F Number of Connected Components

Input: Standard Input
Output: Standard Output

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 details.

Sample Input	Output for Sample Input
2 3 2 3 4 6 2 3 4 5 6 6	Case 1: 2 Case 2: 2