Ants

Elly has a nice new rectangular terrarium full of ants. She has divided it into **N** x **M** cells, in which initially there are **K** ≤ **N** * **M** ants, such that each cell has at most one ant. Each cell is connected to its horizontal and vertical neighbors (if there are such cells). Thus, the inner cells are connected to four others, the ones on the edges – to three others, and the ones in the corners – to two others.

Each minute the ants move chaotically to neighboring cells. If after the movement X ants end up in the same cell, after some fighting and reproduction X^{X+1} % 8 end up in the cell (that is the remainder of X to the power of X+1 when divided by 8). Note that if there are two or more ants in the same cell before moving, they can decide to move to the same other cell. Also note that the ants never stay in the same cell for two consecutive minutes (they always move).

Elly makes their lives even harder. Each minute she chooses one of the outer not intoxicated yet rows or columns and sprays it with poison. The ants are not stupid and run away into non-poisoned cells before they get killed by it. Thus, they never get killed by Elly, but start living in a smaller and smaller area where they might have to fight for territory with other ants. Elly continues with her fun game until exactly two cells remain. Note that she never sprays a row or column if it is the last one remaining (otherwise there wouldn't be two cells in the end).

We can represent what's happening in the terrarium as a game in a rectangle board with **N** rows and **M** columns. In **K** of the cells randomly are positioned pawns. Each round starts with choosing the top row, the bottom row, the leftmost column or the rightmost column (if it isn't the last row or column, respectively). Each pawn is moved at random to a neighboring cell (one cell up, down, left or right), such that it doesn't end up in the chosen row or column. After moving all pawns, their number is counted in each cell, and if it was X, then they are replaced by X^{X+1} % 8 new pawns in that cell. After that the chosen row or column is removed from the board. This is continued until exactly two cells remain. Elly wonders what the expected number of ants (pawns) left at the end of the game is.

Input
On the first line of the standard input are given the integers **N**, **M**, and **K**. On the second line will be given string with **N** + **M** – 3 characters, denoting the order in which Elly sprays the rows and columns. Character 'T' will stand for top row, 'B' for bottom row, 'L' for left column and 'R' for right column.

Output
On the only line of the standard output print one real number rounded to exactly 6 digits after the decimal point – the expected number of ants.

Constraints
- 1 ≤ **N**, **M**, **K** ≤ 10

- $1 \leq \mathbf{K} \leq \mathbf{N} * \mathbf{M}$
- In 50% of the tests **N** will be equal to 1.
- The board will contain at least 2 cells.

Sample Input:	*Sample Output:*
1 5 2 LRR	1.200000
6 3 2 LBLLTR	1.058824