

## 7380 Grid

You are on an  $n \times m$  grid where each square on the grid has a digit on it. From a given square that has digit  $k$  on it, a Move consists of jumping exactly  $k$  squares in one of the four cardinal directions. A move cannot go beyond the edges of the grid; it does not wrap. What is the minimum number of moves required to get from the top-left corner to the bottom-right corner?

### Input

The input file contains several test cases, each of them as described below.

The first line of input contains two space-separated integers  $n$  and  $m$  ( $1 \leq n, m \leq 500$ ), indicating the size of the grid. It is guaranteed that at least one of  $n$  and  $m$  is greater than 1.

The next  $n$  lines will each consist of  $m$  digits, with no spaces, indicating the  $n \times m$  grid. Each digit is between 0 and 9, inclusive.

The top-left corner of the grid will be the square corresponding to the first character in the first line of the test case. The bottom-right corner of the grid will be the square corresponding to the last character in the last line of the test case.

### Output

For each test case, output a single integer on a line by itself representing the minimum number of moves required to get from the top-left corner of the grid to the bottom-right. If it isn't possible, output '-1'.

### Sample Input

```
2 2
11
11
2 2
22
22
5 4
2120
1203
3113
1120
1110
```

### Sample Output

```
2
-1
6
```