Tom Sawyer Paints the Wall

Time Limit : 1 sec

Memory Limit : 512MB

So, last time Tom got away by making the children paint the wall for him. But the children wasted a lot of paint while he ate the apple. Anyways, Tom has again been given the task to paint a fence. The task is simple this time though because he has to use a roller brush to paint the fence. i.e. he can simply roll it on the fence and it will get painted. The fence is made of logs of 1m width but their heights are different. Something like a histogram. This roller is pretty expensive so the owner has asked Tom to tell what width of roller should he order so that maximum area of the fence is painted in a single roll, without wasting any paint. By wasting he means, the roller should not be wider than the wall height at any log on which it is rolled.

Now Tom is a lazy boy, and has asked you to help him out.
Your task is to help him tell the maximum area of wall that can be painted in a single roll without wasting the paint.

Input:
There are multiple test cases. For each test case
n : Number of logs in the fence (**Stop when n = 0**)
n numbers follow.

Output:
The maximum area painted.

Constraints:
$0 < n < 100000$
$0 <$ height of log < 1000000

Sample Input :
7
2 1 4 5 1 3 3
4
1000 1000 1000 1000
0

Sample Output:
8
4000