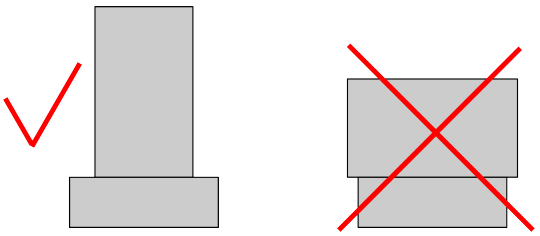
Problem of the Week

Problem A

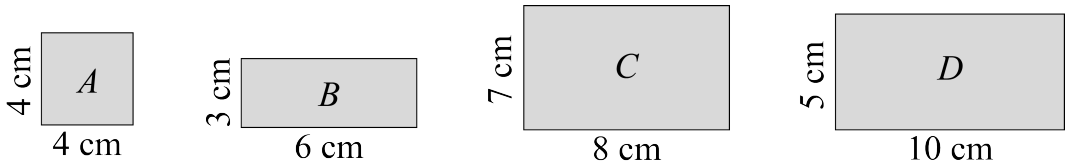
Stacking Rectangles

Lana is arranging cardboard rectangles on a table. Lana follows a rule that says she can only put one rectangle on top of another if the bottom rectangle is wider than the top rectangle.

For example the arrangement on the left is allowed, but the arrangement on the right is not allowed.



Suppose Lana has the following four rectangles:



(a) Find one way that Lana can arrange these rectangles one on top of the other while following the rule. Note that Lana is able to rotate the rectangles. Determine the total height from the bottom of the rectangle on the bottom to the top of the rectangle on the top.

(b) How can Lana arrange the rectangles one on top of the other so that the total height is as large as possible? Justify your answer. What is this height?

Themes: Computational Thinking, Geometry & Measurement