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CODECHEF Certified
Data Structure & Algorithms Programme (CCDSAP)   EXAM DATE **26** **AUGUST 2018**   KNOW MORE

Count Permutations | Problem Code: CPERM

All submissions for this problem are available.

Read problems statements in [Mandarin Chinese](), [Russian]() and [Vietnamese]() as well.

Given **N**, count how many permutations of **[1, 2, 3, ..., N]** satisfy the following property.

Let $P_1, P_2, ..., P_N$ denote the permutation. The property we want to satisfy is that there exists an **i** between **2** and **n-1** (inclusive) such that

- $P_j > P_{j+1}$ $\forall$ $i \le j \le N - 1$.
- $P_j > P_{j-1}$ $\forall$ $2 \le j \le i$.

Input

First line contains **T**, the number of test cases. Each test case consists of **N** in one line.

Output

For each test case, output the answer modulo $10^9 + 7$.

Constraints

- $1 \le T \le 100$
- $1 \le N \le 10^9$

Subtasks

- Subtask #1(40 points): $1 \le N \le 1000$
- Subtask #2(60 points): **original constraints**

Example

```
Input:
2
2
3
```

All Submissions

Successful Submissions +

2

Explanation

Test case 1:
No permutation satisfies.

Test case 2:
Permutations [1, 3, 2] and [2, 3, 1] satisfy the property.

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Editorial:	http://discuss.codechef.com/problems/CPERM
Tags:	combinatorics, darkshadows, easy, fast-expo, nov16
Date Added:	18-04-2014
Time Limit:	1 secs
Source Limit:	50000 Bytes
Languages:	C, CPP14, JAVA, PYTH, PYTH 3.5, CS2, PAS fpc, PAS gpc, RUBY, PHP, GO, NODEJS, HASK, SCALA, D, PERL, FORT, WSPC, ADA, CAML, ICK, BF, ASM, CLPS, PRLG, ICON, SCM qobi, PIKE, ST, NICE, LUA, BASH, NEM, LISP sbcl, LISP clisp, SCM guile, JS, ERL, TCL, PERL6, TEXT, CLOJ, FS

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