Castle on the Grid

You are given a grid with both sides equal to N. Rows and columns are numbered from 0 to $N-1$. There is a *castle* on the intersection of the a^{th} row and the b^{th} column.

Your task is to calculate the minimum number of steps it would take to move the *castle* from its initial position to the goal position (c, d).

It is guaranteed that it is possible to reach the goal position from the initial position.

Note: You can move the *castle* from cell (a, b) to any (x, y) in a single step if there is a straight line between (a, b) and (x, y) that does not contain any forbidden cell. Here, "*X*" denotes a forbidden cell.

Input Format

The first line contains an integer N, the size of the grid.

The following N lines contains a string of length N that consists of one of the following characters: "`X`" or "`.`". Here, "`X`" denotes a forbidden cell, and "`.`" denotes an allowed cell.

The last line contains a, b, denoting the initial position of the castle, and c, d, denoting the goal position. Here, $a, b, c,$ and d are space separated.

Constraints

$1 \leq N \leq 100$
$0 \leq a, b, c, d < N$

Output Format

Output a single line: The integer denoting the minimum number of steps required to move the castle to the goal position.

Sample Input

```
3
.X.
.X.
...
0 0 0 2
```

Sample Output

```
3
```

Explanation

Here is a path that one could follow in order to reach the destination in 3 steps:

$(0,0) -> (2,0) -> (2,2) -> (0,2)$.