Twins X65570_en

HOLIDAYS ARE COMING!
Last day of the advanced algorithmic classes and two siblings are walking in a big corridor. But one of the twins asks his brother: "Do you know in how many ways we can walk through this corridor?"
The corridor is L meters long and it is represented as a $2 \times L$ grid. Initially, twin A is at $(1, 1)$ and twin B is at $(2, 1)$, and they set the rules to move along the corridor:

- A twin can move to the left tile $(+1, 0)$.
- A twin can advance to the tile in front $(0, +1)$.
- A twin can cross in a diagonal, e.g. $(+1, +1)$ or $(-1, +1)$.
- The destination tiles must exist.
- Both move at the same time.
- They always move while they are not in the last tiles $(1, L)$ or $(2, L)$.
- They finish when both are in any of the last tiles $(1, L)$ or $(2, L)$.

For a given $L > 1$, return the number of of ways in which the twins can walk through the corridor. Because this number could be very large, return the result modulo $10^9 + 7$.

Input

The input starts with the number of test cases $T \leq 1000$. For each test case, there is an integer $L \leq 10^6$ representing the length of the corridor.

Output

For each test case, output an integer on a single line representing the number of ways in which the twins can walk through the corridor, modulo $10^9 + 7$.

Sample input 1	Sample output 1
2 2 3	8 72

In the first example there are 8 combinations:

- $A = (1, 2)$ and $B = (1, 2)$
- $A = (1, 2)$ and $B = (2, 2)$
- $A = (2, 2)$ and $B = (1, 2)$
- $A = (2, 2)$ and $B = (2, 2)$
- $A = (2, 1)$ and $B = (1, 2) \rightarrow A = (2, 2)$ and $B = (1, 2)$

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Problem information

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