

Problem G. Gnutella Chessmaster

Input file: *standard input*
Output file: *standard output*
Time limit: 3 seconds
Memory limit: 512 mebibytes

Alexander has recently achieved ridiculously high rating on Chessforces competition website. Alexander's coach challenged him with a difficult problem so that Alexander could truly prove his mettle.

Consider an $n \times n$ chessboard. A *bishop* is a chess piece that attacks all positions sharing a diagonal with it. A *non-attacking configuration* is an arrangement of several bishops on the chessboard such that no two bishops occupy the same position, and no bishop attacks any other.

Alexander has to count the number of non-attacking bishop configurations with exactly k bishops for each k from 1 to $2n - 1$. Since the answers can be large, each number has to be computed modulo a completely random number 998 244 353.

Input

The first line contains a single integer n ($1 \leq n \leq 10^5$).

Output

Print $2n - 1$ integers. The k -th of these integers should be the number (modulo 998 244 353) of non-attacking configurations of exactly k bishops on an $n \times n$ chessboard.

Examples

standard input	standard output
2	4 4 0
3	9 26 26 8 0
10	100 4380 110960 1809464 20014112 154215760 837543200 214861037 625796024 941559921 770927213 837612209 756883449 146369278 295974400 17275136 246784 1024 0