Rupsa and the Game Problem Code: **RGAME**

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

- For each test case, output a single line containing an integer denoting the answer.

Constraints

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

Sub tasks

- Subtask #1: $1 \leq N \leq 10$ (10 points)
- Subtask #2: $1 \leq N \leq 1000$ (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. $\mathbf{A_0A_1}$ which gives score of **2** and $\mathbf{A_1A_0}$ which also gives score of **2**. So the answer is **2 + 2 = 4**