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Corona Attack!

Problem

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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 \boldsymbol{x} and \boldsymbol{y} position of the cell we are wondering about: $\boldsymbol{X}, \boldsymbol{Y}$.

Constraints

$$1 < T < 10^5$$

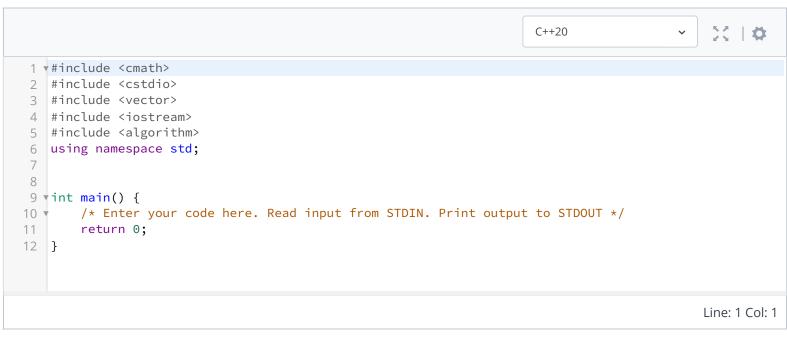
$$0 \le X, Y \le 10^9$$

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



<u>↑ Upload Code as File</u> Test against custom input

Run Code

Submit Code