Problem E. Five Points

Input file:	*standard input*
Output file:	*standard output*
Time limit:	2 seconds
Memory limit:	512 mebibytes

You have placed n distinct points on a plane. Then you will draw a half-line starting from each point in a direction chosen uniformly at random and independently from other points. Find the probability that no two half-lines will intersect.

Input

The first line of the input contains a single integer n ($2 \le n \le 5$), denoting the number of points.

The i-th of the following n lines contains two integers x_i and y_i ($-100 \le x_i, y_i \le 100$), denoting the coordinates of the i-th point.

No two points coincide.

Output

Display the probability that no two half-lines will have a common point. Your answer must be correct to within an absolute or relative error of 10^{-9}.

Examples

standard input	standard output
2 0 0 1 1	0.7500000000000
3 7 8 7 7 8 8	0.4303385416667