# A. Fedor and New Game

time limit per test: 1 second

memory limit per test: 256 megabytes

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 $n, m, k$ $(1 \le k \le n \le 20; 1 \le m \le 1000)$.

The $i$-th of the next $(m + 1)$ lines contains a single integer $x_i$ $(1 \le x_i \le 2^n - 1)$, 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
```

**ICPC Assiut University Training - Juniors Phase 1 Sheets-2022**

Public

Participant

→ Group Contests

- Juniors Phase 1 Practice #5 (Bitmask, Bitset, Bits)
- Juniors Phase 1 Practice #4 ( Binary search , Two pointers )
- Juniors Phase 1 Practice #3 ( STL 2 )
- Juniors Phase 1 Practice #2 ( STL 1 )
- Juniors Phase 1 Practice #1 ( Prefix sum , Frequency Array )

**Juniors Phase 1 Practice #5 (Bitmask, Bitset, Bits)**

Finished

Practice

→ About Time Scaling

This contest uses time limits scaling policy (depending on a programming language). The system automatically adjusts time limits by the following multipliers for some languages. Despite scaling (adjustment), the time limit cannot be more than 30 seconds. Read the details by the link.

→ 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

→ Submit?

Language: GNU G++20 13.2 (64 bit, win

Choose file: Choose File No file chosen

Submit

→ Last submissions

| Submission | Time | Verdict |
|---|---|---|
| 228260117 | Oct/15/2023 10:50 | Accepted |
| 228259763 | Oct/15/2023 10:47 | Compilation error |
| 228259559 | Oct/15/2023 10:45 | Compilation error |