A fence consists of $n$ vertical boards. The width of each board is 1 and their heights may vary. You want to attach a rectangular advertisement to the fence. What is the maximum area of such an advertisement?

**Input**
The first input line contains an integer $n$: the width of the fence.
After this, there are $n$ integers $k_1, k_2, \ldots, k_n$: the height of each board.

**Output**
Print one integer: the maximum area of an advertisement.

**Constraints**
- $1 \leq n \leq 2 \cdot 10^5$
- $1 \leq k_i \leq 10^9$

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**Sample Input 1**
```
8
4 1 5 3 3 2 4 1
```

**Sample Output 1**
```
10
```