

A rectangular field has a perimeter of 900ft. The length is 188ft more than the width. Find the length and width of the field.

Perimeter of field equals:

$$P = 2l + 2w = 900 \quad \Rightarrow \quad l + w = 450$$

l – length of field

w - width of field

The length is 188ft more than the width:

$$l = w + 188 \quad \Rightarrow \quad l - w = 188$$

So, we have system of equations:

$$\begin{cases} l + w = 450 \\ l - w = 188 \end{cases}$$

(1)+(2) equations:

$$2l = 450 + 188$$

$$l = 319$$

From first: $w = 450 - l$

$$w = 131$$

Answer: $l = 319 \text{ ft}$, $w = 131 \text{ ft}$