

A. Wasted Time

time limit per test: 2 seconds
 memory limit per test: 256 megabytes
 input: standard input
 output: standard output

Mr. Scrooge, a very busy man, decided to count the time he wastes on all sorts of useless stuff to evaluate the lost profit. He has already counted the time he wastes sleeping and eating. And now Mr. Scrooge wants to count the time he has wasted signing papers.

Mr. Scrooge's signature can be represented as a polyline $A_1A_2\dots A_n$. Scrooge signs like that: first it places a pen at the point A_1 , then draws a segment from point A_1 to point A_2 , then he draws a segment from point A_2 to point A_3 and so on to point A_n , where he stops signing and takes the pen off the paper. At that the resulting line can intersect with itself and partially repeat itself but Scrooge pays no attention to it and never changes his signing style. As Scrooge makes the signature, he never takes the pen off the paper and his writing speed is constant — 50 millimeters per second.

Scrooge signed exactly k papers throughout his life and all those signatures look the same.

Find the total time Scrooge wasted signing the papers.

Input

The first line contains two integers n and k ($2 \leq n \leq 100$, $1 \leq k \leq 1000$). Each of the following n lines contains the coordinates of the polyline's endpoints. The i -th one contains coordinates of the point A_i — integers x_i and y_i , separated by a space.

All points A_i are different. The absolute value of all coordinates does not exceed 20. The coordinates are measured in millimeters.

Output

Print one real number — the total time Scrooges wastes on signing the papers in seconds. The absolute or relative error should not exceed 10^{-6} .

Examples

input
2 1 0 0 10 0
output
0.200000000

input
5 10 3 1 -5 6 -2 -1 3 2 10 0
output
6.032163204

input
6 10 5 0 4 0 6 0 3 0 7 0 2 0

→ Attention

Package for this problem was not updated by the problem writer or Codeforces administration after we've upgraded the judging servers. To adjust the time limit constraint, solution execution time will be multiplied by 2. For example, if your solution works for 400 ms on judging servers, then value 800 ms will be displayed and used to determine the verdict.

Codeforces Beta Round #93 (Div. 2 Only)

Finished

→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ACM-ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.



Start virtual contest

→ Problem tags

geometry

No tag edit access

→ Contest materials

- Announcement 
- Tutorial 

output
3.000000000