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A. Sum of Round Numbers

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

A positive (strictly greater than zero) integer is called *round* if it is of the form $d00 \dots 0$. In other words, a positive integer is round if all its digits except the leftmost (most significant) are equal to zero. In particular, all numbers from 1 to 9 (inclusive) are round.

For example, the following numbers are round: 4000, 1, 9, 800, 90. The following numbers are **not** round: 110, 707, 222, 1001.

You are given a positive integer n ($1 \leq n \leq 10^4$). Represent the number n as a sum of round numbers using the minimum number of summands (addends). In other words, you need to represent the given number n as a sum of the least number of terms, each of which is a round number.

Input

The first line contains an integer t ($1 \leq t \leq 10^4$) — the number of test cases in the input. Then t test cases follow.

Each test case is a line containing an integer n ($1 \leq n \leq 10^4$).

Output

Print t answers to the test cases. Each answer must begin with an integer k — the minimum number of summands. Next, k terms must follow, each of which is a round number, and their sum is n . The terms can be printed in any order. If there are several answers, print any of them.

Example

input	Copy
5 5009 7 9876 10000 10	
output	Copy
2 5000 9 1 7 4 800 70 6 9000 1 10000 1 10	

Codeforces Round #640 (Div. 4)

Finished

→ Virtual participation

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→ Problem tags

[implementation](#) [math](#) [*800](#)

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→ Contest materials

- Announcement (en)
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