Problem F: 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, ... , 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 ≤ n ≤ 1000), K (1 ≤ K < 2^{31}), MOD (1 ≤ MOD ≤ 35000)**. The next line will contain **n** non-negative integers denoting A_0, A_1, A_2, ... , 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	Output for Sample Input
2 3 1 35000 1 2 3 2 3 35000 1 2	Case 1: 6 Case 2: 36

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