



Array Pairs

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Problem

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Consider an array of n integers, $A = [a_1, a_2, \dots, a_n]$. Find and print the total number of (i, j) pairs such that $a_i \times a_j \leq \max(a_i, a_{i+1}, \dots, a_j)$ where $i < j$.

Input Format

The first line contains an integer, n , denoting the number of elements in the array.

The second line consists of n space-separated integers describing the respective values of a_1, a_2, \dots, a_n .

Constraints

- $1 \leq n \leq 5 \times 10^5$
- $1 \leq a_i \leq 10^9$

Scoring

- $1 \leq n \leq 1000$ for 25% of the test cases.
- $1 \leq n \leq 10^5$ for 50% of the test cases.
- $1 \leq n \leq 5 \times 10^5$ for 100% of the test cases.

Output Format

Print a long integer denoting the total number (i, j) pairs satisfying $a_i \times a_j \leq \max(a_i, a_{i+1}, \dots, a_j)$ where $i < j$.

Sample Input

```
5
1 1 2 4 2
```

Sample Output

```
8
```

Explanation

There are eight pairs of indices satisfying the given criteria: $(1, 2)$, $(1, 3)$, $(1, 4)$, $(1, 5)$, $(2, 3)$, $(2, 4)$, $(2, 5)$, and $(3, 5)$. Thus, we print 8 as our answer.

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Submissions: [555](#)

Max Score: 100

Difficulty: Advanced

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C++



```
1 #include <cmath>
2 #include <cstdio>
3 #include <vector>
4 #include <iostream>
5 #include <algorithm>
6 using namespace std;
7
8
9 int main() {
10     /* Enter your code here. Read input from STDIN. Print output to STDOUT */
11     return 0;
12 }
13
```

Line: 1 Col: 1

 [Upload Code as File](#)☐ Test against custom input

Run Code

Submit Code

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