1213 – Fantasy of a Summation

If you think codes, eat codes then sometimes you may get stressed. In your dreams you may see huge codes, as I have seen once. Here is the code I saw in my dream.

```
#include <stdio.h>

int cases, caseno;
int n, K, MOD;
int A[1001];

int main() {
    scanf("%d", &cases);
    while( cases-- ) {
        scanf("%d %d %d", &n, &K, &MOD);

        int i, i1, i2, i3, ... , iK;

        for( i = 0; i < n; i++ ) scanf("%d", &A[i]);

        int res = 0;
        for( i1 = 0; i1 < n; i1++ ) {
            for( i2 = 0; i2 < n; i2++ ) {
                for( i3 = 0; i3 < n; i3++ ) {
                    ...
                    for( iK = 0; iK < n; iK++ ) {
                        res = ( res + A[i1] + A[i2] + ... + A[iK] ) % MOD;
                    }
                    ...
                }
            }
        }
        printf("Case %d: %d\n", ++caseno, res);
    }
    return 0;
}
```

Actually the code was about: 'You are given three integers **n**, **K**, **MOD** and **n** integers: $\mathbf{A_0}$, $\mathbf{A_1}$, $\mathbf{A_2}$ ... $\mathbf{A_{n-1}}$, you have to write **K** nested loops and calculate the summation of all $\mathbf{A_i}$ where **i** is the value of any nested loop variable.'

Input

Input starts with an integer **T (≤ 100)**, denoting the number of test cases.

Each case starts with three integers: **n (1 ≤ n ≤ 1000), K (1 ≤ K < 2^{31}), MOD (1 ≤ MOD ≤ 35000)**. The next line contains **n** non-negative integers denoting $\mathbf{A_0}$, $\mathbf{A_1}$, $\mathbf{A_2}$ ... $\mathbf{A_{n-1}}$. Each of these integers will be fit into a 32 bit signed integer.

Output

For each case, print the case number and result of the code.

Sample Input	Output for Sample Input
2 3 1 35000 1 2 3 2 3 35000 1 2	Case 1: 6 Case 2: 36