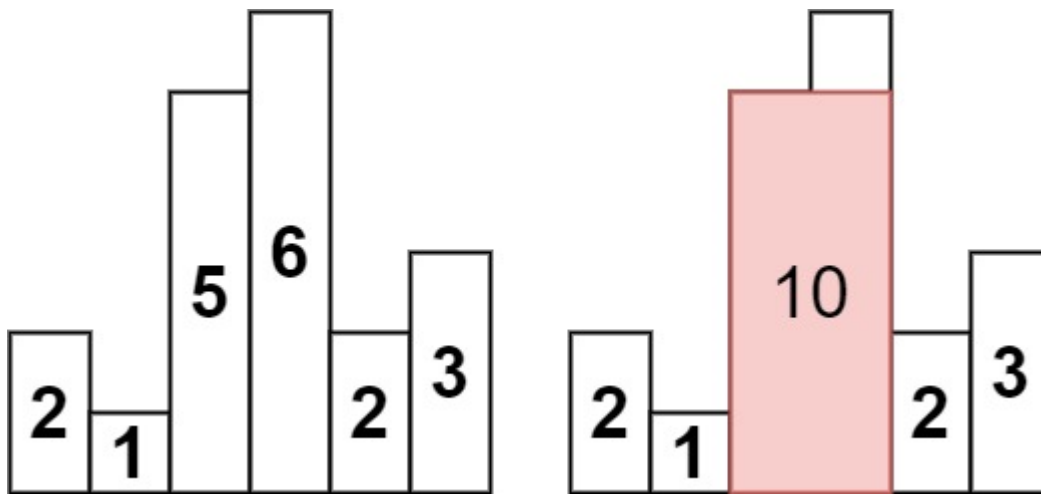


84. Longest Rectangle in Histogram

Given an array of integers heights representing the histogram's bar height where the width of each bar is 1, return *the area of the largest rectangle in the histogram*.

Example 1:



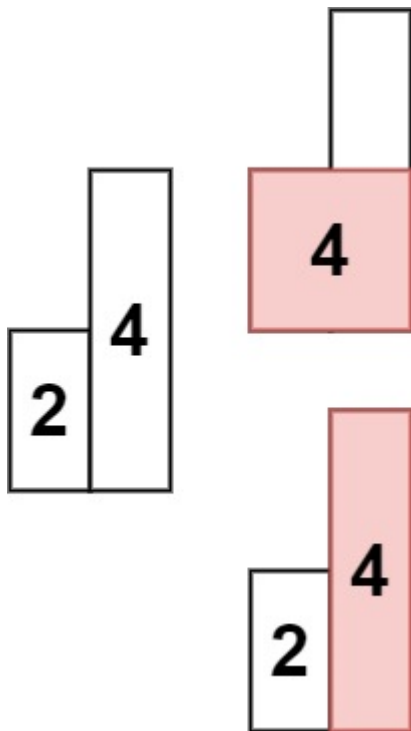
Input: heights = [2,1,5,6,2,3]

Output: 10

Explanation: The above is a histogram where width of each bar is 1.

The largest rectangle is shown in the red area, which has an area = 10 units.

Example 2:



Input: heights = [2,4]

Output: 4

Constraints:

- $1 \leq \text{heights.length} \leq 10^5$
- $0 \leq \text{heights}[i] \leq 10^4$