CODEFORCES
Sponsored by **TON**

HOME   TOP   CATALOG   CONTESTS   GYM   PROBLEMSET   GROUPS   RATING   EDU   API   CALENDAR   HELP

PROBLEMS   SUBMIT   STATUS   STANDINGS   CUSTOM TEST

B. Fedor and New Game

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

After you had helped George and Alex to move in the dorm, they went to help their friend Fedor play a new computer game «Call of Soldiers 3».

The game has $(m + 1)$ players and n types of soldiers in total. Players «Call of Soldiers 3» are numbered form 1 to $(m + 1)$. Types of soldiers are numbered from 0 to n - 1. Each player has an army. Army of the i-th player can be described by non-negative integer x_i. Consider binary representation of x_i: if the j-th bit of number x_i equal to one, then the army of the i-th player has soldiers of the j-th type.

Fedor is the $(m + 1)$-th player of the game. He assume that two players can become friends if their armies differ in at most k types of soldiers (in other words, binary representations of the corresponding numbers differ in at most k bits). Help Fedor and count how many players can become his friends.

Input

The first line contains three integers n, m, k ($1 \leq k \leq n \leq 20$; $1 \leq m \leq 1000$).

The i-th of the next $(m + 1)$ lines contains a single integer x_i ($1 \leq x_i \leq 2^n$ - 1), that describes the i-th player's army. We remind you that Fedor is the $(m + 1)$-th player.
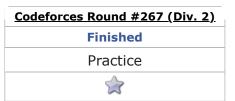
Output

Print a single integer — the number of Fedor's potential friends.

Examples

input	Copy
7 3 1 8 5 111 17	

output	Copy
0	

input	Copy
3 3 3 1 2 3 4	

output	Copy
3	

Codeforces Round #267 (Div. 2)

Finished

Practice

⭐

→ **Virtual participation**

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

[Start virtual contest]

→ **Clone Contest to Mashup**

You can clone this contest to a mashup.

[Clone Contest]

→ **Submit?**

Language: [GNU G++20 11.2.0 (64 bit, w ✔]

Choose file: [Choose File] No file chosen

[Submit]

→ **Contest materials**

- Announcement (en)   ✕
- Разбор задач (ru)   ✕

Desktop version, switch to mobile version.

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