

Diving into Mastery

Tuesday 19th April



twinkl



Area and Perimeter

19.4.22 LO:

To find area and perimeters of shapes (revision)

Do now! Converting measures- revision!

3. I saw 3.5 metres of wood into three pieces.
The length of the first piece is 1.37 metres.
The length of the second piece is 108 centimetres.
Calculate the length of the third piece in metres.

Show
your
method

metres

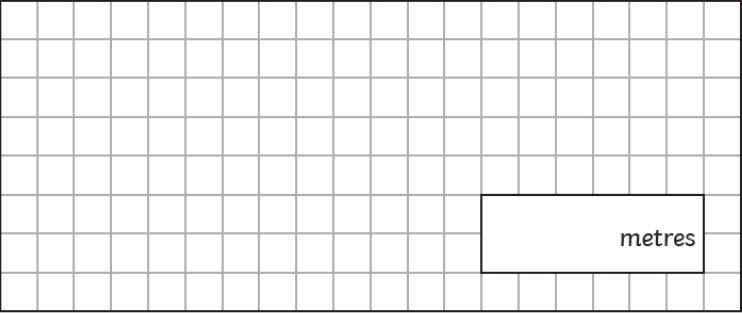
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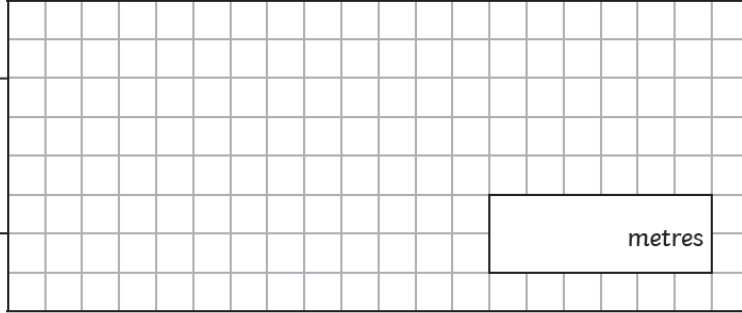
Show your method



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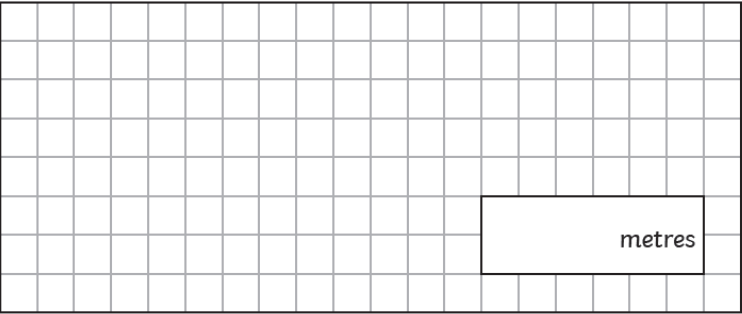
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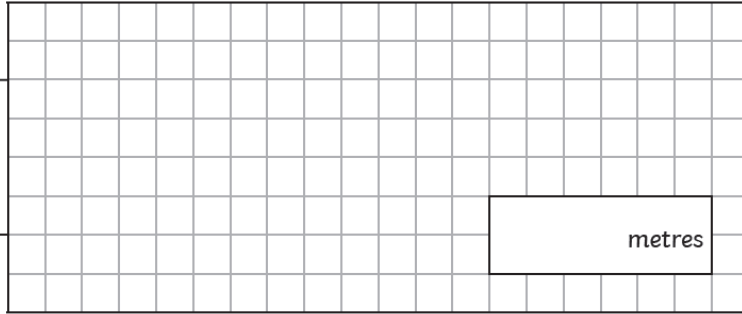
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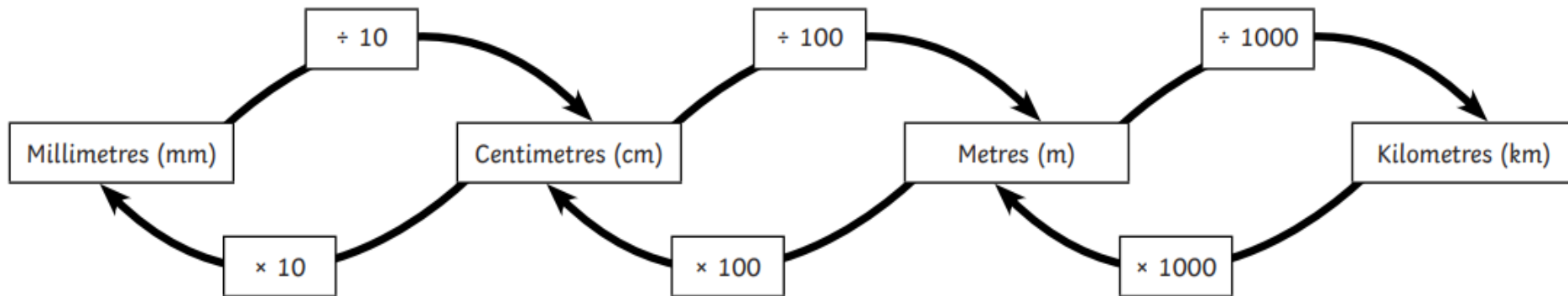


metres

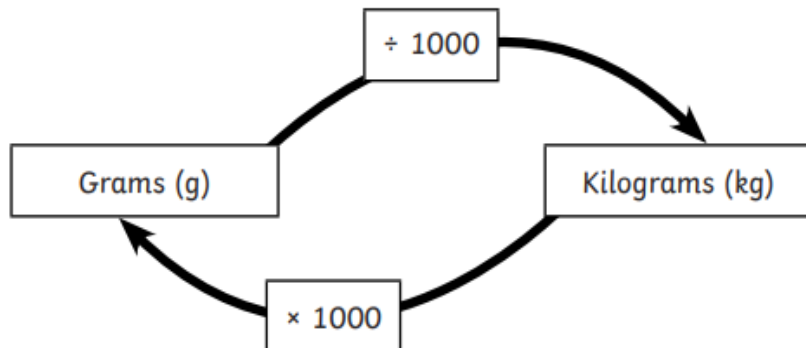
Revision...

Measurement Conversion Chart

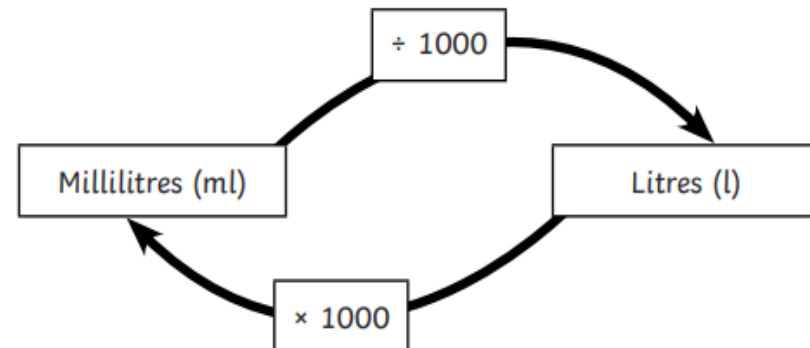
Length



Mass



Capacity



Crucial vocabulary...

Perimeter, Area and Volume

Knowledge Organiser

Key Vocabulary

perimeter

area

volume

cubic units (e.g. cm^3)

cuboid

width

length

rectangle

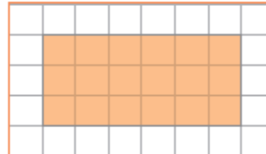
rectilinear

parallelogram

perpendicular height

Area of Rectangles

$\text{length} \times \text{width} = \text{area of a rectangle}$



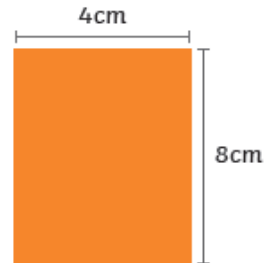
Counting squares:

$\text{area} = 18\text{cm}^2$

Use formula:

$6\text{cm} \times 3\text{cm}$

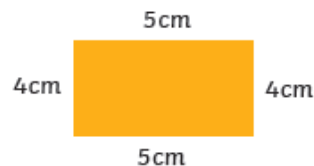
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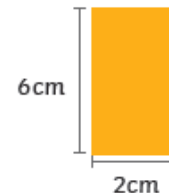
$8\text{cm} \times 4\text{cm} \text{ area} = 32\text{cm}^2$

Perimeter of Rectangles

$\text{perimeter} = \text{length} + \text{width} + \text{length} + \text{width}$
or $(\text{length} + \text{width}) \times 2$



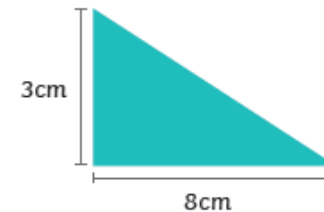
$5\text{cm} + 4\text{cm} + 5\text{cm} + 4\text{cm}$
 $\text{area} = 18\text{cm}^2$



$(6 + 2) \times 2$
 $\text{area} = 16\text{cm}^2$

Area of Triangles

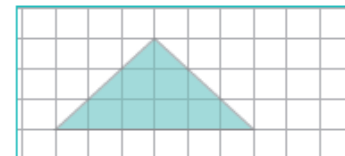
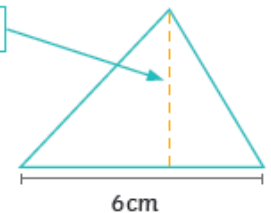
$\text{base} \times \text{perpendicular height} \div 2 = \text{area of a triangle}$



$8\text{cm} \times 3\text{cm} \div 2$
 $\text{area} = 12\text{cm}^2$

perpendicular height = 5cm

$6\text{cm} \times 5\text{cm} \div 2$
 $\text{area} = 15\text{cm}^2$



Counting squares:

6 whole squares = 6cm^2

6 half squares = 3cm^2

$6\text{cm}^2 + 3\text{cm}^2 = 9\text{cm}^2$

$\text{area} = 9\text{cm}^2$

Using formula:

$6\text{cm} \times 3\text{cm}$

$\div 2 = 9\text{cm}^2$

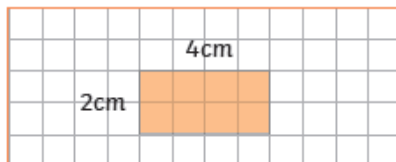
Crucial vocabulary...

Perimeter, Area and Volume

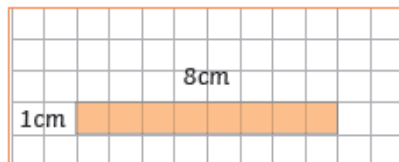
Knowledge Organiser

Perimeter and Area

Shapes with the same area can have different perimeters.

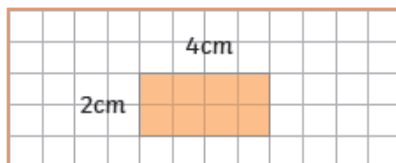


area = 8cm^2 perimeter = 12cm

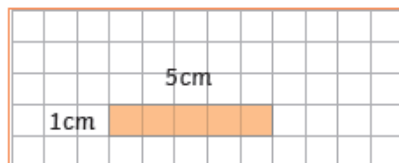


area = 8cm^2 perimeter = 18cm

Shapes with the same perimeter can have different areas.



area = 8cm^2 perimeter = 12cm

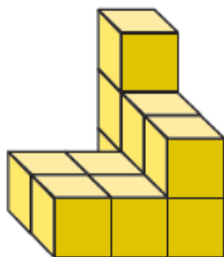


area = 5cm^2 perimeter = 12cm

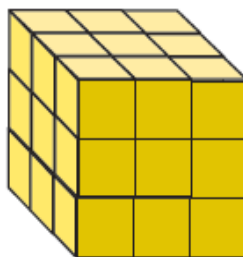
Volume - Counting Cubes



= 1cm^3



11cm^3

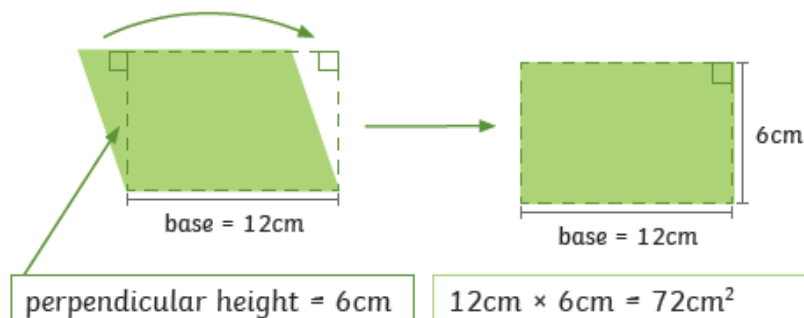


27cm^3

Area of Parallelograms

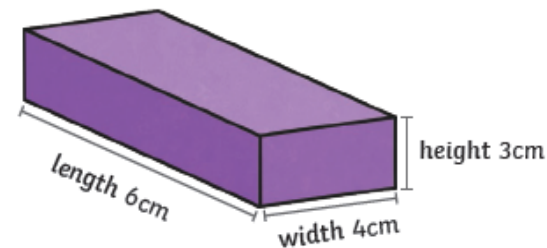
base $\times$ perpendicular height = area of a parallelogram

A parallelogram can be transformed into a rectangle.



Volume of Cuboids

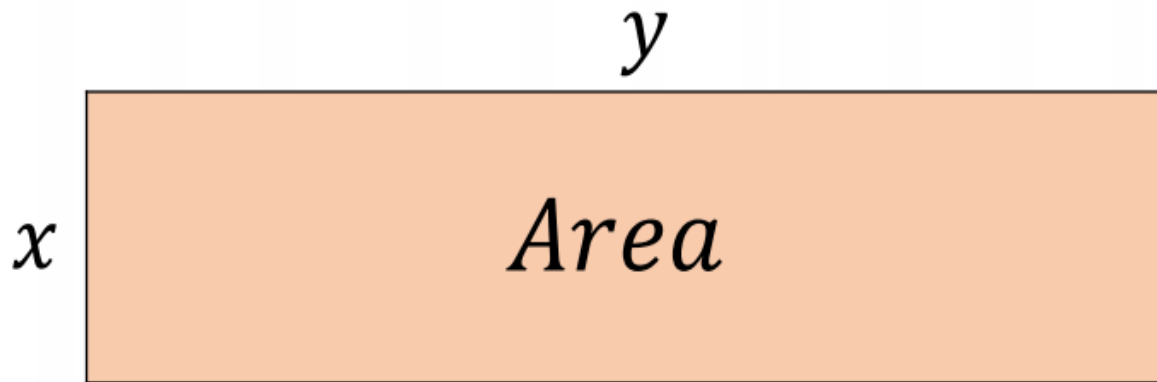
length $\times$ width $\times$ height = volume of a cuboid



Multiply dimensions in **any** order:

$3\text{cm} \times 6\text{cm} \times 4\text{cm}$

volume = 72cm^3



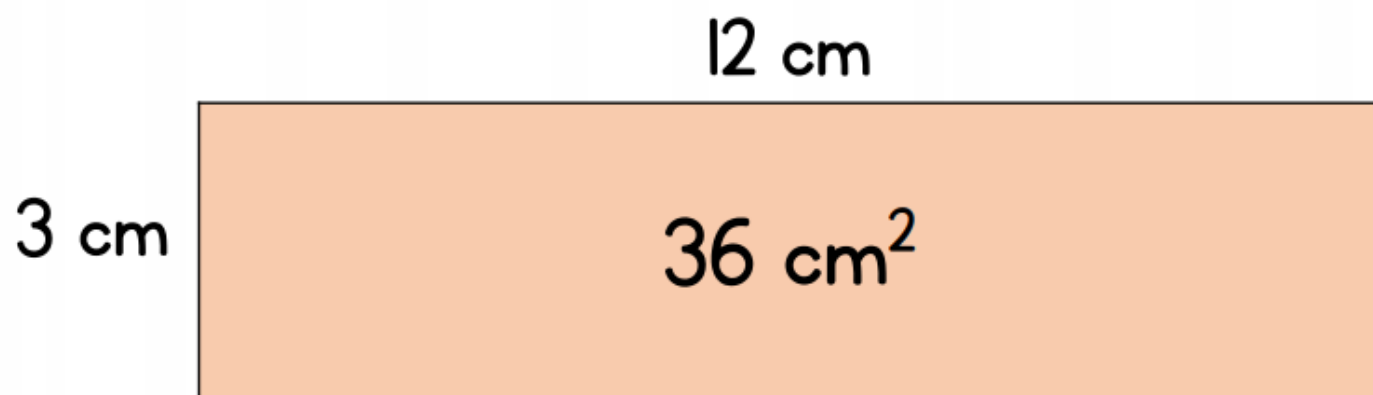
$$\text{Area} = xy$$

$$x = \text{Area} \div y$$

$$y = \text{Area} \div x$$

True

Check using numbers.



$$36 = 12 \times 3$$

$$12 = 36 \div 3$$

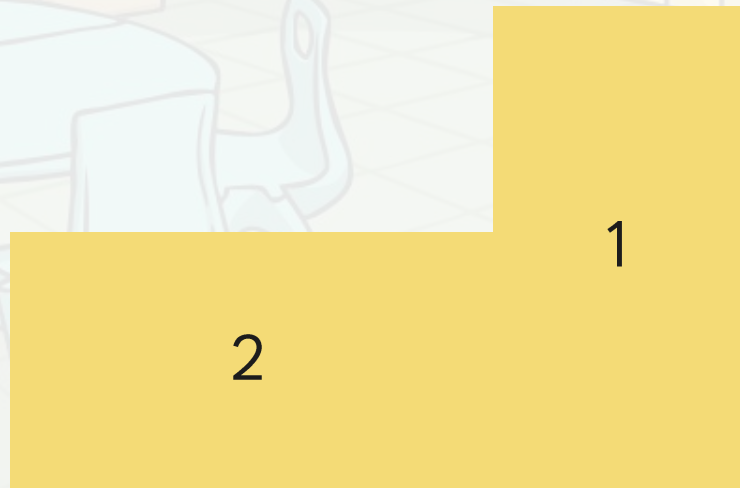
$$3 = 36 \div 12$$

Compound Area

Compound area is where a shape can be made up of other shapes.

The area of a compound shape can be found by calculating the area of the shapes from which they can be formed, and adding these together.

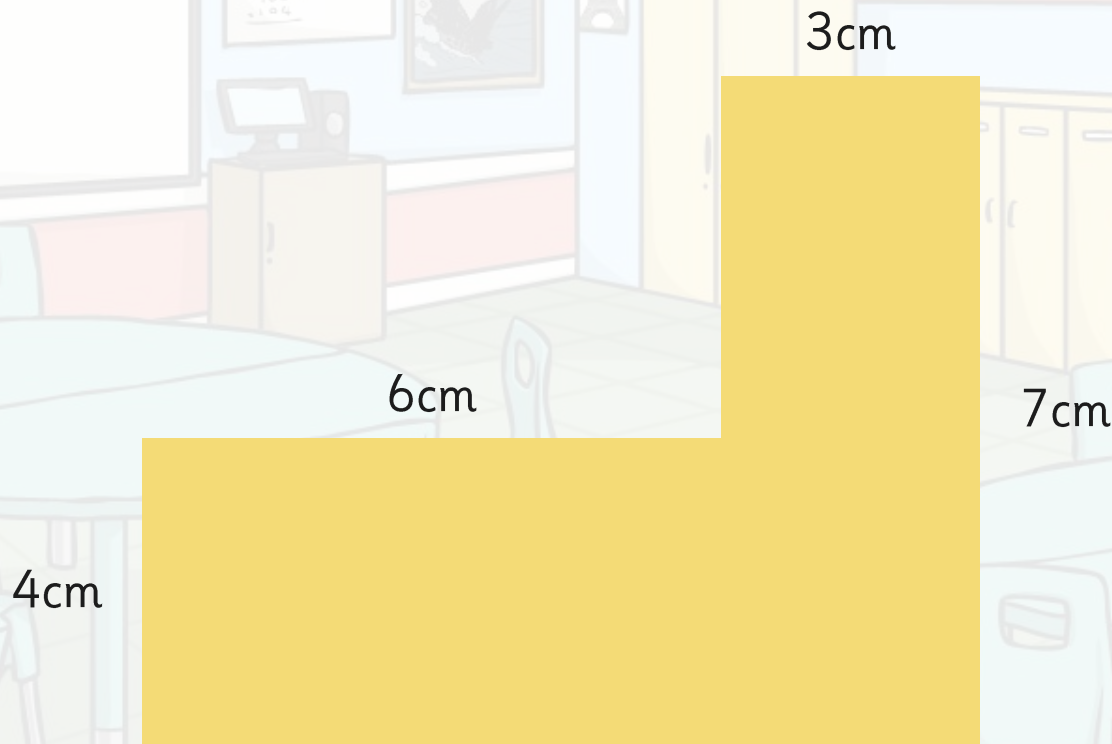
Here is a compound shape made of 2 rectangles.



Compound Area



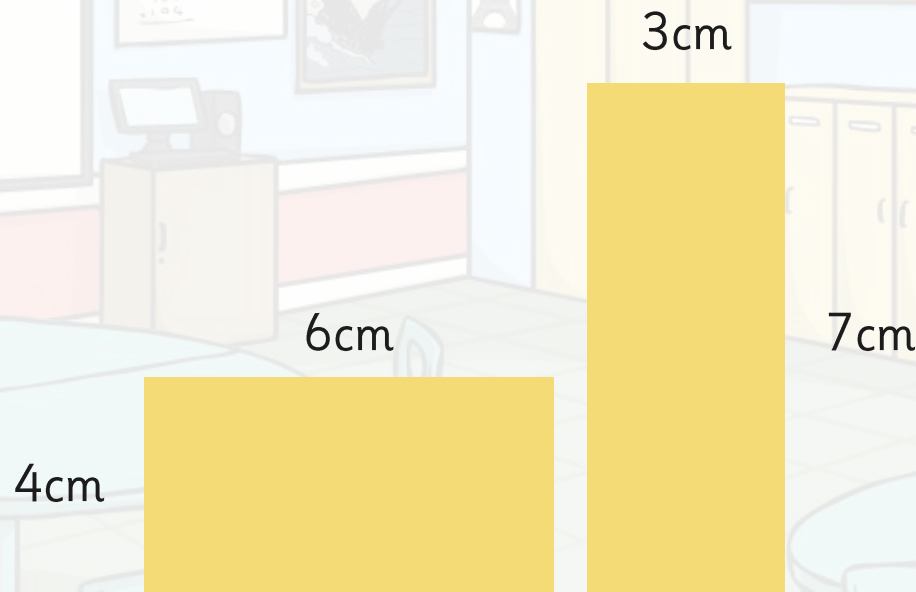
Calculate the area of this compound shape:



Compound Area



Calculate the area of this compound shape:



$$\text{Area} = (4\text{cm} \times 6\text{cm}) + (3\text{cm} \times 7\text{cm}) = 24\text{cm}^2 + 21\text{cm}^2 = 45\text{cm}^2$$



Perimeter = **44cm**

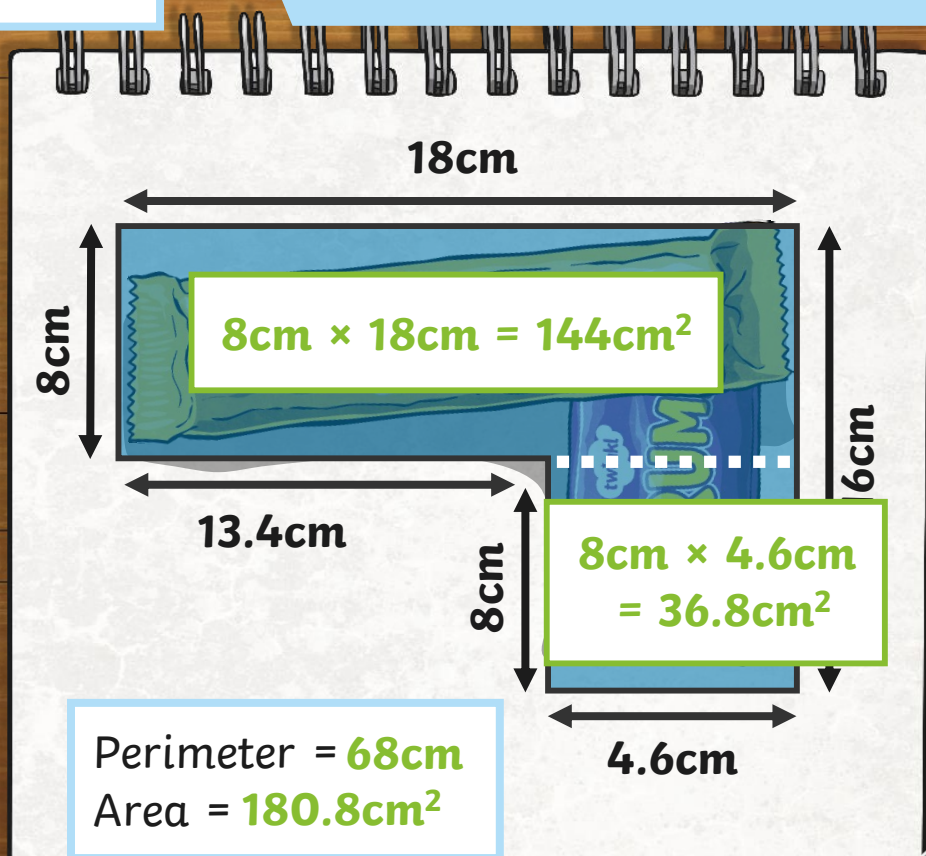
Area = **96cm²**

Perimeter = **23cm**

Area = **28cm²**

Give the missing values for the blue shapes (not to scale).

This shape can be split into two rectangles. We can work out the area of each rectangle separately then add the two area measurements together to find the total area of the shape.



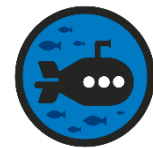


Perimeter = 28cm
Area = 24cm^2

Give the missing values for the shapes (not to scale).



Perimeter = 20cm
Area = 24cm^2

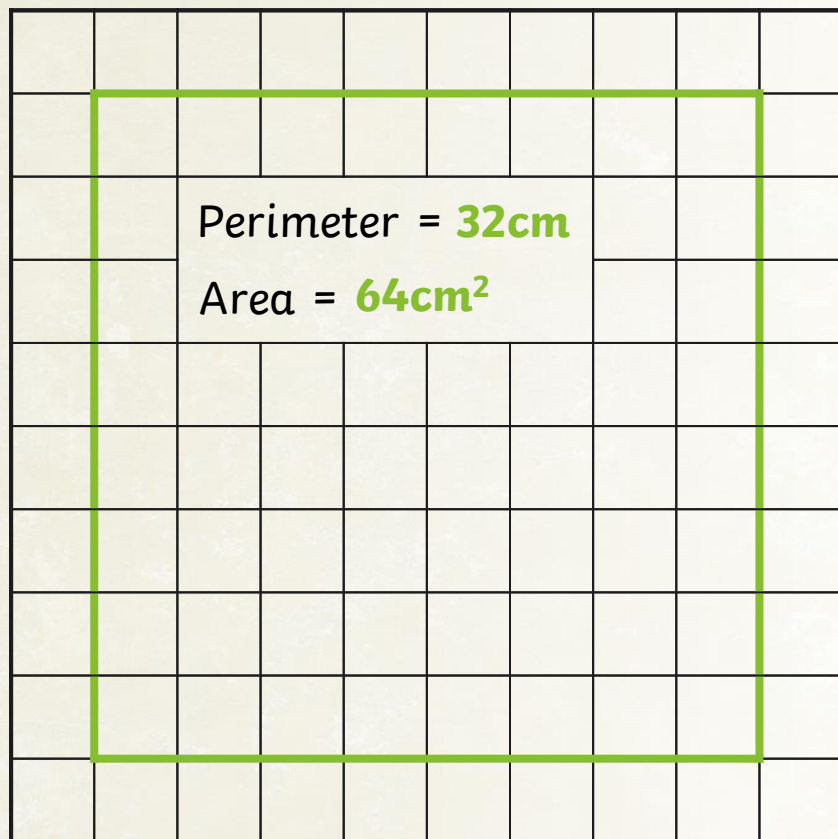


True. An $8\text{cm} \times 8\text{cm}$ square will have an area that is twice its perimeter. See example:



Ava

I can draw a shape that has an area that is twice its perimeter.



Over to you...

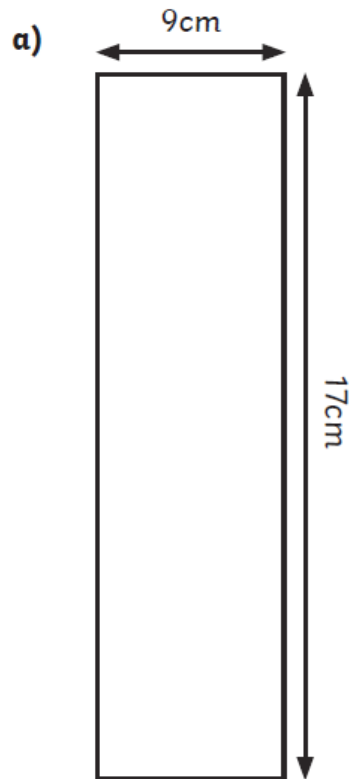
Octagons- Initial challenge with Mrs Lund then Group 3 sheet

Triangles- Group 1 sheet

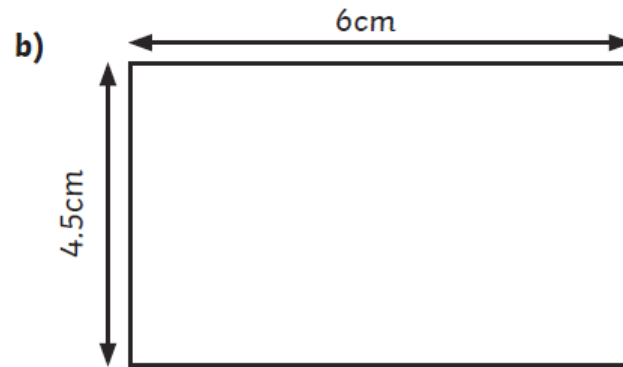
Hex/ Squares – Area and perimeter of compound shapes

Squares/ Hex Extension

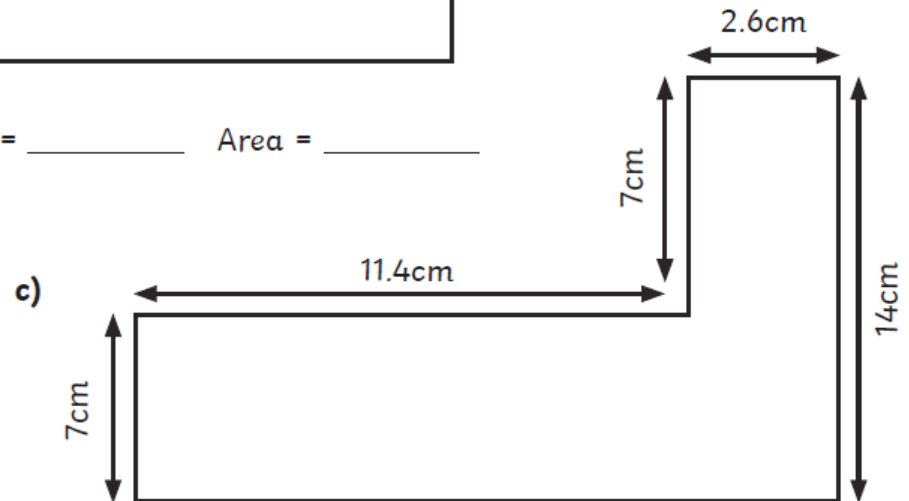
1) Calculate the area and perimeter of the following rectilinear shapes (not to scale).



Perimeter = _____ Area = _____

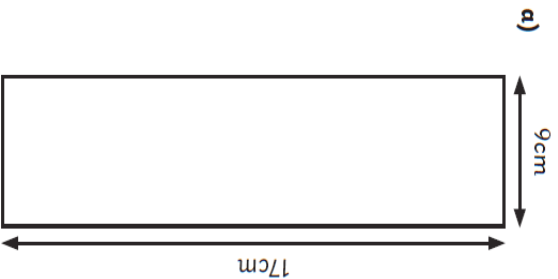


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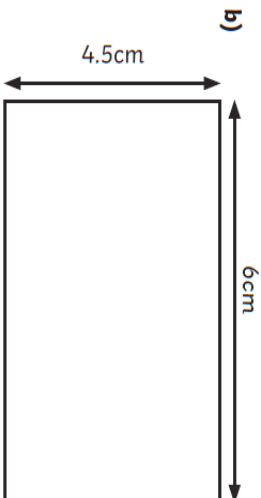


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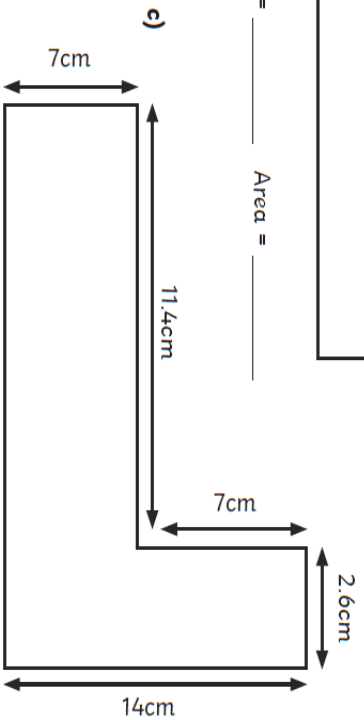
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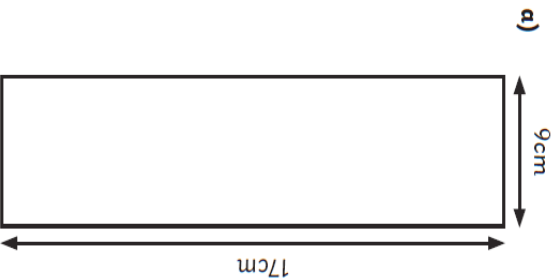


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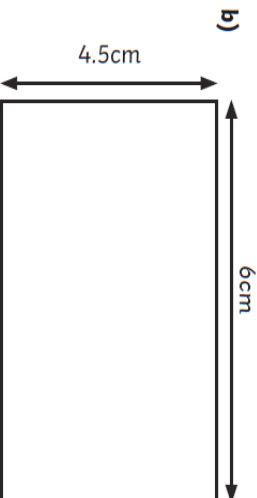


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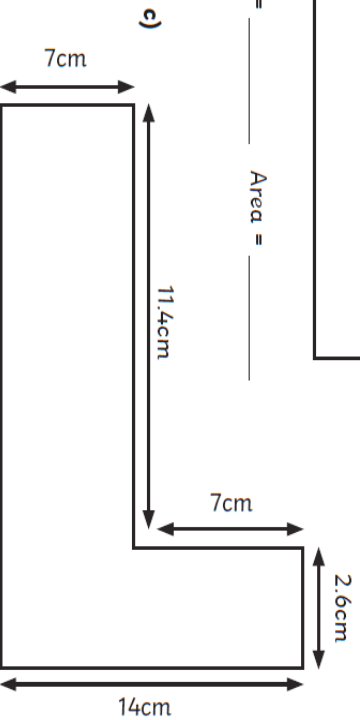
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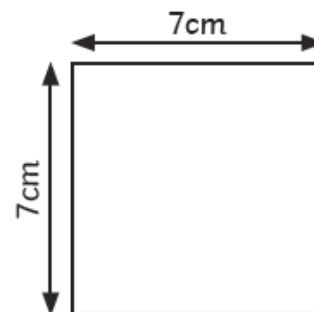
Octagons Extension...

2) Three of these squares are made into a new shape.



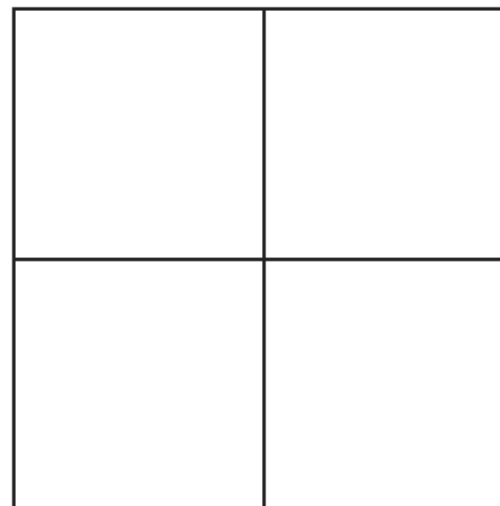
Ben

I think that the new shape has an area and perimeter that is three times that of the original square.



a) Do you agree with Ben's statement? What mistake do you think he has made?

b) Give the area and perimeter of the new shape.



Maths meeting...Decimals

STARTER TASK....whiteboards!

4	$3.7 - 0.9 =$						

5	$2.6 + 0.02 =$						

Rounding Rules

There are easy rules to follow to make sure you become a rounding expert!



Round 3.2 to the **nearest whole number**.

1

Underline the digit in the position you have been asked to round to.

3.2

2

Look at the digit immediately to the right of the underlined digit.

3.2

3

If the next-door digit is 0, 1, 2, 3 or 4, the underlined digit stays the same. If the next-door digit is 5, 6, 7, 8 or 9, the underlined digit rounds up.

3.2
←



4

Write the answer.

3

Rounding Rules

There are easy rules to follow to make sure you become a rounding expert!



Round 3.197
to the
**nearest
hundredth.**

1

Underline the digit in the position you have been asked to round to.

3.197

2

Look at the digit immediately to the right of the underlined digit.

3.197

3

If the next-door digit is 0, 1, 2, 3 or 4, the underlined digit stays the same.
If the next-door digit is 5, 6, 7, 8 or 9, the underlined digit rounds up.

3.197

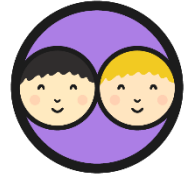


4

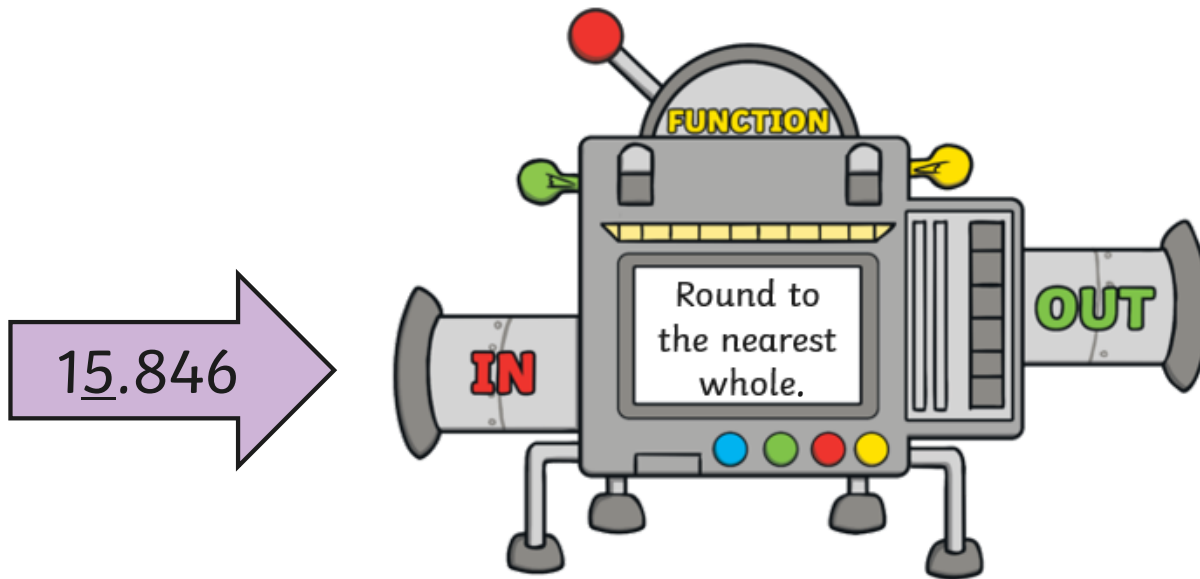
Write the answer.

3.20

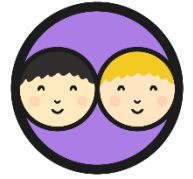
Rounding Practice



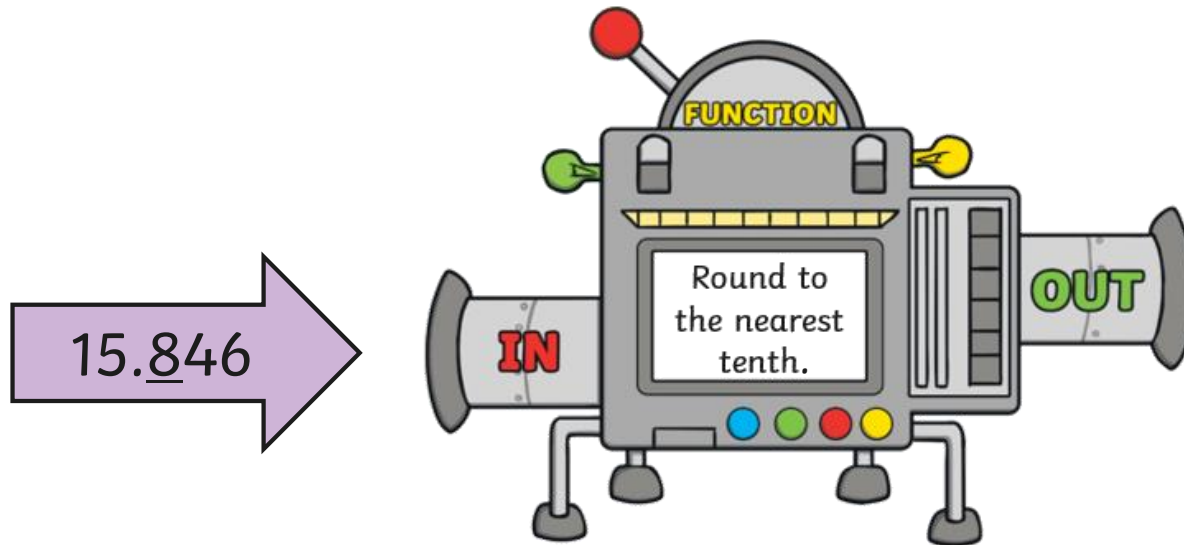
Working with a partner, round this number to the specified degree of accuracy:



Rounding Practice



Working with a partner, round this number to the specified degree of accuracy:



Over to you...sheet- mark together