
Treasures in a map (5)

P43164_en

Write a program that, given a map with treasures and obstacles, computes the distance from a given initial position to the second 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 second 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

```
second maximum distance: 5
```

Sample input 2

```
4 10
..t...X...
.....X..t.
XXXXX.X...
t.....X.t
4 3
```

Sample output 2

```
we cannot reach two or more treasures
```

Sample input 3

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

Sample output 3

```
second maximum distance: 19
```

Sample input 4

```
1 3  
t.t  
1 2
```

Sample output 4

```
second maximum distance: 1
```

Problem information

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