

D. Timetable

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Ivan is a student at Berland State University (BSU). There are n days in Berland week, and each of these days Ivan might have some classes at the university.

There are m working hours during each Berland day, and each lesson at the university lasts exactly one hour. If at some day Ivan's first lesson is during i -th hour, and last lesson is during j -th hour, then he spends $j - i + 1$ hours in the university during this day. If there are no lessons during some day, then Ivan stays at home and therefore spends 0 hours in the university.

Ivan doesn't like to spend a lot of time in the university, so he has decided to skip some lessons. He cannot skip more than k lessons during the week. After deciding which lessons he should skip and which he should attend, every day Ivan will enter the university right before the start of the first lesson he does not skip, and leave it after the end of the last lesson he decides to attend. If Ivan skips all lessons during some day, he doesn't go to the university that day at all.

Given n , m , k and Ivan's timetable, can you determine the minimum number of hours he has to spend in the university during one week, if he cannot skip more than k lessons?

Input

The first line contains three integers n , m and k ($1 \leq n, m \leq 500$, $0 \leq k \leq 500$) — the number of days in the Berland week, the number of working hours during each day, and the number of lessons Ivan can skip, respectively.

Then n lines follow, i -th line containing a binary string of m characters. If j -th character in i -th line is 1, then Ivan has a lesson on i -th day during j -th hour (if it is 0, there is no such lesson).

Output

Print the minimum number of hours Ivan has to spend in the university during the week if he skips not more than k lessons.

Examples

input
2 5 1 01001 10110
output
5

input
2 5 0 01001 10110
output
8

Note

In the first example Ivan can skip any of two lessons during the first day, so he spends 1 hour during the first day and 4 hours during the second day.

In the second example Ivan can't skip any lessons, so he spends 4 hours every day.