Andrew Needs Help

Time limit: 0.5s **Memory limit:** 256M

Andrew is planning something and he needs your help. Andrew needs your help to determine how many permutations of the first N positive integers are good.

A permutation p is good if there exists an index i $(1 \leq i \leq N-1)$ such that $|p_{i+1} - p_i| = D$.

Since the answer might be very large, output it modulo $10^9 + 7$.

Constraints

$2 \leq N \leq 10^6$
$N \leq 2D < 2N$

Subtask 1 [10%]

$2 \leq N \leq 8$

Subtask 2 [30%]

$2 \leq N \leq 2000$

Subtask 3 [60%]

No additional constraints.

Input Specification

The first and only line contains N $(2 \leq N \leq 10^6)$ and D $(N \leq 2D < 2N)$.

Output Specification

Output the number of good permutations, modulo $10^9 + 7$.

Sample Input 1

```
3 2
```

Sample Output 1

```
4
```

Explanation

The good permutations are $\{1, 3, 2\}$, $\{2, 1, 3\}$, $\{2, 3, 1\}$, and $\{3, 1, 2\}$.

Sample Input 2

```
838383 833883
```

Sample Output 2

```
711361423
```