Treasures in a map (4) P39846_en

Write a program that, given a map with treasures and obstacles, computes the distance from a given initial position to the furthest accessible treasure. The allowed movements are horizontal or vertical, but not diagonal. If needed, passing over the treasures is allowed.

Input

Input begins with the number of rows $n > 0$ and the number of columns $m > 0$ of the map. Follow n rows with m characters each. A dot indicates an empty position, an '`X`' indicates an obstacle, and a '`t`' indicates a treasure. Finally, two numbers r and c indicate the initial row and column (both of them starting at 1) where we must start looking for treasures. You can assume that r is between 1 and n, that c is between 1 and m, and that the initial position is always empty.

Output

Print the minimum number of steps to reach the furthest treasure from the initial position. If no treasure is accessible, tell so.

Sample input 1

```
7 6
..t...
..XXX.
......
tX..X.
.X..Xt
.XX...
..t...
5 3
```

Sample output 1

```
maximum distance: 6
```

Sample input 2

```
4 10
..t...X...
.....X..t.
XXXXX.X...
.......X.t
4 1
```

Sample output 2

```
no treasure can be reached
```

Sample input 3

```
5 7
.......
.XXXXXt
.X...Xt
.X.X.XX
...X.Xt
5 5
```

Sample output 3

```
maximum distance: 20
```

Problem information

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