Rupsa and the Game

Problem Code: **RGAME**

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Princess Rupsa saw one of her friends playing a special game. The game goes as follows:

- **N+1** numbers occur sequentially (one at a time) from A_0 to A_N.
- You must write the numbers on a sheet of paper, such that A_0 is written first. The other numbers are written according to an inductive rule — after A_{i-1} numbers have been written in a row, then A_i can be written at either end of the row. That is, you first write A_0, and then A_1 can be written on its left or right to make A_0A_1 or A_1A_0, and so on.
- A_i must be written before writing A_j, for every $i < j$.
- For a move in which you write a number A_i **(i>0)**, your points increase by the product of A_i and its neighbour. (Note that for any move it will have only one neighbour as you write the number at an end).
- Total score of a game is the score you attain after placing all the **N + 1** numbers.

Princess Rupsa wants to find out the sum of scores obtained by all possible different gameplays. Two gameplays are different, if after writing down all **N + 1** numbers, when we read from left to right, there exists some position **i**, at which the gameplays have a_j and a_k written at the i^{th} position such that $j \neq k$. But since she has recently found her true love, a frog Prince, and is in a hurry to meet him, you must help her solve the problem as fast as possible. Since the answer can be very large, print the answer modulo $10^9 + 7$.

Input

- The first line of the input contains an integer **T** denoting the number of test cases.
- The first line of each test case contains a single integer **N**.
- The second line contains **N + 1** space-separated integers denoting A_0 to A_N.

Output

Constraints

- $1 \le T \le 10$
- $1 \le N \le 10^5$
- $1 \le A_i \le 10^9$

Sub tasks

- Subtask #1: $1 \le N \le 10$ (10 points)
- Subtask #2: $1 \le N \le 1000$ (20 points)
- Subtask #3: Original Constraints (70 points)

Example

```
Input:
2
1
1 2
2
1 2 1

Output:
4
14
```

Explanation

- There are **2** possible gameplays. A_0A_1 which gives score of **2** and A_1A_0 which also gives score of **2**. So the answer is **2 + 2 = 4**

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