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Palindrome

| Problem Code: **DPC206**

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Palindrome

A simple recursive method to generate a numeric palindrome from any number is to reverse its digits and add it to the original. If the sum is not a palindrome (which means, it is not the same number from left to right and right to left), repeat this procedure. For example for 195:

195 + 951 = 786

786 + 687 = 1473

1473 + 3741 = 5214

5214 + 4125 = 9339 Resulting palindrome

In this particular case the palindrome 9339 appeared after 4th addition. This method leads to palindromes in a few step for almost all of the integers. But there are interesting exceptions. 196 is the first number for which no palindrome has been found. It is not proven though, that there is no such a palindrome.

Your task is to write a program that gives the resulting palindrome and the number of iterations (additions) to compute it. All tests data in this problem will have an answer, will be computable with less than 1000 iterations (additions), which will yield a palindrome that is not greater than 4,294,967,295.

Input

The first line will have a number N (0<N<=100) with the number of test cases, the next N lines will each have a number P to compute its palindrome.

Output

For each of the N numbers you will have to write a line with the minimum number of iterations (additions) to get to the palindrome and the resulting palindrome separated by one space.

Sample Input

3

195

265

750

Sample Output

4 9339

5 45254

3 6666

All submissions for this problem are available.

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Tags: [rushikesh30](#)

Date Added: 10-03-2010

Time Limit: 1.25 secs

Source Limit: 50000 Bytes

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