

April 23rd

Find the length and width of a rectangle with perimeter 27cm and area 44cm^2 .

$$L \times W = 44 \quad (1)$$

$$2L + 2W = 27 \quad (2)$$

Re-arranging (2) gives

$$W = 13.5 - L \quad (3)$$

Substituting (3) into (1) gives

$$L(13.5 - L) = 44$$

Hence

$$L^2 - 13.5L + 44 = 0$$

Therefore

$$2L^2 - 27L + 88 = 0$$

Hence

$$(2L - 11)(L - 8) = 0$$

So there are 2 possible lengths:

$$L = 5.5 \text{ or } L = 8$$

If **length = 5.5cm** **Width = 8cm**

Which tells us that there is only one possible pair of values