

C. Ancient Berland Circus

time limit per test: 2 seconds
memory limit per test: 64 megabytes

Nowadays all circuses in Berland have a round arena with diameter 13 meters, but in the past things were different.

In Ancient Berland arenas in circuses were shaped as a regular (equiangular) polygon, the size and the number of angles could vary from one circus to another. In each corner of the arena there was a special pillar, and the rope strung between the pillars marked the arena edges.

Recently the scientists from Berland have discovered the remains of the ancient circus arena. They found only three pillars, the others were destroyed by the time.

You are given the coordinates of these three pillars. Find out what is the smallest area that the arena could have.

Input

The input file consists of three lines, each of them contains a pair of numbers — coordinates of the pillar. Any coordinate doesn't exceed 1000 by absolute value, and is given with at most six digits after decimal point.

Output

Output the smallest possible area of the ancient arena. This number should be accurate to at least 6 digits after the decimal point. It's guaranteed that the number of angles in the optimal polygon is not larger than 100.

Examples

input	Copy
0.000000 0.000000	
1.000000 1.000000	
0.000000 1.000000	
output	Copy
1.00000000	

→ Attention

The 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, a solution execution time will be multiplied by 2. For example, if your solution works for 400 ms on judging servers, then the value 800 ms will be displayed and used to determine the verdict.

Codeforces Beta Round 1

Finished

Practice



→ 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 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

→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

→ Submit?

Language:
GNU G++23 14.2 (64 bit, ms)

Choose file:
No file chosen

→ Last submissions

Submission	Time	Verdict
315922668	Apr/17/2025 10:24	Accepted
315845002	Apr/16/2025 17:29	Wrong answer on test 1
315844124	Apr/16/2025 17:23	Wrong answer on test 1
315843499	Apr/16/2025 17:18	Compilation error

→ Problem tags

No tag edit access

→ Contest materials

- Tutorial (en) 