## Power of Phi(medium)

Vertu was very impressed by the golden ratio $\varphi=(1+\sqrt{ } 5) / 2$ and about it occurring in nature and all that. He now begins to wonder if any non negative integral power of $\varphi$ is also special. Since he does not like working with decimals, he decided to approximate the positive integral power of $\varphi$ to its closest integer. Help him by printing the closest integer to $\varphi^{\mathbf{n}}$, given $\mathbf{n}$.

## Input

The first line contains $\mathbf{T}$, the number of test cases. $\mathbf{T}$ lines follow, each containing one positive integer $\mathbf{n}$.

## Output

For each of these integers, print the closest integer to $\varphi^{n}$. If you think there are two closest possible integers, print either of them. Print the answer modulo $\left(10^{9}+7\right)$.

## Constraints

$T<=100000$
$0<=\mathbf{n}<=10^{9}$

## Example

## INPUT:

2
1
3
OUTPUT:
2
4

