1356 – Prime Independence

A set of integers is called prime independent if none of its member is a prime multiple of another member. An integer **a** is said to be a **prime multiple** of **b** if,

a = b x k (where **k** is a prime [1])

So, **6** is a prime multiple of **2**, but **8** is not. And for example, **{2, 8, 17}** is prime independent but **{2, 8, 16}** or **{3, 6}** are not.

Now, given a set of distinct positive integers, calculate the largest prime independent subset.

Input

Input starts with an integer **T (≤ 20)**, denoting the number of test cases.

Each case starts with an integer **N (1 ≤ N ≤ 40000)** denoting the size of the set. Next line contains **N** integers separated by a single space. Each of these **N** integers are distinct and between **1** and **500000** inclusive.

Output

For each case, print the case number and the size of the largest prime independent subset.

Sample Input	Output for Sample Input
3 5 2 4 8 16 32 5 2 3 4 6 9 3 1 2 3	Case 1: 3 Case 2: 3 Case 3: 2

Note

1. An integer is said to be a prime if it's divisible by exactly two distinct integers. First few prime numbers are **2, 3, 5, 7, 11, 13, ...**
2. Dataset is huge, use faster I/O methods.