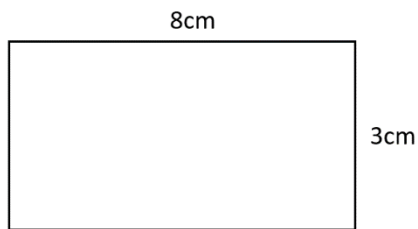


**Problem of the Week: Week 3 (Sum1): Year 7: Geometry**

- Derive and apply formulae to calculate and solve problems involving: perimeter and area of triangles, parallelograms, trapezia, volume of cuboids (including cubes) and other prisms (including cylinders)
- Calculate and solve problems involving: perimeters of 2-D shapes (including circles), areas of circles and composite shapes

**Perimeter Possibilities**

This rectangle has an area of  $8 \times 3 = 24 \text{ cm}^2$   
It has a perimeter of  $8 + 8 + 3 + 3 = 22 \text{ cm}$

How many different rectangles can you find with an area of  $24 \text{ cm}^2$

For each one, draw the rectangle and work out its perimeter.

What is the largest and the smallest perimeter ?

**Garden Path**

A rectangular lawn is surrounded by a garden path of constant width

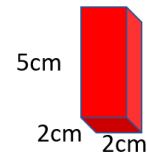
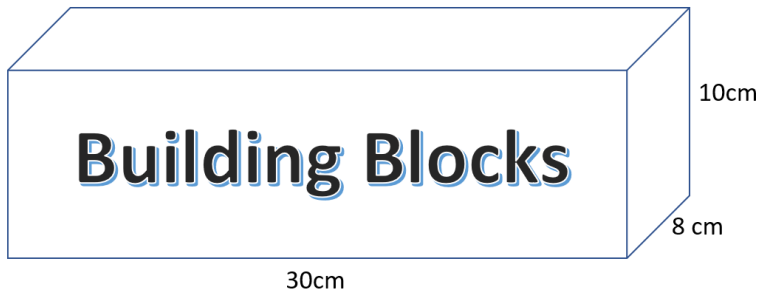
The area of the lawn is exactly equal to the area of the path

The length and breadth of the lawn, and the width of the path are all whole numbers

What are the possible measurements?

Idea taken from 'Mathematical Journeys, Departure Points' (ATM)

<https://www.atm.org.uk/Shop/KS4/Mathematical-Journeys---Departure-Points-Book/act065>



Red wooden building blocks are to be packed into a cuboid box  
The blocks are also cuboids  
The blocks measure 5cm x 2cm x 2cm  
The box measures 10cm x 30 cm x 8 cm

How many building blocks will fit in the large box?

A different sized green cuboid block is to be packed in the same sized box.  
20 green building blocks fit in the packing box  
What are the dimensions of the green block ?

