E. Empty Rectangles

time limit per test: 12 seconds
memory limit per test: 512 megabytes
input: standard input
output: standard output

You've got an $n \times m$ table (n rows and m columns), each cell of the table contains a "0" or a "1".

Your task is to calculate the number of rectangles with the sides that are parallel to the sides of the table and go along the cell borders, such that the number one occurs exactly k times in the rectangle.

Input

The first line contains three space-separated integers n, m and k ($1 \le n, m \le 2500$, $0 \le k \le 6$) — the sizes of the table and the required number of numbers one.

Next n lines each contains m characters "0" or "1". The i-th character of the j-th line corresponds to the character that is in the j-th row and the i-th column of the table.

Output

Print a single number — the number of rectangles that contain exactly k numbers one.

Please, do not write the `%lld` specifier to read or write 64-bit integers in C++. It is preferred to use the `cin`, `cout` streams or the `%I64d` specifier.

Examples

input
3 3 2 101 000 101

output
8

input
5 5 1 00000 00000 00100 00000 00000

output
81

input
5 5 6 01010 10101 01010 10101 01010

output
12

input

```
3 3 0
001
010
000
```

output

```
15
```

input

```
4 4 0
0000
0101
0000
0000
```

output

```
52
```