For a given N, find the number of ways to choose an integer x from the range $[0, 2^N - 1]$ such that $x \oplus (x + 1) = (x + 2) \oplus (x + 3)$, where $\oplus$ denotes the bitwise XOR operator.

Since the number of valid x can be large, output it modulo $10^9 + 7$.

Input

- The first line contains an integer T, the number of test cases. Then the test cases follow.
- The only line of each test case contains a single integer N.

Output

For each test case, output in a single line the answer to the problem modulo $10^9 + 7$.

Constraints

- $1 \le T \le 10^5$
- $1 \le N \le 10^5$

Subtasks

Subtask #1 (100 points): Original Constraints

Sample Input

```
2
1
2
```

Sample Output

```
1
2
```

Explanation

Test Case 1: The possible values of x are $\{0\}$.

Test Case 2: The possible values of x are $\{0, 2\}$.