

"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 $x^2 - y^2 = 42$

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

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

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

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

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

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

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

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

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

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