Balanced String

A *balanced string* is a string having the following properties:

1. Both the left and right halves contain the same characters.
2. Both the left and right halves contain unique characters.

For example, abba is balanced because the left half (ab) and the right half (ba) both contain the same unique characters.

Xavier has N unique characters in unlimited supply and wants to use them to make balanced strings. Help him determine P, the number of possible balanced strings of length N.

Input Format

The first line contains an integer, T, the number of test cases.
The T subsequent lines each contain a single integer, N, the number of characters Xavier can use to form his balanced strings for that test case.

Constraints

- $N \text{ will always be even}$
- $\text{Xavier's balanced strings must be of length } N$

Output Format

For each test case, print the result of $P \ \% \ (10^{9}+7)$ on a new line.

Constraints

- $1 \le T \le 100000$
- $2 \le N \le 10^{6}$

Sample Input

```
1
2
```

Sample Output

```
2
```

Explanation

$N=2$

Xavier has two characters we'll refer to as 1 and 2. He must use these characters to form balanced strings of length 2. The possible strings are "11", "12", "21", and "22". Of those 4 strings, only 2 are balanced (i.e.: "11" and "22"), so we print the result of $2 \ \% \ (10^{9}+7)$ on a new line.