

C - Magic Numbers

Input File: PalindromeIn.txt

An integer palindrome is an integer that gives the same value when read from the left as when read from the right. Examples are 12321 and 1221. For *most* integers that are not palindromes, an integer palindrome can be generated from them by reversing the digits of the integer and adding the resulting integer to the original integer. If the resulting sum, s , is not a palindrome the process is repeated using the sum s as the integer non-palindrome until the sum is a palindrome. For example, for the integer non-palindrome 165 the process would proceed as follows:

$$\begin{array}{r} 165 \\ 561 \\ \hline 726 \end{array}$$

$$\begin{array}{r} 726 \\ 627 \\ \hline 1353 \end{array}$$

$$\begin{array}{r} 1353 \\ 3531 \\ \hline 4884 \end{array}$$

For any integer non-palindrome, np , if this process does not yield a palindrome that is less than 2,147,483,647 we will assume that the process cannot generate a palindrome for np .

Inputs

The first line of the input contains an integer, n , which is the number of integers to be converted to integer palindromes. That line will be followed by n lines, each of which contains a single integer to be converted to a palindrome.

Outputs

There will be n lines of output, one per number to be converted to a palindrome. If the number is a palindrome, it will be output. If it cannot be converted to a palindrome less than 2,147,483,647 the output will be: `no palindrome found`. (The period is not included as part of the output.) Otherwise, the line will contain the integer palindrome generated by the process.

Sample inputs

6
165
1221
12321
195
196
2656752

Sample output

4884
1221
12321
9339
no palindrome found
9366639