Problem G. Biological Software Utilities

Input file:	*standard input*
Output file:	*standard output*
Time limit:	1 second
Memory limit:	512 mebibytes

You are developing a software kit named *Biological Software Utilities* (BSU). The kit includes a program that is dedicated to tree recognition. Recall that a *tree* is a connected undirected graph without cycles.

In nature, when a tree grows, two neighboring vertices are added at the same time. Thus, you consider a tree to be *plausible* if, after removing some edges, the resulting graph consists only of connected components with 2 vertices. In other words, a tree is plausible if and only if it has a perfect matching.

Now you are to implement a new function for BSU to calculate the number of plausible trees that have n vertices numbered with distinct integers between 1 and n. Two trees are considered different if there is an edge (u, v) which is present in exactly one of the trees.

Since the number of plausible trees can be very large, you have to calculate it modulo $998\,244\,353$.

Input

The only line contains an integer n, the number of vertices in a tree $(1 \leq n \leq 10^6)$.

Output

Print the number of plausible trees with n vertices modulo $998\,244\,353$.

Examples

standard input	standard output
1	0
2	1
3	0
4	12
7788	178152092