Far Above Cayuga's Water

Problem ID: abovecayuga

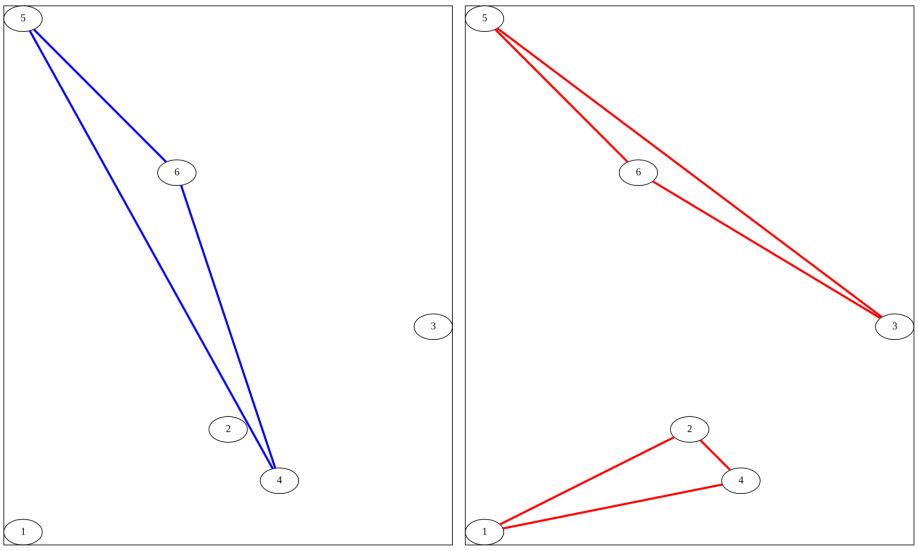
"Far above Cayuga's waters,
With its waves of blue,
Stands our noble Alma Mater,
Glorious to view."

- Far Above Cayuga's Water

"Far Above Cayuga's Waters" is Cornell University's alma mater. The lyrics were written circa 1870 by roommates Archibald Croswell Weeks (Class of 1872) and Wilmot Moses Smith (Class of 1874) and were set to the tune of "Annie Lisle," a popular 1857 ballad by H. S. Thompson about a heroine dying of tuberculosis.

Knowing this song well, Alice, the brave Queen-Knight, wonders what is really there far above Lake Cayuga's water. So she looked at a satellite map and found many points of interest, such as the Herbert F. Johnson Museum of Art, the Cornell Botanic Gardens, the Bloomberg Center of Cornell Tech, and even the new Cornell Ann S. Bowers College of Computing and Information Science building (which is mostly occupied by the department of post-quantum machine learning). What is even more curious about this image is that she could draw many triangles out of those points! Maybe triangles are what's really there?

Given N points on a 2D plane, what is the maximum number of triangles with positive area one can draw using those points as vertices and using each point at most once?



The blue subfigure forms one triangle (note that you can't form another triangle with the three remaining points) while the red one forms two.Two is the maximum possible number of triangles, so the answer is 2. This drawing reflects sample input 1 below.

Input

The first line of the input contains a single integer N, $1 \leq N \leq 10^5$, the total number of points.

Each of the following N lines contains two integers x, y, $1 \leq x, y \leq 10^9$, the coordinate of a point of interest. The input guarantees that all coordinates are different.

Output

Output a single integer, the maximum number of triangles one can draw under the restriction.

Sample Input 1

```
6
1 1
5 3
9 5
6 2
1 11
4 8
```

Sample Output 1

```
2
```

Sample Input 2

```
8
1 1
2 2
3 3
4 4
5 5
6 6
7 7
8 8
```

Sample Output 2

```
0
```