4090: [Neerc2013]Easy Geometry

Time Limit: 10 Sec Memory Limit: 128 MB

Submit: 3 Solved: 0

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Description

在二维世界中，有片地方的地形是折线形的，并且顶
点的横坐标严格单调上升，顶点不超过 10 000 个。
在这么一片地方要修建不超过 10 000 座太阳能塔。每座塔的塔高均已确定。
阳光的角度是α。太阳能塔和地形之间会相互遮盖。求一个建设方案，
使得每座塔被阳光照射到的长度总和最大。

Input

The first line contains a single integer n — the number of sides of the polygon ($3 \leq n \leq 100\,000$).

The following n lines contain Cartesian coordinates of the polygon's vertices — two integers x_i and y_i ($-10^9 \leq x_i, y_i \leq 10^9$) per line. Vertices are given in the clockwise order.

The polygon is convex.

Output

Output four real numbers x_{min}, y_{min}, x_{max} and y_{max} — the coordinates of two rectangle's corners ($x_{min} < x_{max}$, $y_{min} < y_{max}$). The rectangle must fit into the polygon and have the maximum possible area.

The absolute precision of the coordinates should be at least 10^{-5}.

The absolute or relative precision of the rectangle area should be at least 10^{-5}. That is, if A' is the actual maximum possible area, the following must hold: $\min(|A - A'|, \frac{|A-A'|}{A'}) \leq 10^{-5}$.

Sample Input

```
4

5 1

2 4

3 7
```

```
7 3
```

Sample Output

```
2.527257343310017 3.472742656689983

4.527257275481722 5.472742724518278
```

HINT

请不要提交，尚无SPJ

Source

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