Ice

Just like any other winter, Ivancho and his friends want to go ice skating. But unfortunately it’s too warm outside and some of the ice has melted. They decide to divide the ice rink into square areas. Lets call them tiles. Each tile can be icy or defrosted.

Ivancho and his friends set a goal to find out how to reach area **B** starting form area **A** by using the least number of defrosted tiles. When one of them is on a defrosted tile he can to choose to continue in one of four directions – forward, backwards, left or right. When on an icy tile they cannot change direction until reaching another defrosted tile. It’s forbidden to go outside the ice rink.

Ivancho wants to be first to figure it out, so he asks you for help by writing a program **ice** which, by a given grid and coordinates of **A** and **B**, prints the least usage of defrosted tiles to reach tile **B** when starting form tile **A**.

Input: The first row of the input file **ice.in** contains a positive integer **N** – the width and length of the ice rink (NxN tiles). The following **N** rows contain **N** numbers each being either one or zero, where the ones represent icy tiles and zeros represent defrosted tiles. The following two lines respectively contain $\mathbf{X_A}$, $\mathbf{Y_A}$ and $\mathbf{X_B}$, $\mathbf{Y_B}$ – the coordinates of tile **A** and tile **B**.

Remark: **A** and **B** are always defrosted. **A** isn’t included in the result but **B** is. You can’t change directions while sliding. The coordinates are 1-indexed.

Output: The output file **ice.out** should contain one positive integer – the number of the least usage of defrosted tiles or -1, if there isn’t a way to reach **B** starting from **A**.

Limits:
1 <= **N** <= 1000
1 <= **x, y** <= **N**

Time limit: 1 sec
Memory limit: 256 MB

Preliminary tests: 4
Final tests: 10

Sample test:

ice.in	**ice.out**
5	5
0 0 0 0 0	
0 1 1 1 0	
0 0 1 0 0	
0 0 0 1 0	
0 0 0 0 0	
1 1	
5 5	

Explanation:
The are two ways to reach 5, 5 starting from 1, 1 following the rules and stepping on the least possible defrosted tiles:

1 1
1 2
5 2
5 3
5 4
5 5

and

1 1
2 1
3 1
3 4
4 5
5 5