F. Numbers and Strings

time limit per test: 3 seconds
memory limit per test: 512 megabytes

For each integer x from 1 to n, we will form the string $S(x)$ according to the following rules:

- compute $(x + 1)$;
- write x and $x + 1$ next to each other in the decimal system without separators and leading zeros;
- in the resulting string, sort all digits in non-decreasing order.

For example, the string $S(139)$ is `011349` (before sorting the digits, it is `139140`). The string $S(99)$ is `00199`.

Your task is to count the number of distinct strings among $S(1), S(2), \ldots, S(n)$.

Input

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

Each test case consists of one line containing a single integer n ($1 \le n \le 10^9 - 2$).

Output

For each test case, output a single integer — the number of distinct strings among $S(1), S(2), \ldots, S(n)$.

Example

input

```
2
42
1337
```

output

```
42
948
```

Educational Codeforces Round 178 (Rated for Div. 2)
Finished
Practice

→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

→ Submit?

Language: GNU G++23 14.2 (64 bit, ms

Choose file: Choose File No file chosen

Submit

→ Last submissions

Submission	Time	Verdict
321818877	May/28/2025 19:25	Accepted
317652422	Apr/28/2025 19:34	Memory limit exceeded on test 2
317650675	Apr/28/2025 19:31	Memory limit exceeded on test 2
317649804	Apr/28/2025 19:29	Time limit exceeded on test 2

→ Problem tags

binary search brute force dfs and similar dp implementation math *2600

No tag edit access

→ Contest materials

- Announcement
- Tutorial

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