How would the area be affected if the sides of rectangle are increased by a factor k?

Solution

Let a - one side of the rectangle, b- the second-side of the rectangle.

The area of the rectangle is calculated by the formula:

$$S = a \cdot b$$

We increase the side a of a rectangle by a factor k – we will get a · k

and we will increase the side b of the rectangle by a factor k. We'll get $b \cdot k$

Let find the area of this rectangle:

$$S = a \cdot k \cdot b \cdot k = k^2 a \cdot b$$

We can see, that area are increased by factor k^2

Answer: area are increased by factor k^2