Counting K-Rectangle

English

<u>Vietnamese</u>

Given a M×N square board. Each square contains a letter of the English alphabet ('A' .. 'Z').

A K-rectangle of the board is a rectangle whose sides are parallel to the sides of the board, and contains exactly K different types of letter.

For example, with this 4×3 board:

CED CEB CBC DDA

The rectangle [(1,1), (2, 2)] is a 2-rectangle of the board because it contains 2 different letters: C and E.

Given M, N, K and the M×N board. Determine how many K-rectangles there are in the board.

Input

The first line contains 3 integers M, N and K. $(1 \le M, N \le 100, 1 \le K \le 26)$

The following M lines, each contains N letters of the English alphabet ('A' .. 'Z')

Output

Write one integer - the number of K-rectangles in the given board.

Example

Input: 4 3 3 CED CEB CBC DDA

Output:

12