

Problem D

Divisible by 7

Time Limit: 2 seconds
Memory Limit: 512 Megabytes

Problem description

Your task is to write a program that takes an integer as input, reverses its digits, creates the sum of the original integer with its reversed counterpart, and checks if the sum is divisible by 7. If it is, you are done. Otherwise, we repeat the procedure until it does.

If it took more than 1,000 iterations, we assume that there is no multiples 7 can be created by using this method with the input number.

Input

The first line of the contains the number of datasets, which is not greater than 1000.

Each test case contains a positive number N ($1 \leq N \leq 10^{18}$).

Output

For each test, print the final sum that you have found. If there is no answer, print -1.

Example:

Input
5
1
2
3
4
999999
Output
77
77
9447438
77
999999

Explanation for the first test case: $1 \rightarrow 2 \rightarrow 4 \rightarrow 8 \rightarrow 16 \rightarrow 77$.

A relax page, open to next page for the next challenge in your journey to the TOP.