Problem H
Hardest Problem

Given two integers n and d ($1 \le d \le n$). Define $f(k)$ as the number of permutations of $1, 2, \ldots, n$ such that:

- the number of inversions of the permutation is k.
- when removing all elements with values that are **strictly** greater than d from the permutation, the remaining elements are sorted in increasing order.

Find $f(k)$ modulo $998\,244\,353$ for all k from 1 to $\min\{250\,000, \frac{n\cdot(n-1)}{2}\}$.

A permutation is an array consisting of n distinct integers from 1 to n in arbitrary order. For example, $[2, 3, 1, 5, 4]$ is a permutation, but $[1, 2, 2]$ is not a permutation (2 appears twice in the array) and $[1, 3, 4]$ is also not a permutation ($n = 3$ but there is 4 in the array).

An inversion of a permutation p is a pair (i, j) $(1 \le i < j \le |p|)$ such that $p_i > p_j$.

Input

The first and only line contains two integers n and d ($2 \le n \le 10^6$, $1 \le d \le n$).

Output

Print $\min\{250\,000, \frac{n\cdot(n-1)}{2}\}$ lines. On the k-th line, print $f(k)$ modulo $998\,244\,353$.

Explanation of the samples

In the first example, $n = 2$, $d = 1$. There are two permutations of length 2, that are $\{1, 2\}$ and $\{2, 1\}$. $\{2, 1\}$ is the only permutation that has 1 inversion.

In the second example, $n = 5$, $d = 3$.

- For $k = 1$, there are 2 permutations: $\{\underline{1}, \underline{2}, \underline{3}, 5, 4\}$, $\{\underline{1}, \underline{2}, 4, \underline{3}, 5\}$
- For $k = 2$, there are 3 permutations: $\{\underline{1}, \underline{2}, 4, 5, \underline{3}\}$, $\{\underline{1}, \underline{2}, 5, \underline{3}, 4\}$, $\{\underline{1}, 4, \underline{2}, \underline{3}, 5\}$
- For $k = 3$, there are 4 permutations: $\{\underline{1}, \underline{2}, 5, 4, \underline{3}\}$, $\{\underline{1}, 4, \underline{2}, 5, \underline{3}\}$, $\{\underline{1}, 5, \underline{2}, \underline{3}, 4\}$, $\{4, \underline{1}, \underline{2}, \underline{3}, 5\}$
- For $k = 4$, there are 4 permutations: $\{\underline{1}, 4, 5, \underline{2}, \underline{3}\}$, $\{\underline{1}, 5, \underline{2}, 4, \underline{3}\}$, $\{4, \underline{1}, \underline{2}, 5, \underline{3}\}$, $\{5, \underline{1}, \underline{2}, \underline{3}, 4\}$
- For $k = 5$, there are 3 permutations: $\{\underline{1}, 5, 4, \underline{2}, \underline{3}\}$, $\{4, \underline{1}, 5, \underline{2}, \underline{3}\}$, $\{5, \underline{1}, \underline{2}, 4, \underline{3}\}$
- For $k = 6$, there are 2 permutations: $\{4, 5, \underline{1}, \underline{2}, \underline{3}\}$, $\{5, \underline{1}, 4, \underline{2}, \underline{3}\}$
- For $k = 7$, there is 1 permutation: $\{5, 4, \underline{1}, \underline{2}, \underline{3}\}$

For $k = 8$, 9 or 10, there are no satisfying permutations.

Sample Input 1	Sample Output 1
2 1	1

Sample Input 2	Sample Output 2
5 3	2 3 4 4 3 2 1 0 0 0