

## C. VENDING

The university finally decided to install some popular vending machines at various strategic places in the campus. In fact, to compensate for the previous lack of machines, they decided to install as many machines as possible. Surprisingly enough, the campus is not going to be choked with new machines because there are some quite serious legal limitations regarding the locations of the machines. The university has marked all possible vending machine locations and their respective coordinates on the campus map. Additionally, they also have to respect manufacturer security rule: The distance between any two vending machines has to be at least 1.3 meters. Help the university to establish the maximum possible number of vending machines which can be installed in the campus.

### INPUT

There are several test cases. Each test starts with a line containing one integer  $N$  which specifies the number of possible vending machine locations in the map ( $1 \leq N \leq 2000$ ). Next, there are  $N$  lines representing the location coordinates, each line describes one location by a pair of integer coordinates in meters. All locations in one test case are unique. Each coordinate is non-negative and less than or equal to  $10^9$ .

You are guaranteed that all locations form a single connected group, that is, it is possible to start in any location and reach any other location by a sequence of steps, each of which changes exactly one coordinate by 1, without leaving the area suitable for placing vending machines.

### OUTPUT

For each test case, print a single line with one integer representing the maximum number of vending machines which can be installed in the campus.

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