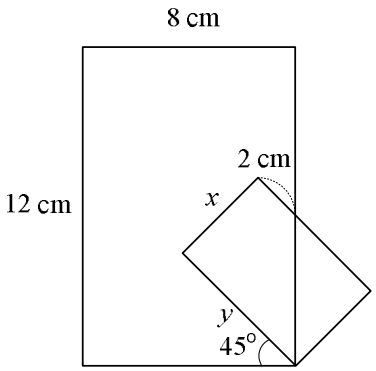
Problem:
Find the lengths x and y. Two of the rectangles are similar.



Solution:
The small rectangle is tilted by 45 degrees, so we can find the other angles with an equilateral triangle. The opposite sides are equal each other as shown. Therefore, the following relationship is found:

$$y - x = 2$$

These two rectangles are similar, so we can have the following ratio:

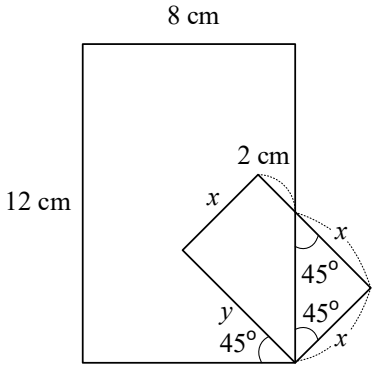
$$8:12 = x:y$$

We now have tow equations and two unknowns. The above ratio can be rewritten as

$$12x = 8y$$

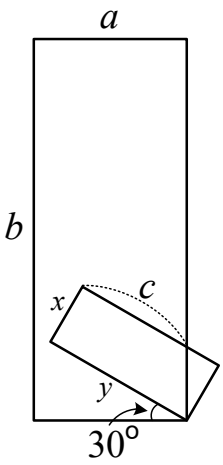
The simultaneous equations give the solution as

$$x = 4 \text{ and } y = 6$$



Now, we try a similar problem.

Problem:
Find x and y under the conditions that the rectangles are similar.

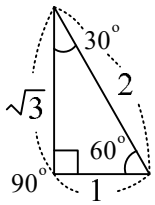


Solution:
Similarly to the previous problem, we can have

$$a:b = x:y$$

The angle will be obtained due to the geography and the triangle has a relationship as shown in the figure; thus, we have

$$c = y - \frac{1}{\sqrt{3}}x$$



These equations give us

$$x = \frac{ac}{b - \frac{a}{\sqrt{3}}}$$

$$y = c - \frac{ac}{\sqrt{3}b - a}$$