Problem K. Security at Museums

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	512 megabytes

Recently a museum of arts in Byteland is open to the public. The museum is modeled as a polygon, and there is an art placed on each vertex of the polygon.

A group of thieves are coveting the arts in the museum and they have chosen at least two arts to steal from the museum at night when all is still. After sneaking into the museum, each of them will work on stealing one of the chosen art simultaneously.

To be on the safe side, the thieves have chosen the arts in such a manner that every two thieves can see each other, i.e., every point of the straight line segment between them lies in the interior or on the boundary of the museum, when they are working on stealing the arts.

You, the administrator of the museum, need to anticipate the thieves' actions, i.e., compute the number of different sets of the arts that might be chosen by the thieves, to ruin their plans. The answer could be extremely large, so you only need to output it modulo 998 244 353.

Input

The first line contains an integer n ($3 \le n \le 200$), specifying the number of vertices of the polygon.

Then n lines follow, each containing two integers x and y ($-10^6 \le x, y \le 10^6$) that give the coordinates (x, y) of the vertices of the polygon in counter-clockwise order.

The polygon is simple, i.e., its vertices are distinct and no two edges of the polygon intersect or touch, except that consecutive edges touch at their common vertex. In addition, no two consecutive edges are collinear.

Output

Output a line containing a single integer, indicating the number of different sets of arts that might be chosen by the thieves modulo 998 244 353.

Examples

standard input	standard output
7 0 20 40 0 40 20 70 50 50 70 30 50 0 50	56
3 0 2022 -2022 -2022 2022 0	4

Note

In the second sample case, all the sets that contain at least two arts are counted.