Problem E

Delete sequence

Time limit: 1 second
Memory limit: 512 megabytes

You are given a sequence of n positive integers $a_1, a_2, \ldots, a_n$ arranged from left to right. You may perform the following operations:

- **Operation 1:** If the first two numbers of the current sequence are **coprime** or one of them is a **multiple** of the other, delete both numbers.
- **Operation 2:** If Operation 1 cannot be applied to the first two numbers, choose an integer $x > 1$, increase the first number by x (i.e. $a_1 \leftarrow a_1 + x$), and append x to the **end** of the sequence.

Your goal is to make the sequence empty (removing both the original numbers and any appended numbers) using the **minimum** number of operations.

Input

The first line contains an integer t — the number of test cases.

For each test case:

- The first line contains an integer n ($1 \leq n$).
- The second line contains n integers $a_1, a_2, \ldots, a_n$ ($2 \leq a_i \leq 10^6$).

Global constraints:

- $1 \leq t \leq 10^6$,
- $\sum_{\text{all tests}} n \leq 10^6$.

Output

For each test case, print a single integer — the minimum number of operations needed to delete the entire sequence.

Sample Input	Sample Output
2 2 28 30 1 30	4 2

Explanation

In the first test case, one optimal sequence of operations is:

$$(28, 30) \to (31, 30, 3) \to (3) \to (5, 2) \to ()$$

which uses 4 operations.