C. Pair Selection

time limit per test: 2 seconds
memory limit per test: 512 megabytes
input: standard input
output: standard output

Given n pairs of positive integers $(a_1, b_1), (a_2, b_2), \ldots, (a_n, b_n)$. Select k ($1 \le k \le n$) of them $i_1, i_2, \ldots, i_k$ so that the ratio $\frac{a_{i1}+a_{i2}+\cdots+a_{ik}}{b_{i1}+b_{i2}+\cdots+b_{ik}}$ is maximum possible.

Input

The first line contains integers n and k ($1 \le k \le n \le 10^5$). The next n lines contain pairs of integers a_i, b_i ($1 \le a_i, b_i \le 10^5$).

Output

Print the required maximum ratio. The answer will be considered correct if the relative or absolute error does not exceed 10^{-6}.

Examples

input Copy

```
3 2
10 3
9 5
7 4
```

output Copy

```
2.4285714286
```

input Copy

```
8 3
4 2
4 2
2 2
1 5
5 3
3 5
2 2
5 3
```

output Copy

```
1.8571428571
```