

# Maximal Angle

Input file: `stdin`  
Output file: `stdout`  
Time limit: 0.3 seconds  
Memory limit: 256 megabytes

There are  $n$  points  $A_1, \dots, A_n$  in the plane such that no three of them lie on a common line. For each pair  $(i, j)$  ( $1 \leq i < j \leq n$ ) you have to find such index  $k$  (different from  $i$  and  $j$ ) that the angle  $A_i A_k A_j$  is the largest possible.

## Input

The first line contains one integer  $n$  ( $3 \leq n \leq 1000$ ).

$i$ -th of the next  $n$  lines contains two integer  $x_i$  and  $y_i$  — coordinates of point  $A_i$  ( $-10^9 \leq x_i, y_i \leq 10^9$ ).

It is guaranteed that all points are distinct and no three points lie on a common line.

It is also guaranteed that all tests except for the sample cases were constructed in the following manner: jury chooses preliminary positions of the points, then each coordinate of each point is increased by a random number between 0 and 1000. If the resulting test is invalid, the generation starts over.

## Output

Print  $n - 1$  line.

$i$ -th string should contain  $i$  integers.  $j$ -th number of  $i$ -th string should be the answer for the pair  $(j, i + 1)$ .

If there are several valid answers, print any of them.

## Examples

stdin	stdout
4	3
0 0	2 1
1 0	2 1 1
0 1	
-1 -1	