Concave Polygon

You are given the cartesian coordinates of a set of points in a $2\mathrm{D}$ plane (in no particular order). Each of these points is a corner point of some Polygon, P, which is not self-intersecting in nature. Can you determine whether or not P is a concave polygon?

Input Format

The first line contains an integer, N, denoting the number of points.
The N subsequent lines each contain 2 space-separated integers denoting the respective x and y coordinates of a point.

Constraints

- $3 \leq N \leq 1000$
- $0 \leq x, y \leq 1000$

Output Format

Print `YES` if P is a concave polygon; otherwise, print `NO`.

Sample Input

```
4
0 0
0 1
1 1
1 0
```

Sample Output

```
NO
```

Explanation

The given polygon is a square, and each of its 4 internal angles are 90°. As none of these are over 180°, the polygon is *not* concave and we print `NO`.

Scoring

The percentage score awarded for your submission will be:

```
100 - 2*(percentage of tests which you solve incorrectly)
```

If this value is negative, the percentage score for your submission will be 0.
So if you get half or more of the tests incorrect, your score will be a zero.