

Nested Sum (Hard Version)

Input file: **standard input**
Output file: **standard output**
Time limit: **3 seconds**
Memory limit: **256 megabytes**

Given an array of n positive integers a_1, a_2, \dots, a_n find the value of

$$\sum_{i=1}^n \sum_{j=i+1}^n \sum_{k=j+1}^n a_i a_j a_k$$

modulo $10^9 + 7$.

Input

The first line of input contains an integer t ($1 \leq t \leq 10^4$), the number of test cases.

The first line of each test case contains an integer n ($1 \leq n \leq 10^5$), the size of the array.

The second line of each test case contains n integers a_1, a_2, \dots, a_n ($1 \leq a_i \leq 10^9$), the elements of the array.

The sum of n over all test cases doesn't exceed $5 \cdot 10^5$.

Output

For each test case output one line containing one integer, the sum described in the problem modulo $10^9 + 7$.

Scoring

Group 1: (30 points)

$1 \leq n \leq 500$, the sum of n over all test cases doesn't exceed 1000.

Group 2: (70 points)

No additional constraints.

Example

standard input	standard output
3	1
3	50
1 1 1	225
4	
1 2 3 4	
5	
5 4 3 1 2	