

"a" and "b" Two square having total perimeter of 468 meter, square "b" is 42 meter less than square "a". What is the perimeter each of "a" and "b" separately.

**Solution:**

Assume that the side of "a" square is x, the side of "b" square is y. Total perimeter is  $4x + 4y = 468$ . Square "a" is equal  $x^2$ , square "b" is equal  $y^2$ . Then  $x^2 - y^2 = 42$

$$\begin{cases} 4x + 4y = 468 \\ x^2 - y^2 = 42 \end{cases}$$

$$\begin{cases} x + y = 117 \\ x^2 - y^2 = 42 \end{cases}$$

$$\begin{cases} x = 117 - y \\ x^2 - y^2 = 42 \end{cases}$$

$$\begin{cases} x = 117 - y \\ ((117 - y)^2 - y^2 = 42 \end{cases}$$

$$\begin{cases} x = 117 - y \\ 13689 - 234y = 42 \end{cases}$$

$$\begin{cases} x = 117 - y \\ y = \frac{13647}{234} = 58\frac{75}{234} \end{cases}$$

$$\begin{cases} x = 58\frac{159}{234} \\ y = 58\frac{75}{234} \end{cases}$$

Perimeter of "a" square  $P_a = 4x = 4 * 58\frac{159}{234} = 234\frac{84}{117}$

Perimeter of "b" square  $P_b = 4y = 4 * 58\frac{75}{234} = 233\frac{33}{117}$

**Answer:**  $234\frac{84}{117}$  m and  $233\frac{33}{117}$  m.