Problem A. Permutation and noitatumreP

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	512 megabytes

Bobo would like to count the number of permutations $(p_1, p_2, \ldots, p_n)$ of $\{1, 2, \ldots, n\}$ such that the sequence $q = (p_1, p_2, \ldots, p_n, p_n, p_{n-1}, \ldots, p_1)$ does not contain four indices $1 \leq a < b < c < d \leq 2n$ which satisfy $q(a) < q(c) < q(d) < q(b)$.

As this number may be very large, Bobo is only interested in its remainder modulo $(10^9 + 7)$.

Input

The input contains zero or more test cases, and is terminated by end-of-file.

Each test case contains an integer n $(1 \leq n \leq 10^9)$.

It is guaranteed that the number of test cases does not exceed $2 \cdot 10^4$.

Output

For each test case, output an integer which denotes the number of ways modulo $(10^9 + 7)$.

Example

standard input	standard output
4 1000000000	16 861159011