Problem D. Definitely Not Prime

Input file:	*standard input*
Output file:	*standard output*
Time limit:	1 second
Memory limit:	1024 mebibytes

Consider the positive integer *antiprime* if it is not prime and it is impossible to delete some digits from its decimal representation to obtain a prime number. For example, 104 is antiprime because neither 0, 1, 4, 10, 14, nor 104 are primes, but 2024 is not because we can delete the first, second, and fourth digits and obtain a prime 2.

Note that the prime numbers are the integers that have exactly two distinct divisors: themselves and one.

Given an integer n, count the number of antiprimes with exactly n decimal digits (without leading zeroes) modulo 998 244 353.

Input

Input contains one integer n ($1 \le n \le 10^6$).

Output

Print one integer — the number of n-digit antiprimes modulo 998 244 353.

Example

standard input	*standard output*
1	5

Note

The one-digit antiprimes, mentioned in the sample, are 1,4,6,8, and 9.