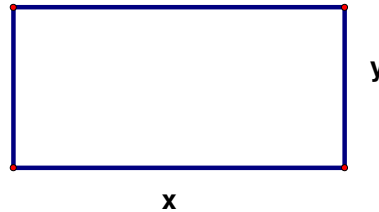


The perimeter of a rectangle is 96 centimeters. If its length is 10 centimeters greater than its width, what is the area of the rectangle?

- We first sketch the rectangle.

Let $x = \text{length}$, $y = \text{width}$



- Then $x = y + 10$ and $2x + 2y = 96$.

- Now solve the system of equations:
$$\begin{aligned} x &= y + 10 \\ 2x + 2y &= 96 \end{aligned}$$

- $$\begin{aligned} x - y &= 10 \\ x + y &= 48 \end{aligned} \quad 2x = 58 \quad , \quad x = 29$$

- Since $x = y + 10$, $y = x - 10$, $y = 29 - 10$, $y = 19$

- The area of the rectangle is $x \cdot y = 551 \text{ cm}^2$.