

Problem D. Double Palindrome

Time limit: 2 seconds
Memory limit: 512 megabytes

A *palindrome* is a string that reads the same backward as forward. For example, **rotator**, **lil** and **abba** are palindromes, but **shalash** is not.

A *double palindrome* is a string that is either a palindrome or a concatenation of two (not necessarily distinct) palindromes. For example, **susanna**, **potato** and **abba** are double palindromes, but **zzyzx** and **abaabb** are not.

Dalila has just realized that her name is a double palindrome! Now she wonders how many non-empty strings of length at most n composed of the first k English letters have the same property. Help her find this number and output it modulo 998 244 353.

Input

The only line contains two integers n and k — the maximum length of the string and the size of the alphabet ($1 \leq n \leq 10^5$; $1 \leq k \leq 26$).

Output

Output the number of non-empty double palindromes of length at most n composed of the first k English letters, modulo 998 244 353.

Examples

standard input	standard output
3 3	33
6 2	114
42 7	83419789

Note

In the first example the strings to be counted are: a, b, c, aa, ab, ac, ba, bb, bc, ca, cb, cc, aaa, aab, aac, aba, abb, aca, acc, baa, bab, bba, bbb, bbc, bcb, bcc, caa, cac, cbb, cbc, cca, ccb, ccc.