

Perfect Cover

Mr. 10-pointer and Mr. Gyani had been trying to count the number of ways to perfectly cover a 1-by-n board with monominoes and dominoes.

With pen-and-pencil they are only able calculate the count for small n.

For example:

1-by-1 = 1 (only one monomino)

1-by-2 = 2 (either use two monomino or one domino)

1-by-3 = 3 (either all monomino, or 1 monomino followed by a domino, or 1 domino followed by a monomino).

So they approached Ms. Pavani to help them calculate the same for large n. Help her to code the solution which print the total number of ways modulo $(10^8 + 7)$.

Input

The first line of the input contains number of test cases, T. Then follows T lines containing a number n, size of board.

Output

For each test case print the number of ways to cover a 1-by-n board modulo $(10^8 + 7)$.

Constraints:

a) $0 < T \leq 10^3$

b) $0 < n \leq 10^6$

Example

Input:

```
4
1
2
3
500
```

Output:

```
1
2
3
12577845
```

Note:

- a) Perfect cover means the whole board should be completely covered, no two monomino/domino overlap each other, neither any of them lie outside of the boundary of board.
- b) Monomino is of block size 1-by-1, and orientation of the monomino is not to be considered.
- c) Size of a domino is 1-by-2.