

# Minimize Me

## Problem description

You get two sets of positive numbers and  $a_1, \dots, a_n$  and  $b_1, \dots, b_n$ . They define a function

$$f: x \mapsto |x - a_1| + \dots + |x - a_n| + (x - b_1)^2 + \dots + (x - b_n)^2.$$

You should find the real number  $x$  that minimizes  $f(x)$  up to a relative error of  $10^{-6}$ .

## Input

One number  $1 \leq n \leq 500$  followed by  $a_1, \dots, a_n, b_1, \dots, b_n$  each in a single line. There is a bound on the numbers:  $0 \leq a_i, b_i \leq 10^5$ .

## Output

One single floating point number, the result.

## Sample input/output

Input	Output
3 0.000000000 0.098539467 4.163100159 1.766426425 3.646022484 0.913306121	1.99999997