Largest Rectangle (`rectangle`)

Alice has N wooden sticks. Their lengths are $S_0, S_1, \ldots, S_{N-1}$, and all of them are positive integer numbers. Alice wants to choose four sticks so that she can create a rectangle with the sticks as sides of the rectangle (see the image below). Each stick has to correspond to one side, she cannot cut the sticks or combine two or more into one. The sticks have to be exactly as long as the side of the rectangle, they cannot be longer or shorter. Moreover, Alice wants to create the rectangle with the largest possible area.
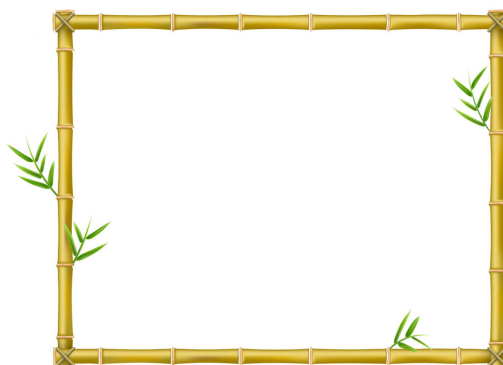

Figure 1: A rectangle of four sticks.

Can you help her and tell the maximum possible area of the rectangle that she can create from her sticks? It might not be possible to create a rectangle from the sticks: in this case your program should print 0.

☞ Among the attachments of this task you may find a template file `rectangle.*` with a sample incomplete implementation.

Input

The input file consists of:

- a line containing integer N.

- a line containing the N integers $S_0, \ldots, S_{N-1}$.

Output

The output file must contain a single line consisting of 64-bit integer A: the maximum possible area of a rectangle that Alice can make, or 0 if she cannot create a rectangle.

Constraints

- $1 \leq N \leq 100\,000$.
- $1 \leq S_i \leq 1\,000\,000$ for each $i = 0 \ldots N-1$.

Scoring

Your program will be tested against several test cases grouped in subtasks. In order to obtain the score of a subtask, your program needs to correctly solve all of its test cases.

– **Subtask 1** (0 points)   Examples.

– **Subtask 2** (10 points) $N \le 4$, $S_i \le 2$ for each $i = 0 \ldots N - 1$.

– **Subtask 3** (10 points) $S_i \le 2$ for each $i = 0 \ldots N - 1$.

– **Subtask 4** (15 points) $N \le 100$, $S_i \le 1000$ for each $i = 0 \ldots N - 1$.

– **Subtask 5** (20 points) $N \le 5000$.

– **Subtask 6** (15 points) $S_{i-1} \le S_i$ for each $i = 1 \ldots N - 1$.

– **Subtask 7** (30 points)   No additional limitations.

Examples

input	output
8 1 3 3 7 6 7 9 6	42
6 5 5 1 2 3 4	0
4 1000000 1000000 1000000 1000000	1000000000000

Explanation

In the **first sample case**, Alice can choose the sticks of lengths $6, 6, 7, 7$ to make the largest possible rectangle.

In the **second sample case**, she cannot make any rectangle, so the answer is 0.

In the **third sample case**, she can use all four sticks to create a square, which is also a rectangle.