

Problem E : Palindrome Generator

A palindrome is a number that reads the same whether you read it from left to right or from right to left. Here is a surprising fact. Suppose we start with a number n . We reverse the digits of n and add it to n . If this number is a palindrome we stop. Otherwise, we repeat the reversal and addition and continue. For many numbers this process leads us to a palindrome!

In this task you will be given a number n with at most 10 digits. Your task is to carry out the process described above and output the resulting palindrome, if you find one. However, if the number of digits exceeds 30 and you still have not found a palindrome then output -1.

For example if n is 149 then we get the following sequence: 149, 1090, 1991. Thus your program should output 1991 in this case. However, if we start with 196 we do not get a palindrome before the number of digits exceeds 30 and in this case the output should be -1.

Input format

Input contains multiple test cases. Each case is described by a single line with a single integer n , with not more than 10 digits.

Output format

For each test case, output a single number that is either -1 or the palindrome generated by the process described above.

Test data

You may assume that n has at most 10 digits.

Example

We now illustrate the input and output formats using the above example.

Sample input

149

Sample output

1991