

## E - Knight's Journey

### The Problem



In chess, a knight can reach any square of the board starting from any other square by means of one or more hops. Each hop allows the knight to move either one column (left or right) and two rows (up or down), or two columns and one row. For each pair of squares, there is minimum number of hops needed to move a knight from one square to the other. We call that number the *knight's distance* between those squares. For example, the knight's distance from square (1,1) to (4,4) is 2.

We want to find the maximum knight's distance from a given square to any other square of the board.

### The Input

The input format is as follows:

An integer in a single line which says the number of problems to solve. Then, for each problem:

- A line with four integers:
  - The number of rows of the board, which can be between 6 and 1000.
  - The number of columns of the board, which can be between 6 and 2000.
  - The row of the starting square for the knight.
  - The column of the starting square for the knight.

Note that rows and columns are numbered starting from 0.

### The Output

For each problem, you have to output a line with a number by itself representing the number of hops of the minimum path from the starting square of the knight to the furthest square of the board, following the usual rules of chess regarding the knight's movements.

### Sample Input

1

8 8 3 3

## Sample Output

4

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