

There are N different points in a plane.

We say that the triangle formed by some three points as corners is a **super-triangle** if the number of points inside this triangle is **as large as possible**. We consider the points **in the corners** or **on the sides** of the triangle as being **inside** the triangle.

Write a program that will, among given points, find three points that form some super-triangle.

input data

The first line of input contains an integer N , $3 \leq N \leq 300$.

Each of the following N lines contains two integers – the coordinates of one point.

Note: the test data will be such that there will be at least three non-collinear points.

output data

The first line of output should contain the number of points inside the super-triangle.

The second line should contain three numbers – **indices** of the three corner points of the super-triangle, **in any order**.

examples

input

```
6
1 3
2 3
2 1
3 1
3 2
4 4
```

output

```
5
1 4 6
```

input

```
9
1 1
2 2
3 3
2 1
3 2
3 1
4 2
4 1
5 1
```

output

```
9
1 9 3
```

input

```
13
1 3
2 4
3 1
4 1
4 2
4 3
4 4
4 5
5 1
5 2
6 1
6 5
7 3
```

output

```
9
3 11 8
```