Problem B. Astronomy Problem

Input file:	`astronomy.in`
Output file:	`astronomy.out`
Time limit:	3 seconds
Memory limit:	256 megabytes

Flatland astronomy scientists are going to start permanent observations of n stars. The universe where the Flatland planet is located is two-dimensional, so each star is characterized by two coordinates (measured in parsecs).

The scientists are looking for the point at space to put the observation station at. If two stars would be viewed at a small angle from the observation point, various characteristics of the stars that are to be investigated would interfere, so the scientists would like to find such point that the smallest angle between the two stars viewed from that point, were as large as possible.

Also the observation station must not be too close to any star. The distance from the station to the closest star must be at least 1 parsec.

Help the scientists to find the location for their station.

Input

The first line of the input file contains n — the number of stars ($3 \le n \le 10$). The following n lines contain two integer numbers each — the coordinates of stars (coordinates do not exceed 10^3 by their absolute values).

Output

Output two real numbers — the coordinates of the point where scientists should put their station. If there are several solutions, output any one.

Verifying program will use precision of 10^{-5} when making comparisons of floating point numbers.

Example

astronomy.in	astronomy.out
4 0 0 10 0 0 10 10 10	5 5