

Given  $N$  nodes, each node is labeled with an integer between 1 and  $10^6$  (**inclusive and labels are not necessarily distinct**). Two nodes have an edge between them, if and only if the GCD (Greatest Common Divisor) of the labels of these nodes is **greater than 1**. Count the number of connected components in the graph.

## Input

First line of the input  $T$  ( $T \leq 100$ ) denotes the number of testcases. Then  $T$  cases follow. Each case consists of 2 lines. The first line has a number  $N$  ( $1 \leq N \leq 10^5$ ) denoting the number of nodes. The next line consists of  $N$  numbers. The  $i$ -th ( $1 \leq i \leq n$ ) number  $X_i$  ( $1 \leq X_i \leq 10^6$ ) denotes the label of the node  $i$ .

## Output

For each case you have to print a line consisting consisting the case number followed by an integer which denotes the number of connected components. Look at the output for sample input for detail

## Sample Input

```
2
3
2 3 4
6
2 3 4 5 6 6
```

## Sample Output

```
Case 1: 2
Case 2: 2
```