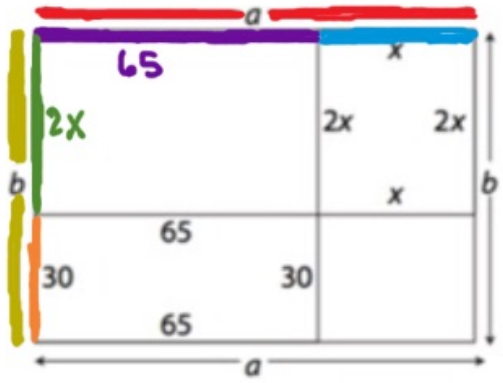
An architect is creating a template, or reusable pattern, of the design of a bathroom. One part of the bathroom has a standard size in order to fit a standard bathtub, and one part of the bathroom can vary based on what the customer wants. The architect's template is shown below, and all units are in inches. The area of a rectangle is lw, or in this case, area = ab. Find an expression to determine the total area of the bathroom for any value of x.



What does a equal in terms of x?

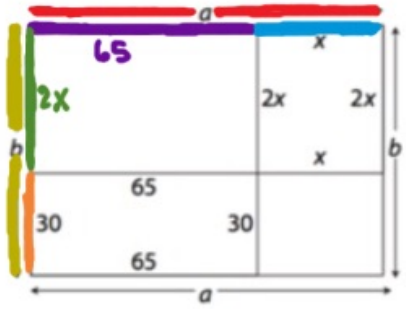
$x + 65$

What does b equal in terms in x?

$2x + 30$

Math II Big Question 1.2.2

An architect is creating a template, or reusable pattern, of the design of a bathroom. One part of the bathroom has a standard size in order to fit a standard bathtub, and one part of the bathroom can vary based on what the customer wants. The architect's template is shown below, and all units are in inches. The area of a rectangle is lw, or in this case, area = ab. Find an expression to determine the total area of the bathroom for any value of x.



Use the formula for area and expressions for a and b to write a formula for the area of the bathroom.

$(x+65)(2x+30)$

What is the simplified area of the bathroom written in terms of x?

$(x+65)(2x+30)$

$2x^2+30x+130x+1950$

$2x^2+160x+1950$