

Problem M. Minimum Element Problem

Input file: standard input
Output file: standard output
Time limit: 2 seconds
Memory limit: 1024 megabytes

We call two permutations $p_1, p_2, \dots, p_n$ and $q_1, q_2, \dots, q_n$ *equivalent* if and only if for every pair (i, j) ($1 \leq i \leq j \leq n$), the indices of the minimum element of $p_i, p_{i+1}, \dots, p_j$ and $q_i, q_{i+1}, \dots, q_j$ are the same.

Given x and y , consider the set of all permutations p of $\{1, 2, \dots, n\}$ such that $p_x = y$. Find the maximum number of permutations you can pick from this set such that no two are equivalent. Output this number modulo 998244353.

The problem is too easy, so output the answer for every $y = 1, 2, \dots, n$.

Input

In the first line n, x ($1 \leq n \leq 5 \times 10^5, 1 \leq x \leq n$).

Output

n lines, answers for $y = 1, 2, \dots, n$.

Examples

standard input	standard output
5 2	5 10 16 20 14
10 5	588 1176 2716 4942 7407 9101 9636 9167 7596 4862