Problem H. Hututu

Input file:	`standard input`
Output file:	`standard output`
Time limit:	3 seconds
Memory limit:	256 megabytes

Little A has obtained a Hututu.

The Hututu initially starts at the grid point (x, y). In each turn, it can move to one of the following positions: $(x \pm 1, y \pm 1)$, $(x \pm 2, y \pm 2)$, $(x \pm 1, y \pm 2)$, or $(x \pm 2, y \pm 1)$. Hututu hopes to reach the grid point (X, Y). The question is, what is the minimum number of turns he needs to take?

Input

The first line contains a positive integer T ($1 \le T \le 10^6$), indicating the number of test cases.

For each test case, there is a line with four integers x, y, X, Y ($-10^9 \le x, y, X, Y \le 10^9$), representing a query.

Output

For each test case, output a line with a single integer representing the answer.

Example

standard input	standard output
3 1 2 1 2 1 1 3 4 1 1 98 98	0 2 49