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 $\boldsymbol{n}$ ($2 \leq \boldsymbol{n} \leq 2000$), which is the number of points $p \in P$.

Each of the next $\boldsymbol{n}$ lines contains two space-separated integers $\boldsymbol{x}$ and $\boldsymbol{y}$ ($-10^5 \leq \boldsymbol{x}, \boldsymbol{y} \leq 10^5$). 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.

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