

## Problem C

# Critical Wave

**Input:** standard input

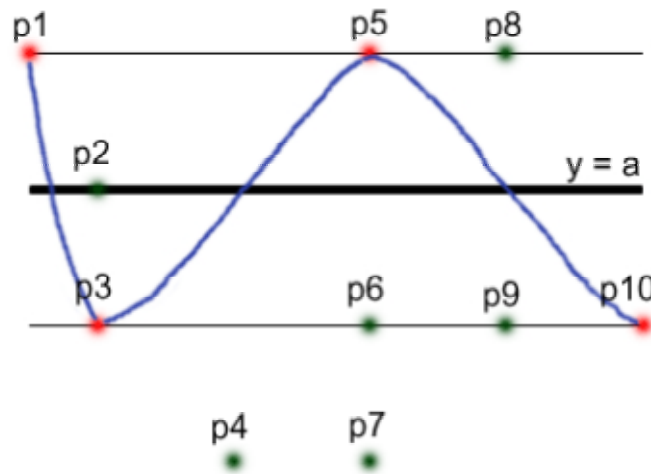
**Output:** standard output

**Time Limit:** 10 seconds

The task is simple. Through some critical points in 2D, you are to draw a wave like curve. Your goal is to include as many points as possible.

- There will be an imaginary line  $y = a$ , which we call the major axis for the curve.
- All the points on the curve should have different x coordinates. Their y coordinates should be of form  $a-1$  or  $a+1$ .

Two consecutive points on the curve should have a **difference of 2 in their y coordinate**



## Input

There will be no more than **222 test cases**. Each test case starts with an integer  $N$ , the number of points in the test case. In the next  $N$  lines, there will be  $N$  pair of integers giving the  $x$  and  $y$  coordinate of the points. There will be no more than **1000 points** in each test case. All coordinates are integers -- they'd fit in an **signed 2 byte integer** data type.

## Output

For each test case print a number -- the maximum number of critical points that can be included in a curve drawn from the given points.

## Sample Input

```
10
0 1
1 0
1 -1
2 -2
3 1
3 -1
3 -2
```

4 1  
4 -1  
5 -1  
10  
0 1  
1 0  
1 -1  
2 -2  
3 1  
3 -1  
3 -2  
4 1  
4 -1  
5 -1

## Sample Output

4  
4

---

**Problem-setter: Monirul Hasan Tomal**

**“If you don’t consider your life as a journey you will advance nowhere and life will appear to you as an endless and hopeless track.”**