

Problem A. Atcoder Problem

Input file: standard input
Output file: standard output
Time limit: 4 seconds
Memory limit: 1024 megabytes

Print the number, modulo 998244353, of integer sequences $A = (A_1, A_2, \dots, A_N)$ with length N that satisfy both of the following conditions.

- $0 \leq A_1 \leq A_2 \leq \dots \leq A_N \leq M$
- $A_1 \oplus A_2 \oplus \dots \oplus A_N = X$

The problem is too easy, so output the answer for each $N = 1, 2, \dots, NMAX$.

Input

In the first line, $NMAX, M, X$ ($1 \leq NMAX \leq 10^5, 0 \leq M, X < 2^{60}$).

Output

$NMAX$ lines — the answers for $N = 1, 2, \dots, NMAX$.

Examples

standard input	standard output
5 6 7	0 3 7 25 49
10 100 0	1 101 1418 38280 756912 13403840 203823022 755806367 368916768 79402702