

11718 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() {
    int i, i1, i2, i3, ... , iK;

    scanf("%d", &cases);
    while( cases-- ) {
        scanf("%d %d %d", &n, &K, &MOD);
        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[i3] + ... + A[iK] ) % MOD;
                    }
                    ...
                }
            }
        }
        printf("Case %d: %d\n", ++caseno, res);
    }
    return 0;
}
```

Actually the code was about:

‘You are given 3 integers n , K , MOD and n integers $A_0, A_1, A_2, \dots, A_{n-1}$. You have to write K nested loops and calculate the summation of all A_i where i is the value of any nested loop variable.’

Now you have to find the result according to the code.

Input

The first line of input contains T denoting the number of cases.

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

Output

For each case print the case number and the result. Follow the sample output for the exact output format.

Sample Input

```
2
3 1 35000
1 2 3
2 3 35000
1 2
```

Sample Output

```
Case 1: 6
Case 2: 36
```