Sum Modulo

Input file:	`standard input`
Output file:	`standard output`
Time limit:	3 seconds
Memory limit:	1024 megabytes

Snuke found a random number generator. It generates an integer between 1 and N (inclusive). An integer sequence $A_1, A_2, \cdots, A_N$ represents the probability that each of these integers is generated. The integer i ($1 \le i \le N$) is generated with probability A_i/S, where $S = \sum_{i=1}^{N} A_i$. The process of generating an integer is done independently each time the generator is executed.

Snuke has an integer X, which is now 0. He can perform the following operation any number of times:

- Generate an integer v with the generator and replace X with $X + v \mod M$.

Find the expected number of operations until X becomes K, and print it modulo 998244353. More formally, represent the expected number of operations as an irreducible fraction P/Q. Then, there exists a unique integer R such that $R \times Q \equiv P \mod 998244353,\ 0 \le R < 998244353$, so print this R.

We can prove that the expected number of operations until X becomes K is a finite rational number. However, we did **not** prove its integer representation modulo 998244353 can be defined. Our sincerest apologies. Nonetheless, you don't have to worry about division by 0. More precisely, We can model this problem as an absorbing markov chain(`https://en.wikipedia.org/wiki/Absorbing_Markov_chain`), and we guarantee that in all tests, the corresponding fundamental matrices can be defined modulo 998244353.

Input

Input is given from Standard Input in the following format:

$N\ M\ K$

$A_1\ A_2\ \cdots\ A_N$

Constraints:

- $1 \le N \le \min(500, M - 1)$
- $2 \le M \le 10^{18}$
- $1 \le K \le M - 1$
- $1 \le A_i \le 100$
- All values in input are integers.

Output

Output the expected number of operations until X becomes K, modulo 998244353.

Examples

standard input	standard output
`2 3 1` `1 1`	`2`
`10 100 50` `1 2 3 4 5 6 7 8 9 10`	`439915532`