

The 30th Annual ACM International Collegiate Programming Contest ASIA Regional - Seoul

Problem B Digit Generator

For a positive integer N , the digit-sum of N is defined as the sum of N itself and its digits. When M is the digit-sum of N , we call N a *generator* of M .

For example, the digit-sum of 245 is 256 ($= 245 + 2 + 4 + 5$). Therefore, 245 is a generator of 256.

Not surprisingly, some numbers do not have any generators and some numbers have more than one generator. For example, the generators of 216 are 198 and 207.

You are to write a program to find the smallest generator of the given integer.

Input

Your program is to read from standard input. The input consists of T test cases. The number of test cases T is given in the first line of the input. Each test case takes one line containing an integer N , $1 \leq N \leq 100,000$.

Output

Your program is to write to standard output. Print exactly one line for each test case. The line is to contain a generator of N for each test case. If N has multiple generators, print the smallest. If N does not have any generators, print 0.

The following shows sample input and output for three test cases.

Sample Input	Output for the Sample Input
3	198
216	0
121	1979
2005	