

## Codeforces Round 267 (Div. 2)

### B. Fedor and New Game

1 second, 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 from 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.

#### input

```
7 3 1
8
5
111
17
```

#### output

```
0
```

#### input

```
3 3 3
1
2
3
4
```

#### output

```
3
```