Problem M. Mobile Game Development Lab

Time limit: 1 second
Memory limit: 1024 mebibytes

You are developing a mobile game that uses a very unusual random number generator. This generator receives a positive integer a as input, which depends on the mobile device the game is running on. The generator then writes all the digits in the decimal representations of a and $a + 1$ without leading zeroes into a single string, randomly shuffles them, and uses the resulting string as a sequence of random digits.

You are well aware that MTS Web Services (MWS) is a big tech company providing cloud, AI, and platform solutions for various business needs, and you know many former contest winners who develop products at the company. Now you want to evaluate how often the generator's output string is s, and how the game will perform on the corresponding smartphone. To do this, you need to test your game on a large number of mobile devices. Your game's budget does not allow for this many devices. MWS products help developers in many challenging situations, and this situation is no exception. You've decided to use MWS SunQ — a tool for testing web interfaces and mobile apps for iOS and Android. With this tool, you can test your game on a variety of devices.

Therefore, you're confident that MWS SunQ truly fully covers all possible inputs to the random number generator. But to be sure, you first want to determine how many a exist such that the generator's output on a mobile device will be the string s. Since the number can be very large, output the remainder of its division by 998 244 353.

Input

The first line consists of one integer t ($1 \le t \le 10^4$) — the number of test cases.

Each test case contains on one line and consists of a single string s made up of digits from 0 to 9. The length of each string does not exceed 10^5 characters.

You may assume that the total length of all strings in the input file does not exceed 10^6.

Output

For each test case, output the remainder of the number of integers a from which the given string could have been obtained as a result of applying this operation, modulo 998 244 353.

Example

standard input	standard output
2 2025 121342	0 2