

Family Problem

Shima has a very unhappy family. His family members always remain sad for one or the other problems and they are so addicted to this nature that they cannot live a second without being sad. So to ensure that they never become happy, every day they take all the problems they had in the last 7 days and think about all of them and remain sad for the whole day.

For example: Let's say they had p_1 problems yesterday, p_2 problems day before yesterday and so on, then today they will think about all the problems occurred in the last 7 days and remain sad and so problems for today are total problems (i.e. the summation) that occurred in the last 7 days.

Well sad story isn't it!? But they were not like this always. It all started when Shima was born on the Day no. 7 (yes it was the first problem for this strange family). They had no problems from Day no. 0 to Day no. 6 and they had only single problem on the day Shima was born.

Can you predict how many problems they will think about on the Day no. n ?? Output it modulo 86399.

Input

First line contains an integer T , the no. of test cases.

Next T lines contain one integer per line, n .

Output

Output T lines, each corresponding to T test cases, containing one integer per line, the problems Shima's family think about on Day no. n .

Constraints

$$1 \leq n \leq 1000000000$$

$$1 \leq T \leq 20$$

Example

Input:

3

1

10

12

Output:

0

4

