Inversland

The Kingdom of Inversland issues n denominations of currency, where the i-th denomination is worth $\frac{1}{p_i}$ dollars. To make exchanging money even more complicated, all p_i values are **distinct prime numbers**.

One drawback of this set of denominations is that in some cases, to pay a certain amount of money, the payer and the payee must exchange bills. For example, with $n = 2$ and $p = \{3, 5\}$, to pay $\frac{7}{15}$ dollars, the payer could give two $\frac{1}{3}$ bills, and receive a $\frac{1}{5}$ bill in change. It can be proven that there exists no way to pay $\frac{7}{15}$ dollars without requiring the payee to give back change. Conversely, to pay $\frac{8}{15}$ dollars, the payer can give a $\frac{1}{3}$ bill and a $\frac{1}{5}$ bill without receiving change.

To evaluate the significance of this drawback, the government wants to calculate how many values satisfy the following conditions:

- it is possible to pay that amount of money using the existing denominations, and
- it is **impossible** to pay that amount without requiring the payee to provide change.

Given n denominations, the government asks you, a programming team who has qualified for a regional competition, to calculate the number of such values and output it modulo $998\,244\,353$. In case there is an *infinite* number of values, please report it as well.

Input

The first line contains a single integer t ($1 \le t \le 10\,000$) — the number of test cases. The description of the test cases follows.

- The first line contains an integer n ($2 \le n \le 200\,000$) — the number of denominations.
- The second line contains n **distinct prime numbers** $p_1, p_2, \ldots, p_n$ ($2 \le p_i < 998\,244\,353$), describing the denomination set.
- It is guaranteed that the sum of n over all test cases does not exceed $200\,000$.

Output

For each test case, if the number of such values is infinite, print `infinity`. Otherwise, print the number of values modulo $998\,244\,353$.

Sample Input 1	Sample Output 1
2 2 3 5 10 941 947 953 967 971 977 983 991 997 998244341	4 679849251

Sample Explanation

In the first test case, it can be proven that any amount of the form $\frac{x}{15}$, where $x \in \mathbb{N}$ can be paid using $\frac{1}{3}$ and $\frac{1}{5}$ dollar bills. Among these, the following amounts cannot be paid without giving back change: $\frac{1}{15}$, $\frac{2}{15}$, $\frac{4}{15}$, and $\frac{7}{15}$.