

# Maximize the Area

Input file:            standard input  
Output file:           standard output  
Time limit:            4 seconds  
Memory limit:         256 megabytes

You are given  $n$  points on a plane. Find the largest area triangle or quadrilateral with vertices at some of these points.

## Input

The first line contains one integer  $n$  ( $3 \leq n \leq 4000$ ) — the number of points.

Each of the next  $n$  lines contains two integers  $x_i, y_i$  ( $-10^9 \leq x_i, y_i \leq 10^9$ ) — the  $i$ -th point. No two points coincide.

It is guaranteed that no three points are collinear.

## Output

On the first line, output one integer  $m$  ( $m \in \{3, 4\}$ ) — the number of points in an optimal polygon.

On the second line, output a space-separated list of indices  $i_1, \dots, i_m$  — the indices of the vertices in an optimal polygon. No index must repeat, and no two edges of the polygon may intersect internally. Output the vertices in either clockwise or counterclockwise order.

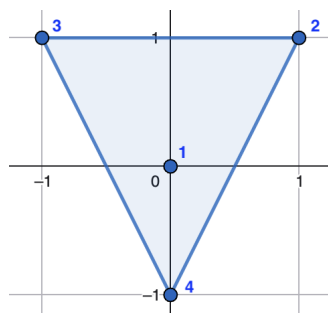
If there are multiple triangles or quadrilaterals with the same maximum area, output any.

## Examples

standard input	standard output
4 0 0 1 1 -1 1 0 -1	3 2 3 4
5 1 0 1 1 -1 1 -1 -1 0 -1	4 4 1 2 3

## Note

The only optimal shape in the first test case is the triangle of area 2 with vertices at points 2, 3, 4.



In the second test case, there are two optimal quadrilaterals indicated below. Any one of them is considered correct.

