Palindrome Cutting

Time limit: *2000 ms*
Memory limit: *256 MB*

Consider an ***even*** length array S of numbers from 1 to M. We will call this array $good$ if it can be split into any number of contiguous subsequences of ***even*** length, each one being a palindrome. Given N and M, count the number of ***good*** arrays of length N with numbers from 1 to M modulo 998244353.

Standard input

The first line of input contains two integers N and M.

Standard output

The first line of output should contain one integer — the number of ***good*** arrays of length N of numbers from 1 to M modulo 998244353.

Constraints and notes

- N is ***even***,
- $2 \leq N \leq 5 \cdot 10^5$,
- $1 \leq M < 998244353$

Input	Output	Explanation
4 2	6	The 6 good arrays are: $1\ 1\ 2\ 2$: can be split into $(1\ 1)\ (2\ 2)$ $2\ 2\ 1\ 1$: can be split into $(2\ 2)\ (1\ 1)$ $1\ 1\ 1\ 1$: the entire array is a palindrome $1\ 2\ 2\ 1$: the entire array is a palindrome $2\ 1\ 1\ 2$: the entire array is a palindrome $2\ 2\ 2\ 2$: can be split into $(2\ 2)\ (2\ 2)$