Problem D. Country Meow

Input file: standard input
Output file: standard output

In the 24^{th} century, there is a country somewhere in the universe, namely Country Meow. Due to advanced technology, people can easily travel in the 3-dimensional space.

There are N cities in Country Meow. The i-th city is located at (x_i, y_i, z_i) in Cartesian coordinate.

Due to the increasing threat from Country Woof, the president decided to build a new combatant command, so that troops in different cities can easily communicate. Hence, the Euclidean distance between the combatant command and any city should be minimized.

Your task is to calculate the minimum Euclidean distance between the combatant command and the farthest city.

Input

The first line contains an integer N ($1 \le N \le 100$).

The following N lines describe the i-th city located.Each line contains three integers x_i, y_i, z_i ($-100000 \le x_i, y_i, z_i \le 100000$).

Output

Print a real number — the minimum Euclidean distance between the combatant command and the farthest city. Your answer is considered correct if its absolute or relative error does not exceed 10^{-3}. Formally, let your answer be a, and the jury's answer be b. Your answer is considered correct if $\frac{|a-b|}{\max(1,|b|)} \le 10^{-3}$.

Examples

standard input	standard output
3 0 0 0 3 0 0 0 4 0	2.5000195345
4 0 0 0 1 0 0 0 1 0 0 0 1	0.8164984201