Project Euler #41: Pandigital prime

This problem is a programming version of Problem 41 from projecteuler.net

We shall say that an n-digit number is pandigital if it makes use of all the digits 1 to n exactly once. For example, 2143 is a 4-digit pandigital and is also prime.

What is the largest n-digit pandigital prime $\leq N$? If there is none, print -1

Input Format

First line contains T that denotes the number of test cases. This is followed by T lines, each containing an integer, N.

Constraints

$1 \leq T \leq 10^5$
$10 \leq N \leq 10^{10} - 1$

Output Format

Print the required answer for each test case.

Sample Input

```
2
100
10000
```

Sample Output

```
-1
4231
```