Winning Hand of Cards

by born2rule

You're at a party and the host has arranged a game of cards. You are given a number of cards and try to create as many combinations from those cards as possible that result in a *winning hand*. A winning hand is the one where the product of the numbers on the cards modulo a given value, the *modulo divisor* is equal to another given value, the *target value*.

Complete the function `winningHands` to return an integer denoting the number of winning hands.

Input Format

Input contains two lines. The first line contains three space-separated integers n, m and x denoting the number of cards, the modulo divisor and the target value respectively. The second line contains n space-separated integers. The i^{th} integer denotes the number written on card i.

Constraints

- $1 \leq n \leq 30$
- $1 \leq m \leq 10^6$
- $0 \leq x \leq m-1$
- $1 \leq \text{number on card} \leq 10^7$

Output Format

Print the number of winning hands from the given cards.

Sample Input 0

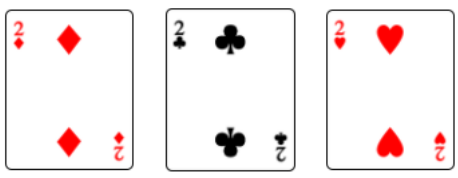
```
3 3 2
2 2 2
```

Sample Output 0

```
4
```

Explanation 0

Chosen hand = { 1, 2, 3 }



(2 * 2 * 2) % 3 = 2

Consider the following hands (given by their indices): $\{1\}, \{2\}, \{3\}, \{1,2\}, \{1,3\}, \{2,3\}, \{1,2,3\}$.

- $2 \bmod 3 = 2$
- $2 \bmod 3 = 2$
- $2 \bmod 3 = 2$

- $(2 \times 2) \bmod 3 = 1$
- $(2 \times 2) \bmod 3 = 1$
- $(2 \times 2) \bmod 3 = 1$
- $(2 \times 2 \times 2) \bmod 3 = 2$

Four hands have product modulo 3 = 2.

Contest ends in 6 hours

Submissions: 1160
Max Score: 40
Difficulty: Medium

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Current Buffer (saved locally, editable) C++14

```
#include <cmath>
#include <cstdio>
#include <vector>
#include <iostream>
#include <algorithm>
using namespace std;


int main() {
    /* Enter your code here. Read input from STDIN. Print output to STDOUT */
    return 0;
}

```

Line: 1 Col: 1

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