Problem I. Remove obstacles

Input file:	stdin
Output file:	stdout
Time limit:	1 second
Memory limit:	512 megabytes

bobo is in a maze with 2 rows and n columns. The rows are numbered from top to bottom, while the columns are numbered from left to right. Some cells may contain obstacles.

bobo starts at cell $(1, 1)$ and is going to cell $(2, n)$. He can step upward, downward or rightward. However, he cannot step into cells with obstacles or go out of the maze. Meanwhile, he won't visit a cell more than once.

As a magician, bobo can remove at most k obstacles. He wonder the maximum number of cells he can visit.

Input

The first line contains 2 integers n, k $(1 \leq n \leq 1000000, 0 \leq k \leq 2000000)$.

The second and third line each contains n characters which denotes the maze, where "#" denotes obstacle cell and "." denotes empty cell.

It is guaranteed that bobo can go from $(1, 1)$ to $(2, n)$ without removing any obstacles.

Output

A single integer denotes the maximum number of cells.

Sample input and output

stdin	stdout
2 1 .# ..	3
3 1 .#. ...	6