Problem of the Week
Problem B
Mystery Dimensions

Eight congruent rectangles are arranged to form a larger rectangle as shown.

(a) If the congruent rectangles each have a length of 6 cm and a width of 3 cm, what is the perimeter of the larger rectangle?

(b) Suppose that the congruent rectangles each have a longer side of length $L$ cm and a shorter side of length 4 cm. Suppose also that the perimeter of the larger rectangle is 64 cm.

(i) What is the value of $L$?
(ii) What is the area of one of the eight congruent rectangles?

**Extension:** Can you solve part (b) without knowing that the length of the shorter side of each rectangle is 4 cm? If so, how?