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G - **'Grand Escape'**

Problem description

As a maze runner, you are given a map of the maze m. Mazes are represented as $n \; x \; n$ matrices with 0's as spaces and -1's as its walls. You start at the coordinates (x_1, y_1) and should escape at (x_2, y_2). You can only move up, down, left, or right.

Your goal is to determine the shortest number of steps s to reach the exit.

Input

The first line contains n, representing the dimension of the maze.

The next line contains $n \; x \; n$ integers, which give the representation of the maze.

The third line contains the starting coordinate (x_1, y_1).

The fourth line contains the ending coordinate (x_2, y_2).

Output

Print s, which is the minimum number of steps required to escape the maze. If escape isn't possible, print -1.

Constraints

- $0 < \; n \leq 100$
- $0 \leq i, j, \leq n, where \; m[i][j] = 0 \; or \; m[i][j] = -1$
- $0 \leq x_1, y_1, x_2, y_2 \leq n, where \; m[x_1][y_1] = 0 \; and \; m[x_2][y_2] = 0$

Sample input/output

Sample input and output for this problem:

Input	Output
6 0 -1 -1 0 0 -1 0 0 -1 0 -1 0 -1 0 -1 0 0 0 0 0 -1 0 -1 0 -1 0 0 0 0 -1 0 0 -1 -1 0 0 0 0 2 4	10
4 -1 -1 0 -1 0 0 -1 0 0 -1 0 0 0 0 0 -1 0 2 3 0	-1

Explanation

In the first sample, you can escape the maze in 10 steps. From $m[0][0]$, you can traverse through the following path:

```
 0 -1 -1  0  0 -1
 1  2 -1  0 -1  0
-1  3 -1  9 10 0
 0  4 -1  8 -1  0
-1  5  6  7  0 -1
 0  0 -1 -1  0  0
```

In the second sample, you can't escape the maze since $m[0][2]$ is enclosed, and therefore cannot reach $m[3][0]$.