Problem I. Red-Black Graph

Input file:	*standard input*
Output file:	*standard output*
Time limit:	2 seconds
Memory limit:	1024 mebibytes

Consider an undirected graph with n vertices numbered from 1 to n, each colored either red or black. A graph is *beautiful* if both conditions are met:

- removing all edges with both endpoints colored red yields a tree;
- removing all edges with both endpoints colored black yields a tree.

A graph is *best* if it is beautiful and has at least as many edges as any other beautiful graph with the same number of vertices.

Your task is to calculate the number of best graphs with n vertices. Two graphs are distinct if either the set of edges or the color of at least one vertex is different, or both. Since the answer might be large, print it modulo 998 244 353.

Input

The only line contains a single integer n ($2 \le n \le 10^6$).

Output

Print a single integer — the number of best graphs with n vertices, taken modulo 998 244 353.

Examples

standard input	standard output
3	6
4	12
5	240
6	1080