

PLOT twist

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output
points: 100 · problem code: plottwist · author: Parsa

Input

The first line contains a single integer n , the number of points on a plane. Each of the next n lines contains two real coordinates x_i, y_i the i th point specified with exactly 2 fractional digits.

Output

Output a real number representing the answer. The absolute or relative error of your answer should be at most 10^{-2} .

Constraints

$1 \leq n \leq 1000$ $-1000 \leq x_i, y_i \leq 1000$

Example 1

Input

```
8
-2.14 2.06
-1.14 2.04
-2.16 1.46
-2.14 0.70
-1.42 0.40
-0.94 -0.48
-1.42 -1.28
-2.16 -1.62
```

```
5.410
```

Example 2

Input

```
5
2.26 1.44
2.28 0.64
2.30 -0.30
1.58 0.66
3.24 0.66
```

```
5.620
```

Example 3

Input

```
8
6.98 2.06
6.40 1.12
5.98 0.24
5.54 -0.60
7.16 0.30
7.82 1.24
8.34 0.24
8.74 -0.76
```

```
5.480
```

Example 4

Input

```
5
10.44 2.06
10.90 0.80
11.48 -0.48
12.06 0.76
12.54 2.06
```

```
6.040
```

Example 5

Input

```
8
16.94 2.42
15.72 2.38
14.82 1.58
14.88 0.50
15.76 -0.16
16.86 -0.20
17.00 0.88
16.40 0.92
```

```
6.040
```

Example 6

Input

```
7
20.62 3.00
21.06 2.28
21.56 1.36
21.66 0.56
21.64 -0.52
22.14 2.32
22.62 3.04
```

```
6.720
```