Problem A. Bus Analysis

Time limit:	2 seconds
Memory limit:	1024 megabytes

Adam is embarking on a very long journey by public bus. He has the option to purchase 20-minute tickets for 2 PLN and 75-minute tickets for 6 PLN[1]. Tickets can be purchased at any whole minute, and they are automatically validated. For example, a 20-minute ticket purchased at 9:14:00 is valid until 9:33:59. Adam can purchase a new ticket even if he still has a valid one.

The bus stops at N stops, i-th stop at minute t_i. At each stop, ticket inspectors may be waiting. They board the bus, immediately check all passengers, and then disembark at the same stop (this process takes only a few seconds).

At the very beginning of the journey, Adam will receive information about which stops have ticket inspectors waiting. He will then plan his ticket purchases to minimize his total expenses and have a valid ticket at the time of each inspection.

Consider all 2^N scenarios of ticket inspector placements and calculate Adam's optimal expenses in PLN. Output the remainder of the sum divided by $10^9 + 7$.

Input

The first line of the input contains an integer N ($1 \le N \le 1000$) – the number of stops.

The second line contains an increasing sequence of N integers $t_1, t_2, \ldots, t_N$ ($1 \le t_i \le 10^9$, $t_i < t_{i+1}$) – the minutes at which the bus stops.

Output

Output a single integer – the remainder of the result divided by $10^9 + 7$.

Examples

standard input	standard output
3 1 8 20	14
5 25 45 65 85 1000000000	156

Note

In the first sample test case there are 3 stops and 8 scenarios to consider. If Adam receives information that no ticket inspector is present at any of the stops, he won't buy any tickets. In the remaining 7 scenarios, he only needs one 20-minute ticket costing 2 PLN. The answer is $0 + 7 \cdot 2 = 14$ PLN.

Let's consider 2 out of 32 scenarios in the second sample test case:

- Ticket inspectors at all 5 stops $(25, 45, 65, 85, 1\,000\,000\,000)$ – Adam spends 8 PLN: 6 PLN on a 75-minute ticket and 2 PLN on a 20-minute ticket, for example bought at minutes 25 and $1\,000\,000\,000$.
- Ticket inspectors at 2 stops $(25, 45)$ – Adam spends 4 PLN on two 20-minute tickets, for example bought at minutes 25 and 45 or minutes 17 and 26.

[1]The actual prices in Warsaw are 3.40 PLN for 20 minutes and 4.40 PLN for 75 minutes or the entire route. It's usually optimal to buy longer tickets.