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## Lucky Driving

Problem code: LUKYDRIV



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ALL SUBMISSIONS

SUBMIT

All submissions for this problem are available.

"Nine is considered a **good** number in Chinese culture because it sounds the same as the word "long-lasting". Hence many people want their car registration numbers to sum up to 9 on adding the digits recursively.

A car registration number can consist of 1,2,3 or 4 digits. Examples of some **good** car numbers are 63, 018, 9099, etc. whereas 12,129 are not **good**.

Why is **9099** good?

$9+0+9+9 = 27$

$2+7 = 9$

Similarly it is not difficult to see why 63, 018, 6669, 9999... are **good**."

Given a string of digits, print how many subsequences of the string result in **good** car registration numbers.

**Note:**

The zeros at the starting of the number are to be accounted for, i.e. 018 and 18 are different numbers.

**Input**

First line of the input contains **T** ( $T \leq 200$ ) denoting the number of test cases. **T** lines follow each containing a non-empty single string **S**. **S** contains only digits i.e. from [0-9]. Length of **S**  $\leq 10000$ .

**Output**

For each case print how many subsequences of the string result in **good** car registration numbers. As the answer can be quite large print it modulo **1000000007**.

**Example**

**Input**

2  
10292  
0189

**Output**

2  
6

Author: kaushik\_iska

Tester: laycourse

Editorial: <http://discuss.codechef.com/problems/LUKYDRIV>

Tags: aug12 dp kaushik\_iska number-theory

Date Added: 21-04-2012

Time Limit: 2 sec

Source Limit: 50000 Bytes

Languages: ADA, ASM, BASH, BF, C, C99 strict, CAML, CLOJ, CLPS, CPP 4.3.2, CPP 4.8.1, CPP11, CS2, D, ERL, FORT, FS, GO, HASK, ICK, ICON, JAR, JAVA, JS, LISP clisp, LISP sbcl, LUA, NEM, NICE, NODEJS, PAS fpc, PAS gpc, PERL, PERL6, PHP, PIKE, PRLG, PYTH, PYTH 3.1.2, RUBY, SCALA, SCM guile, SCM qobi, ST, TCL, TEXT, WSPC

### Comments

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### SUCCESSFUL SUBMISSIONS

User	Time	Mem	Lang	Solution
progger123	0.14	2.8M	C++ 4.3.2	<a href="#">View</a>
jaig	0.14	2.8M	C++ 4.3.2	<a href="#">View</a>
abhik_geek	0.14	2.8M	C++ 4.3.2	<a href="#">View</a>
deepak_040	0.16	2.9M	C++ 4.3.2	<a href="#">View</a>
aoitest	0.18	6.8M	C++ 4.3.2	<a href="#">View</a>
zentropy	0.19	2.8M	C++ 4.3.2	<a href="#">View</a>
setac	0.19	2.9M	C++ 4.3.2	<a href="#">View</a>
deepak_123	0.19	2.9M	C++ 4.3.2	<a href="#">View</a>
shavron	0.21	2.8M	C++ 4.3.2	<a href="#">View</a>
vivek07672	0.25	2.8M	C++ 4.3.2	<a href="#">View</a>
vyotesh	0.27	1.6M	C	<a href="#">View</a>
rajeshkumar94	0.28	7.4M	C++ 4.8.1	<a href="#">View</a>

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### HELP

Program should read from **standard input** and write to **standard output**. After you submit a solution you can see your results by clicking on the **[My Submissions]** tab on the problem page. Below are the possible results:

- **Accepted** ✓ Your program ran successfully and gave a correct answer. If there is a score for the problem, this will be displayed in parenthesis next to the checkmark.
- **Time Limit Exceeded** ⚡ Your program was compiled successfully, but it didn't stop before time limit. Try optimizing your approach.
- **Wrong Answer** ✗ Your program compiled and ran successfully but the output did not match the expected output.

**rajsahae** @ 12 Aug 2012 01:32 PM

Can someone show me the subsequences in 0189 and 10292 that are good, because I wrote them out by hand and I only get 1 subsequence for 10292 ("9" only) and 5 subsequences for 0189 ("018", "0189", "18", "189", and "9"). Am I not understanding the problem? I'm just trying to understand the problem here, because according to my count, the output they gave is wrong (but I'm sure it's much more likely that I am wrong somehow). Thanks.

**gdisastery1** @ 12 Aug 2012 01:37 PM

Read the problem statement carefully: "Note: The zeros at the starting of the number are to be accounted for, i.e. 018 and 18 are different numbers." Hope you can figure it out.

**rajsahae** @ 12 Aug 2012 01:44 PM

I believe I accounted for that. As you can see in my list, I specifically noted 18 and 018 as different substrings, as I did for 189 and 0189.

**gdisastery1** @ 12 Aug 2012 07:36 PM

{"189, 0189, 09, 9, 18, 018"}

**rajsahae** @ 12 Aug 2012 10:08 PM

So subsequences don't have to be continuous? That seems extremely non-intuitive to me and maybe the problem should be amended to clearly define what definition of "subsequence" we are to assume.

**rahullak** @ 13 Aug 2012 05:54 PM

@rajsahae Subsequences are defined in wikipedia. Its a mathematical concept.

**rahullak** @ 13 Aug 2012 05:55 PM

I'm using Java, and I keep getting time-limit exceeded :(

**anubhavduke** @ 16 Aug 2012 12:17 AM


if the limit for s is 10000 then how the input can be 10292

**mynameborat** @ 16 Aug 2012 08:26 AM

@anubhavduke the limit denotes the length of the input string

**sensunnysen** @ 17 Apr 2014 08:43 PM

how 18 and 018 are different..plz tell me ..i m new on codechef..i m little good in coding.. thank u

■ **Runtime Error**  Your code compiled and ran but encountered an error. The most common reasons are using too much memory or dividing by zero. For the specific error codes see the help section.

■ **Compilation Error**  Your code was unable to compile. When you see this icon, click on it for more information.

If you are still having problems, see a sample solution here.

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**Directi**  
Intelligent People. Uncommon Ideas.

The time now is: 01:55:53 AM  
Your Ip: 186.62.5.64

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CodeChef was created as a platform to help programmers make it big in the world of algorithms, computer programming and programming contests. At CodeChef we work hard to revive the geek in you by hosting a programming contest at the start of the month and another smaller programming challenge in the middle of the month. We also aim to have training sessions and discussions related to algorithms, binary search, technicalities like array size and the likes. Apart from providing a platform for programming competitions, CodeChef also has various algorithm tutorials and forum discussions to help those who are new to the world of computer programming.

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