Separate the Numbers



A numeric string, s, is beautiful if it can be split into a sequence of two or more positive integers, $a[1], a[2], \ldots, a[n]$, satisfying the following conditions:

- 1. a[i] a[i-1] = 1 for any $1 < i \le n$ (i.e., each element in the sequence is 1 more than the previous element).
- 2. No a[i] contains a leading zero. For example, we can split s=10203 into the sequence $\{1,02,03\}$, but it is not beautiful because 02 and 03 have leading zeroes.
- 3. The contents of the sequence cannot be rearranged. For example, we can split s=312 into the sequence $\{3,1,2\}$, but it is not beautiful because it breaks our first constraint (i.e., $1-3\neq 1$).

The diagram below depicts some beautiful strings:

Perform q queries where each query consists of some integer string s. For each query, print whether or not the string is beautiful on a new line. If it is beautiful, print $\frac{\text{YES}}{\text{X}}$, where x is the first number of the increasing sequence. If there are multiple such values of x, choose the smallest. Otherwise, print $\frac{\text{NO}}{\text{NO}}$.

Function Description

Complete the separateNumbers function in the editor below.

separateNumbers has the following parameter:

• s: an integer value represented as a string

Prints

- string: Print a string as described above. Return nothing.

Input Format

The first line contains an integer q, the number of strings to evaluate. Each of the next q lines contains an integer string s to query.

Constraints

- $1 \le q \le 10$
- $1 \le |s| \le 32$
- $s[i] \in [0-9]$