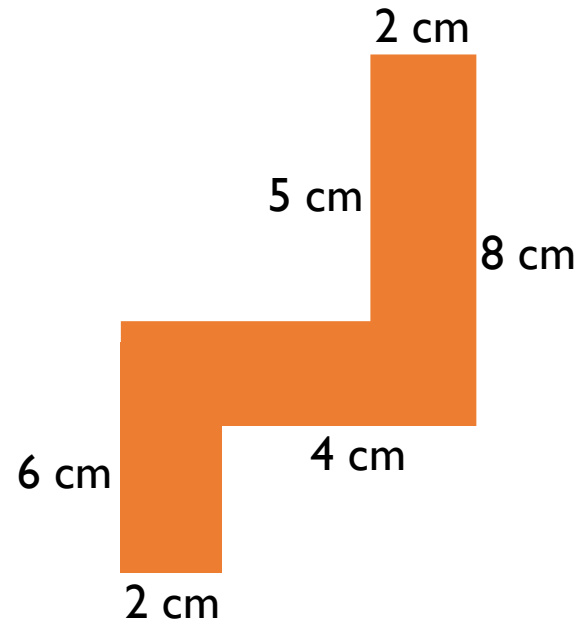
Calculate the total orange area.

Calculate the blue area.

Calculate the green area.

What is the total area of the whole shape?

Jack says this shape has an area of 34 cm^2 .



Show that Jack is correct.

Find three more possible compound shapes that have an area of 34 cm^2 .

If each square represents 3 m^2 , what is the approximate area of:

- The lake
- The bunkers
- The fairway
- The rough
- Tree/forest area

