(K,N)-Knight

Bytean chess is one of the most peculiar variants of chess in the world. Playing each match is a major difficulty, because the game is played on an infinite chessboard. The basic ability learnt by young enthusiasts of Bytean chess is considering all possible situations on a chessboard after millions of moves. To perform this, they need to know whether a given chess piece can get from one given square to another one.

The most powerful chess piece in Bytean chess is a (K, N)-knight. Its moves resemble the moves of a knight in traditional chess. Each of its moves consists of: either moving K squares vertically and afterwards N squares horizontally, or moving N squares vertically and afterwards K squares horizontally. The knight from traditional chess can therefore be thought of as (2, 1)-knight or (1, 2)-knight.

The task is to verify, for two given squares of the chessboard, if a (K, N)-knight can get from the first square to the second one (the number of necessary moves is not important).

Input

The first line of the standard input contains one integer T ($1 \leq T \leq 20000$) denoting the number of test cases. Each of the following T lines contains a description of a single test case in the form of six integers K, N, x_1, y_1, x_2, y_2 ($0 \leq K, N \leq 10^9$, $K + N > 0$, $-10^9 \leq x_1, y_1, x_2, y_2 \leq 10^9$) separated by single spaces. K and N describe the possible moves of the knight. The knight starts its movement in square (x_1, y_1). We would like to check if it can get to square (x_2, y_2).

Output

For each test case exactly one line should be written to the standard output. It should contain a word TAK (meaning YES) or NIE (meaning NO) depending on whether a (K, N)-knight starting from square (x_1, y_1) can get to square (x_2, y_2).

Example

For the input data:

```
3
2 1 0 0 3 3
1 1 1 1 1 2
1 0 2 3 4 6
```

the correct result is:

```
TAK
NIE
TAK
```

Task author: Jakub Onufry Wojtaszczyk.