Problem J. Travel in Sugar Country

Input file:	*standard input*
Output file:	*standard output*
Time limit:	1.5 seconds
Memory limit:	256 mebibytes

There are N towns numbered 1 through N. There is a bidirectional road between towns i and $i+1$, and its length is D_i. Thus, for each pairs $(a,\ b)$ $(a < b)$, the distance between towns a and b is $D(a,b) = D_a + D_{a+1} + \ldots + D_{b-1}$.

At each town there is a sugar shop. An ant wants to visit K distinct shops.

The ant wants to choose a set of K distinct shops and the order to visit them. For example, if it decides to visit the shops $S_1, \ldots, S_K$ in this order, the total distance it travels will be $D(S_1, S_2) + D(S_2, S_3) + \ldots + D(S_{K-1}, S_K)$.

In how many ways the total distance it travels become a multiple of M? Print the answer modulo 10^9+7.

Input

Input Format:

$N\ \ M\ \ K$
D_1
D_2
$\vdots$
D_{N-1}

Constraints:

- $2 \leq N \leq 100$
- $1 \leq M \leq 30$
- $2 \leq K \leq 10, K \leq N$
- $1 \leq D_i \leq M$
- All values in the input are integers.

Output

Print the answer modulo $10^9 + 7$.

Examples

standard input	standard output
4 4 3 2 1 3	6
15 5 10 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	897286330

Note

In Sample 1, there are six ways: $1 \to 3 \to 2$, $2 \to 3 \to 1$, $2 \to 1 \to 4$, $4 \to 1 \to 2$, $2 \to 3 \to 4$, and $4 \to 3 \to 2$.