

Problem K

K-Binary Repetitive Numbers

A number N is called to be K -binary repetitive if it's binary representation using K bits can be represented as a shorter binary string concatenated a number of times, for example, $N = 10$ is 4-binary repetitive since it's binary representation with 4 bits (1010) can be represented as concatenating the binary string 10 to itself, but, it is not 5-binary repetitive since its binary representation using 5 bits 01010 can not be represented as a shorter binary string concatenated a number of times.

Given a number K , can you find how many different numbers N are K -binary repetitive?

Input

The first line of input contains a single integer T ($1 \leq T \leq 10^5$), the number of test cases. Each of the next T lines contains a single integer number K ($1 \leq K \leq 10^6$).

Output

For each test in the input print a line containing one integer number, the number of different N that are K -binary repetitive, since this number can be big print it modulo $10^9 + 7$.

Input example 1	Output example 1
2	0
1	2
2	