

Mathematics

# Forming and Solving Inequalities (1)

## Downloadable Resource

Mr Millar

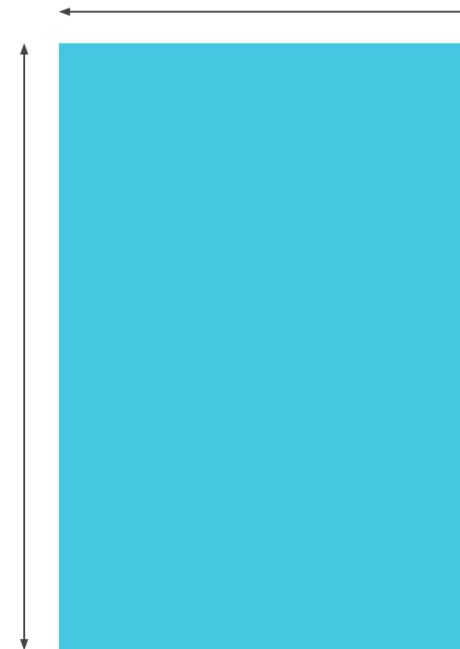


# Try this

The height of the rectangle is 2 cm longer than the width

The perimeter is less than 40 cm.

What could the dimensions be?



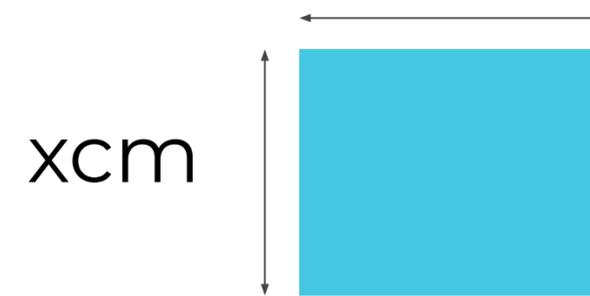
# Independent task

Find possible values of  $x$  in these two examples



The length is  $x$  cm longer.

The area is greater than  $40\text{cm}^2$ .



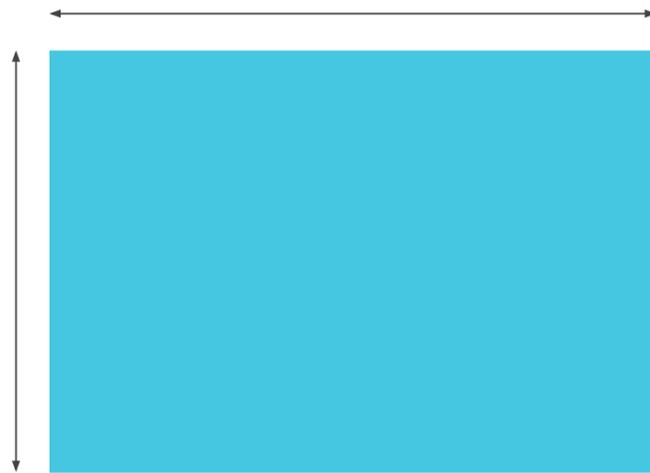
The area of the square is less than  $64\text{cm}^2$



# Explore

Here are Antoni's descriptions of the rectangle.

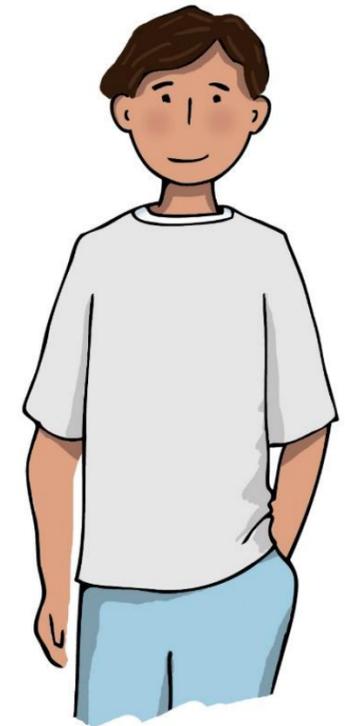
What could its dimensions be?



The perimeter is more than 26 cm

The longest side is 3 cm longer than the shortest side

The area is less than  $70 \text{ cm}^2$



# Answers



# Try this

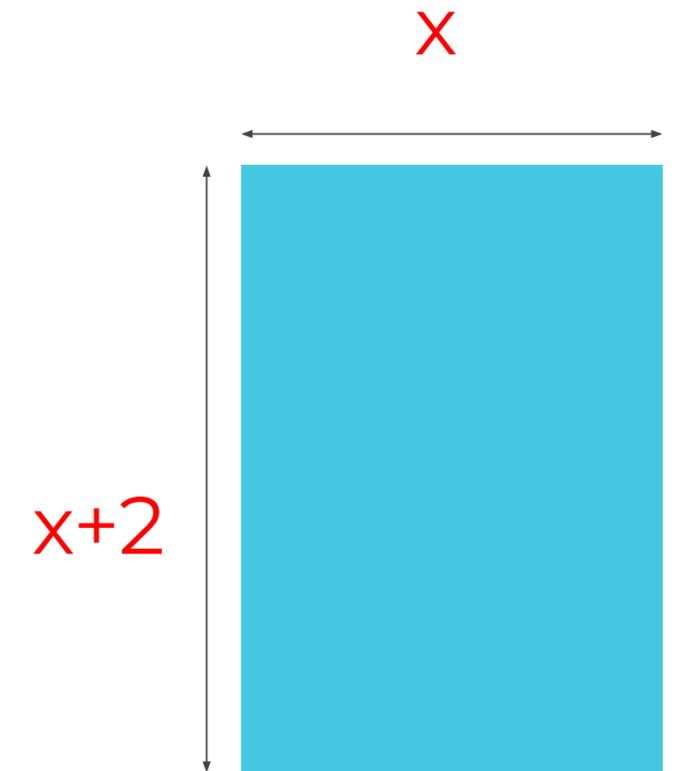
The height of the rectangle is 2 cm longer than the width

The perimeter is less than 40 cm.

What could the dimensions be?

You could try different values and see if they work (eg if width is 6cm, the height is 8cm, and the perimeter is 28cm, so this works. But if the width is 10cm, it won't work.)

This lesson has focused on setting up and solving inequalities. So if we call the width  $x$ , the height is  $x+2$  and the perimeter is  $4x + 4$ . Then we say  $4x + 4 < 40$  which solving gives  $x < 9$ .



# Try this

Find possible values of  $x$  in these two examples



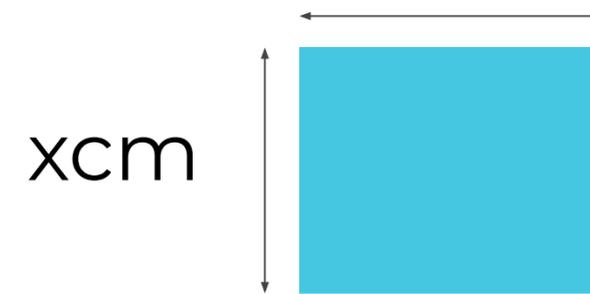
The length is  $x$  cm longer.

The area is greater than  $40\text{cm}^2$ .

$$4(4 + x) > 40$$

$$4 + x > 10$$

$$x > 6$$



The area of the square is less than  $64\text{cm}^2$

$$x^2 < 64$$

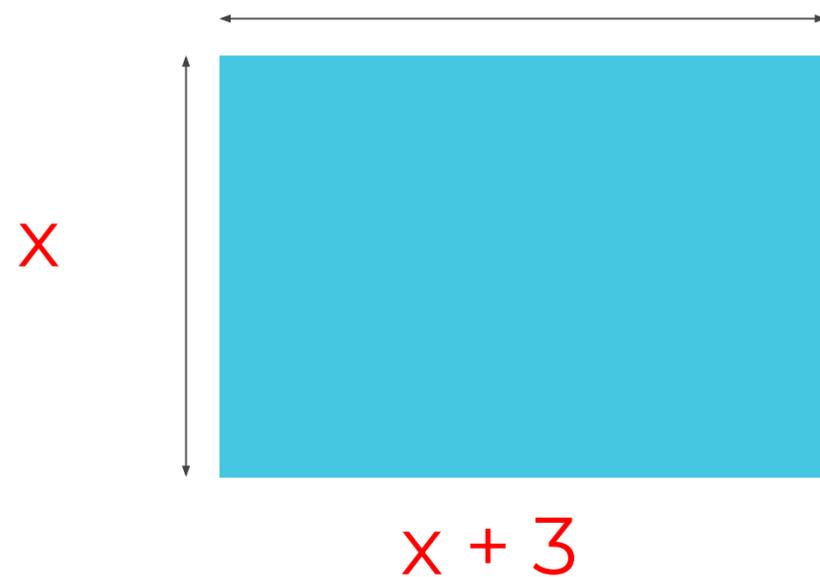
$$x < 8$$



# Try this

Here are Antoni's descriptions of the rectangle.

What could its dimensions be?



Answer:  $x$  is more than 5 but less than 7.

$$4x + 6 > 26$$

$$x > 5$$

The perimeter is more than 26 cm

The longest side is 3 cm longer than the shortest side

$$x(x + 3) < 70$$

$$x < 7$$

The area is less than  $70 \text{ cm}^2$

