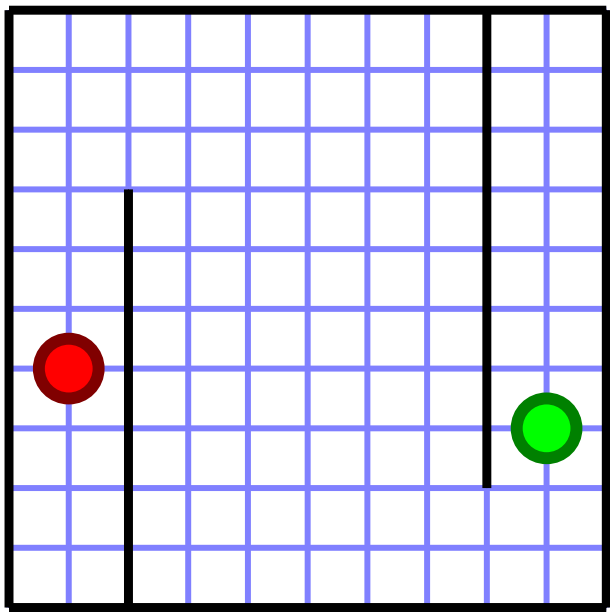
Grid Maze X75212_en

A maze has been drawn on the graph paper. All walls are either horizontal or vertical.



Your task is simple: find the shortest route from the red dot to the green dot. You can only move horizontally or vertically.
NOTE: We assume that you can move very close to the walls (at distance 0).

Input

The first line contains five numbers: N, X_1, Y_1, X_2, Y_2. Here N ($1 \leq N \leq 500$) is the number of lines in the maze, (X_1, Y_1) are the coordinates of the red dot, and (X_2, Y_2) are the coordinates of the green dot.
Each of the following N lines describe one wall of the maze. A wall is described as four numbers x_1, y_1, x_2, y_2, where either $y_1 = y_2$ or $x_1 = x_2$.
All coordinates are in range $[-2000000000, +2000000000]$.

Output

Output the length of the shortest route between the two dots. You should output **IMPOSSIBLE** if there is no route.

Sample input 1

```
6 1 6 9 7
0 0 10 0
0 0 0 10
10 0 10 10
0 10 10 10
2 3 2 10
8 0 8 8
```

Sample output 1

```
17
```

You obtain a route of length 17 by moving very close to the endings of both inner walls.

Problem information

Author: Eryk Kopczynski

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