B. Quest to World Final

time limit per test: 2 s.
memory limit per test: 256 MB

Char dreams of winning the **ICPC World Final**! To prepare for this ultimate challenge, he focuses on improving two crucial skills: *algorithmic thinking* and *implementation accuracy*. To be fully prepared, Char must gain at least A points in algorithm skill and B points in implementation skill.

Char has identified n practice problems that can help him improve. Solving the i-th problem grants a_i algorithm points per hour and b_i implementation points per hour. Char can switch between problems at any time, and gains skill proportionally based on the time spent on each problem. However, he can only work on one problem at a time.

Find the real value equal to the minimum number of hours Char needs to reach or exceed both of his skill goals.

Input

The first line of the input contains three integers n, A and B ($1 \le n \le 100\,000, 1 \le A, B \le 1\,000\,000$) — the number of problems and the required number of algorithm and implementation skill points.

Each of the next n lines contains two integers a_i and b_i ($1 \le a_i, b_i \le 1\,000\,000$) — the hourly increase in algorithm and implementation skills for solving the i-th problem.

Output

Print a real value — the minimum number of hours Char needs to reach the required amount of algorithm and implementation skill. Your answer will be considered correct if its absolute or relative error does not exceed 10^{-6}.

Examples

input Copy

```
3 20 20
6 2
1 3
2 6
```

output Copy

```
5.000000000000000
```

input Copy

```
4 1 1
2 3
3 2
2 3
3 2
```

output Copy

```
0.400000000000000
```

Note

Sample 1: Char will spend 2.5 hours each on problem 1 and problem 3.

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→ Group Contests
- Line Sweep - Homework (Extra Credit)
- Convex Hull - Preclass
- Number Theory I - Homework
- Line Sweep - Preclass
- Number Theory II - Homework
- Combinatorics - Homework
- Geometry - Preclass
- Geometry - Homework
- Convex Hull - Homework (Extra Credit)
- Rabin Karp - Homework
- Number Theory II - Preclass
- Combinatorics - Preclass
- DP TSP - Homework
- KMP - Homework
- DP Tree - Homework
- Number Theory I - Preclass
- KMP - Preclass
- DP Palindromes - Homework
- Rabin Karp - Preclass
- DP Edit Distance - Homework
- DP Knapsack - Homework
- DP TSP - Preclass
- DP Longest Increasing Subsequence - Homework
- DP Intro - Homework
- DP Tree - Preclass
- Greedy - Homework
- Fenwick Tree - Homework