Little Mirko is studying the *hash* function which associates numerical values to words. The function is defined recursively in the following way:

- f(empty word) = 0
- f(word + letter) = ((f(word) * 33) XOR ord(letter)) % MOD

The function is defined for words that consist of only lowercase letters of the English alphabet. XOR stands for the bitwise XOR operator (i.e. 0110 XOR 1010 = 1100), ord(letter) stands for the ordinal number of the letter in the alphabet (ord(a) = 1, ord(z) = 26) and A % B stands for the remainder of the number A when performing integer division with the number B. MOD will be an integer of the form $2^{\mathbf{M}}$.

Some values of the hash function when **M** = 10:

- f(a) = 1
- f (aa) = 32
- f (kit) = 438

Mirko wants to find out how many words of the length **N** there are with the *hash* value **K**. Write a programme to help him calculate this number.

INPUT

The first line of input contains three integers **N**, **K** and **M** ($1 \leq \mathbf{N} \leq 10$, $0 \leq \mathbf{K} < 2^{\mathbf{M}}$, $6 \leq \mathbf{M} \leq 25$).

OUTPUT

The first and only line of output must consist of the required number from the task.

SCORING

In test cases worth 30% of total points, **N** will not exceed 5.

Additionally, in test cases worth 60% of total points, **M** will not exceed 15.

SAMPLE TESTS

input	**input**	**input**
1 0 10	1 2 10	3 16 10
output	**output**	**output**
0	1	4

Clarification of the first example: None of the characters in the alphabet has an ord value 0.

Clarification of the second example: It is the word "b".

Clarification of the third example: Those are the words "dxl", "hph", "lxd" and "xpx".