

Fibonacci GCD

Fibonacci numbers have the following form:

$$\begin{aligned} F_1 &= 1 \\ F_2 &= 1 \\ F_3 &= 2 \\ &\vdots \\ F_n &= F_{n-2} + F_{n-1} \end{aligned}$$

We have an array a_1, a_2, \dots, a_N which contains N elements.

We want to find $\gcd(F_{a_1}, F_{a_2}, F_{a_3}, \dots, F_{a_N})$.

Input Format

The first line contains N , where N denotes size of the array.

Each of the next N lines contains a number: the i^{th} line contains a_i .

Output Format

Print a single integer — the remainder of the division of the resulting number by $10^9 + 7$.

Constraints

$$1 \leq N \leq 2 \times 10^5$$

$$1 \leq a_i \leq 10^{12}$$

Sample Input 1

```
3
2
3
5
```

Sample Output 1

```
1
```

Explanation 1

$$\begin{aligned} F_2 &= 1 \\ F_3 &= 2 \\ F_5 &= 5 \\ \gcd(1, 2, 5) &= 1 \end{aligned}$$

Sample Input 2

```
2
3
6
```

Sample Output 2

```
2
```

Explanation 2

$$F_3 = 2$$

$$F_6 = 8$$

$$\gcd(2, 8) = 2$$