

ICPC Southeast USA Regional Contest

Windmill Pivot

Time limit: 10 seconds

Consider a set of points P in the plane such that no 3 points are collinear. Construct a *windmill* as follows:

- Choose a point $p \in P$ and a starting direction such that the line through p in that direction does not intersect any other points in P . Draw that line (Note: *line*, NOT *ray*).
- Rotate the line clockwise like a windmill about the point p as its pivot until the line intersects another point $q \in P$. Designate that point q to be the new pivot, and then continue the rotation. This is called *promoting* point q .
- Continue this process until the line has rotated a full 360° , returning to its original direction (it can be shown that the line will also return to its original position after a 360° rotation).

During this process, a given point in P can be a pivot multiple times. Considering all possible starting pivots and orientations, find the maximum number of times that a single point can be *promoted* during a single 360° rotation of a windmill. Note that the first point is a pivot, but not *promoted* to be a pivot at the start.

Input

The first line of input contains a single integer n ($2 \leq n \leq 2000$), which is the number of points $p \in P$.

Each of the next n lines contains two space-separated integers x and y ($-10^5 \leq x, y \leq 10^5$). These are the points. Each point will be unique, and no three points will be collinear.

Output

Output a single integer, which is the maximum number of times any point $p \in P$ can be *promoted*, considering a full 360° rotation and any arbitrary starting point.



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Sample Input	Sample Output
3 -1 0 1 0 0 2	2
6 0 0 5 0 0 5 5 5 1 2 4 2	3