

Geometric relationship problems test your ability to translate written descriptive conditions into algebraic linear equations. When dealing with a standard rectangle, two fundamental dimensions define all geometric properties: **Length (L)** and **Width (W)**.

The **Perimeter (P)** of a rectangle represents the total continuous distance around the outer boundary. Because a rectangle consists of two parallel lengths and two parallel widths, the standard governing perimeter equation is defined as:

$$P = 2L + 2W$$

$$P = 2(L + W)$$

Let's translate and map the given parameters from the problem description:

- **Perimeter (P):** 58 meters
- **Length Condition:** *"The length of a rectangle is 6 meters less than three times the width."*

Step 1: Formulate the Algebraic Relationship

Let the width be represented as W.

Translate the condition for length (L) into a variable expression based on W:

$$L = 3W - 6$$

Step 2: Substitute into the Perimeter Formula

Write down the standard perimeter relation and substitute $P = 58$ and $L = 3W - 6$:

$$58 = 2(L + W)$$

$$58 = 2[(3W - 6) + W]$$

Step 3: Simplify and Solve for Width (W)

$$W = \frac{70}{8} \text{ meters} = 8.75 \text{ meters}$$

Step 4: Calculate the Length (L)

Substitute our width value back into the initial length equation to find the final dimension:

$$L = 3(8.75) - 6$$

$$L = 26.25 - 6$$

$$\mathbf{L = 20.25 \text{ meters}}$$