Swap
Input File: swap.txt

The new hit board game *Swap!* has just hit the market. In the game, you are given a rectangular board filled with X pieces and O pieces. This board, which has unique placement of the X and O pieces, corresponds to an image of a board with a **different** arrangement of X and O pieces.

Your job is to make your board match the board in the image in the **fewest possible steps**. However, you can only move the pieces by **swapping** a piece with an adjacent piece (horizontal or vertical adjacent swaps, no diagonal swap). Given your board and the image board, find the fewest number of steps it takes to make the boards match (you can guarantee there is a solution; i.e., each board has the same ratio of X to O pieces).

Input:

The first line contains two space-separated integers representing the width, w, and height, h, respectively, of the two boards (`1 < width, height < 20`). The next h lines contain your board, followed by another set of h lines containing the image board.

Output:

You will output an integer representing the fewest possible steps to make your board match the image board.

Example Input:

```
5 5
XOOXO
XOXXX
XXOOO
OOOOO
XOXOX
XOXOO
XOXOX
OOOOO
OOOXX
XXOXX
```

Example Output:

```
11
```