Problem J. Count the Sequences

Input file:	*standard input*
Output file:	*standard output*
Time limit:	1 second
Memory limit:	512 mebibytes

Given four integers, m, b, c, and n, calculate the number of integer sequences $x_1, \ldots, x_m$ such that:

- $0 \le x_i \le b^i - c$;
- $\sum_{i=1}^{m} x_i < n$.

Print the answer modulo 998 244 353.

Input

The first line of the input contains three integers, m, b, and c ($1 \le m \le 50$, $2 \le b \le 10^9$, $-b + 2 \le c \le b - 1$). The second line contains a large integer n ($1 \le n \le b^{m+1}$).

Output

Print one integer: the number of sequences modulo 998 244 353.

Example

standard input	standard output
2 3 1 5	12