Kian and the goal point

Time Limit: 3 seconds   **Memory Limit: 512 MB**

You are given an $n \times m$, where each cell contains one of the following characters:

- .(dot): An empty cell that allows you to move exactly **one step forward** (to the right).

- #(hash): An obstacle that immediately **pushes you two cells backward** (to the left), skipping the cell in between. This movement does not revisit the skipped cell.

- 1-9(digit): A **booster** that can optionally propel you forward by the corresponding number of cells. You can either:

  - Use the booster and jump forward by the digit's value (as long as you stay within the bounds of the grid), or

  - Skip the booster and simply move one cell to the right.

Your journey starts at the **top-left cell** (position $(1,1)$), and your goal is to reach the **bottom-right cell** (n,m)).

You move in a **row-wise linear fashion**: when you reach the end of a row, you automatically wrap around to the beginning of the next row, and if you reach the beginning, you wrap around to the end of the previous one

Your task is to determine the **minimum number of cells you must pass through** to reach the destination (n,m),**not including the destination cell itself**. A "cell passed through" is any cell you move into while traversing the grid.

You may assume the following:

- No # will push you out of bounds.

- The destination cell (n,m) will never contain a #.

Input

- The first line contains two integers n and m ($1 \le n, m \le 1000$), representing the dimensions of the grid.

- The next n lines each contain m characters, describing the grid. Each character is either ., #, or a digit from to 9.

Output

Print the **minimum number of cells** you must pass through (excluding the destination cell)
to reach cell (n, m).
If it's **impossible** to reach the destination, print -1.

Subtasks

Subtasks	Points	Grid Size Range	Allowed Cell Types	Special Constraints
1	15	$1 \leq n, m \leq 10$	. and #	No boosters
2	20	$1 \leq n, m \leq 100$	. and digits $1-9$	No #
3	25	$1 \leq n, m \leq 1000$	. and digits $1-9$	No #
4	40	$1 \leq n, m \leq 1000$	.,#, and digits$1-9$	Full constraints

Example

Input:

```
3 4
..2#
233.
2#..
```

Output:

```
7
```