Corona Attack!

locked

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There have been some observational breakthroughs in fighting against coronavirus. Biotechnologists have discovered a weird pattern with which coronaviruses propagate on a flat surface. Let's assume that the surface is a 2D grid of size $10^{18} \times 10^{18}$.

If the coronavirus is presently at (i, j) cell then its next jump can be to one of following cells:

1. $(i+2, j+1)$
2. $(i+2, j-1)$
3. $(i-2, j+1)$
4. $(i-2, j-1)$
5. $(i-1, j+2)$
6. $(i-1, j-2)$
7. $(i+1, j+2)$
8. $(i+1, j-2)$

You have a list of cells which people have touched. Now you are wondering: what is the least possible number of jumps with which the virus could have reached those cells? The virus is initially positioned at the $(0, 0)$ cell.

Input Format

First Line: Integer T denoting the number of test cases.

For every test case, there are two numbers denoting the x and y position of the cell we are wondering about: X, Y.

Constraints

$1 \leq T \leq 10^5$

$0 \leq X, Y \leq 10^9$

Output Format

For each test case, print the minimum number of jumps the virus will need to make to reach the i-th cell.

Note: For every test case, assume the virus was initially at the $(0, 0)$ cell. All test cases are independent.

Sample Input 0

```
2
1 2
0 0
```

Sample Output 0

```
1
0
```

Submissions: 18
Max Score: 100
Difficulty: Medium

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C++20

```cpp
#include <cmath>
#include <cstdio>
#include <vector>
#include <iostream>
#include <algorithm>
using namespace std;


int main() {
    /* Enter your code here. Read input from STDIN. Print output to STDOUT */
    return 0;
}
```

Line: 1 Col: 1

Upload Code as File Test against custom input Run Code Submit Code