# Problem F
## Derangement Rotations

Time Limit: 1

A *Derangement* is a permutation $p$ of $1, 2, \ldots, n$ where $p_i \neq i$ for all $i$ from $1$ to $n$.

A *rotation* of a sequence $a_1, a_2, \ldots, a_n$ with offset $k$ $(1 \leq k \leq n)$ is equal to the sequence $a_k$, $a_{k+1}$, $\ldots$, $a_n$, $a_1$, $a_2$, $\ldots$, $a_{k-1}$. A sequence of length $n$ has at most $n$ distinct rotations.

Given a derangement $D$, let $f(D)$ denote the number of distinct rotations of $D$ that are also derangements. For example, $f([2, 1]) = 1$, $f([3, 1, 2]) = 2$.

Given $n$ and a prime number $p$, count the number of derangements $D$ of $1, 2, \ldots, n$ such that $f(D) = n - 2$, modulo $p$.

## Input

The single line of input contains two integers $n$ $(3 \leq n \leq 10^6)$ and $p$ $(10^8 \leq p \leq 10^9 + 7)$, where $n$ is a permutation size, and $p$ is a prime number.

## Output

Output a single integer, which is the number of derangements $D$ of size $n$ with $f(D) = n - 2$, modulo $p$.

| Sample Input 1 | Sample Output 1 |
|---|---|
| `3 1000000007` | `0` |

| Sample Input 2 | Sample Output 2 |
|---|---|
| `6 999999937` | `20` |