Problem F
Palindrome Counter

Time Limit: 1 seconds
Memory Limit: 512 Megabytes

Problem description

A palindromic number is a number (in some base b) that is the same when written forwards or backwards. The first few palindromic numbers are therefore are 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 22, 33, 44, 55, 66, 77, 88, 99, 101, 111, 121, ... ***(rule 1)***.

In some special cases, 0012100, 00 is a palindromic number. Therefore, 12100, 1210, 00 is also a palindromic number ***(rule 2)***.

We can classify positive integers into three categories:

- Type 0: numbers that not palindromic number.
- Type 1: palindromic numbers according to rule 1.
- Type 2: palindromic numbers according to rule 2.

All palindrome that less than or equal to 100 are: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 20, 22, 30, 33, 40, 44, 50, 55, 60, 66, 70, 77, 80, 88, 90, 99, 100.

Given a number M is a non-negative integer. The function F(M) returns the number of palindromes (including the 2 types: type 1 and type 2) less than or equal to M ($0 \le M \le 10^{35}$).

M	0	15	39	55	60	85	88	90	100
F(M)	1	12	16	20	21	25	26	27	29

To simplify the problem, given a number N is a non-negative integer, the function P(N) returns the value of $F(10^N)$ ($0 \le N \le 35$).

N	0	1	2	3	4	...	15	...	35
P(N)	2	11	29	137	335	...	144,444,413	...	1,444,444,444,444,444,373

Task

Given a N positive numbers, your mission is to calculate P(N).

Input

- On the first line is the number of test case, $1 \le T \le 36$.
- In the next T lines, each line contains a non-negative integer N_i ($1 \le i \le T$, $0 \le N_i \le 35$).

Output

The result has T lines, the i^{th} line contains the value of $P(N_i)$ ($1 \le i \le T$).

Example 1:

Input	Output
5 4 7 35 20 15	335 14429 1444444444444444373 34444444403 144444413

Example 2:

Input	Output
3 1 8 10	11 34427 344423

Example 3:

Input	Output
5 30 2 3 33 25	3444444444444383 29 137 14444444444444377 14444444444393