Triangles

2022/2023 SEASON – SIXTH ROUND

Nikolay is a comprehensively developed person - smart, handsome, a mathematician, an actor, and from recently a programmer as well. On the famous competitive programming website *itcode.gb*, he read the following problem:

"You have n catheti with lengths $x_1, x_2, \dots, x_n$. You want to build right triangles, such that

(1) Each cathetus is used in the construction of at most 1 right triangle.
(2) Each triangle has exactly 2 catheti.
(3) The total length of the hypotenuses of the triangles is maximal."

After solving it, he gave it to his younger brother, who could not solve it, so he asked you for help.

Input

The first line of the file **triangles.in** contains the number n and the second line contains n numbers - $x_1, x_2, \dots, x_n$

Output

Print the answer in the file **triangles.out**. The answer will be considered as correct if the absolute or relative error is $\leq 10^{-9}$

Constraints

$1 \leq n \leq 100\,000$

$1 \leq x_i \leq 1000$, x_i has at most 6 decimal digits

Time limit: 0.8 sec.
Memory limit: 256 MB.

Sample test

Input (triangles.in)	Output (triangles.out)
2 3 4	5.000000000