# Problem J. Expectation

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|---|---|
| Input file: | *standard input* |
| Output file: | *standard output* |
| Time limit: | 2 seconds |
| Memory limit: | 512 mebibytes |

Let's consider a random permutation $(p_1, p_2, \ldots, p_n)$ of numbers $1, 2, \ldots, n$. We are interested in the value $S = (X_2 + \cdots + X_{n-2})^k$ where

$$X_i = \begin{cases} 1 & \text{if } p_{i-1} < p_i > p_{i+1} \text{ or } p_{i-1} > p_i < p_{i+1} \\ 0 & \text{otherwise.} \end{cases}$$

You have to find the expected value of $S$ as an irreducible fraction $P/Q$. Sure, $P$ and $Q$ can be quite large, so just find the value of $P \cdot Q^{-1}$ modulo 998244353.

## Input

The first line of input contains two integers $k$ and $n$ ($1 \le k \le 30, 3 \le n \le 10^8$).

## Output

Print a single integer — the value of $P \cdot Q^{-1}$ modulo 998244353.

## Examples

| standard input | standard output |
|---|---|
| 1 6 | 665496238 |
| 2 11 | 232923720 |

## Note

At the first sample expected value equals $8/3$ and $3^{-1} = 332748118$ modulo 998244353, so $8 \cdot 3^{-1} = 665496238$ modulo 998244353.