You are developing a smartphone app. You have a list of potential customers for your app. Each customer has a budget and will buy the app at your declared price if and only if the price is less than or equal to the customer's budget.

You want to fix a price so that the revenue you earn from the app is maximized. Find this maximum possible revenue.

For instance, suppose you have 4 potential customers and their budgets are 30, 20, 53 and 14. In this case, the maximum revenue you can get is 60.

Input format
Line 1 : N, the total number of potential customers.

Lines 2 to N+1: Each line has the budget of a potential customer.

Output format
The output consists of a single integer, the maximum possible revenue you can earn from selling your app.

Sample Input 1
4
30
20
53
14

Sample Output 1
60

Sample Input 2
5
40

3
65
33
21

Sample Output 2
99

Test data
Each customers' budget is between 1 and 108, inclusive.

Subtask 1 (30 marks) : $1 \le N \le 5000$.

Subtask 2 (70 marks) : $1 \le N \le 5 \times 105$.

Live evaluation data
There are 15 test inputs on the server during the exam. The grouping into subtasks is as follows.

• Subtask 1: Test inputs 0,…,5

• Subtask 2: Test inputs 6,…,14

Solution

```cpp
#include <iostream>
#include<bits/stdc++.h>
#define ll long long
using namespace std;

int main() {
    ll n ,input;
    cin>>n;

    vector<ll> c1;
    c1.clear();
```

```cpp
for(ll i = 0 ; i < n ; i++ ){
    cin>>input;
    c1.push_back(input);
}

sort(c1.begin(),c1.end());


ll amount = 0;
ll revenue = 0;
for(ll i = 0 ; i < n ; i++ ){
    amount = 0;
    amount = c1[i]*(n-i);
    if(amount >  revenue)
       revenue = amount;
}

cout<<revenue<<endl;
        return 0;
}
```