Problem B. Baker's Gang

Source file name:	`B.c, B.cpp, B.java, B.py2, B.py3`
Input:	`Standard`
Output:	`Standard`
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Baker is a cat with a very delicate and exclusive taste for "cat nuggets", which are very expensive, though. Since Baker really wants to increase his share of cat nuggets, he with some other N cats, have planned to steal the nugget factory.

They executed their plan and it was very successful, they got quite a bunch of nuggets. Since the amount of nuggets was huge, Baker and his gang, decided to hide the nuggets in order to come sometime later and make the division in equal parts.

But ... since cats are very suspicious, specially from each other, starting with Baker, they cheated on each other.

Baker was the first, he arrived to the hideaway and counted every nugget, there were K nuggets, he took his share $\frac{K1}{N}$ of the nuggets and he realized that after dividing the amount of nuggets by N, the remainder was 1, so he took that extra nugget for his mother.

The second cat arrived a little later and he counted the nuggets and realized that the remainder after dividing by N was 1, he took his share and the one extra-nugget and left the rest.

The third cat arrived and did the same, with the same surprising fact that when dividing by N the remainder was still 1. He took "his share" and the extra-nugget.

After every single cat did the same thing with the same outcome, they reunited for the final division, and they counted the nuggets, no cat showed surprise for the lack of nuggets they noticed, but after dividing by N the number of remaining nuggets, the remainder was 1 again! So they agreed to give that extra-nugget to a street cat and problem solved.

Your task is to find the number of nuggets K that were originally stolen by Baker and his gang.

Input

The first line is a single integer T with the amount of test cases. The next T lines have a single number N which is the amount of members on Baker's gang.

- $1 \leq T \leq 10^3$
- $3 \leq N \leq 10^6$

Output

The output is the minimum natural number that fits with the description above. As this number can be big write the number modulo 1000000007 ($10^9 + 7$).

Example

Input	Output
1 4	1021

Input	Output
3 5 6 7	15621 279931 5764795