

## Problem H. Classic: N Real DNA Pots

Input file:           standard input  
Output file:         standard output  
Time limit:          2 seconds  
Memory limit:       1024 megabytes

*First we can ..., then I don't know.*

— mysterious oscar

There are  $n$  points on the two-dimensional plane. The coordinate of the  $i$ -th point is  $(x_i, y_i)$ . The slope of the segment connecting two points  $i, j$  such that  $x_i \neq x_j$  is  $\frac{y_i - y_j}{x_i - x_j}$ .

Please select  $k$  points such that the minimum slope of the segment connecting any two points is maximized. Output the minimum slope.

### Input

The first line contains two integers  $n, k$  ( $2 \leq k \leq n \leq 10^5$ ).

The  $i$ -th of the following  $n$  lines contains two integer  $x_i, y_i$  ( $0 \leq x_i, y_i \leq 10^9$ ). It is guaranteed that  $x_i < x_{i+1}$  for  $1 \leq i < n$ .

### Output

Output one real number, denoting the answer.

Your answer will be considered correct if its absolute or relative error does not exceed  $10^{-6}$ . Formally, let your answer be  $a$ , and the jury's answer be  $b$ . Your answer will be considered correct if  $\frac{|a-b|}{\max(1, |b|)} \leq 10^{-6}$ .

### Examples

standard input	standard output
4 3 1 2 2 4 3 3 4 1	-1.0
2 2 1 1 5 3	0.5

### Note

Where are the  $n$  real DNA pots?