

Numerically Equal

Age 7 to 11 ★★

I want to draw a square in which the perimeter is numerically equal to the area.



Of course, the perimeter will be measured in units of length, for example, centimetres (cm) while the area will be measured in square units, for example, square centimetres (cm²).

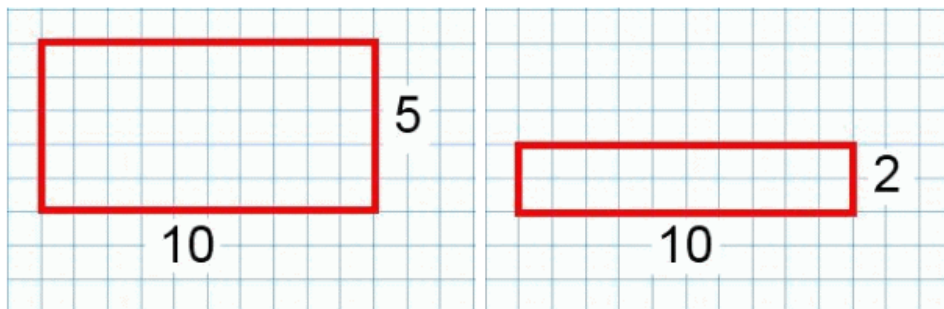
What size square will I need to draw?

What about drawing a rectangle that is twice as long as it is wide which still has a perimeter numerically equal to its area?

Can They Be Equal?

Age 11 to 14 ★

Charlie has been drawing rectangles:



The first rectangle has a perimeter of 30 units and an area of 50 square units. The second rectangle has a perimeter of 24 units and an area of 20 square units.

Charlie wondered if he could find a rectangle, with a side of length 10 units, whose perimeter and area have the same numerical value.

Can you find a rectangle that satisfies this condition?

Alison says "There must be lots of rectangles whose perimeter and area have the same numerical value."
Charlie is not so sure.

Can you find more examples of such rectangles?

Can you come up with a convincing argument to help Charlie and Alison decide who is right?