1218 – Multiple Free Subset

Given a set of **n** integers, you have to take a subset such that the set is multiple free. That means you have to take a subset such that if you pick any two elements **p, q** from the subset, then **p** is not a multiple of **q** or **q** is not a multiple of **p**.

For example, let the set be {2, 5, 10, 8}, then your subset can be {2} or {10} or {5, 8}, etc. But you can't take {2, 8} since 8 is multiple of 2, or you can't take {10, 5} since 10 is multiple of 5.

Now your task is to find such a subset with maximum number of elements. There can be several solutions with maximum number of elements. In such case, we break the tie by the following:

Let **{a₁, a₂, a₃ ... aₘ}** be a solution and **{b₁, b₂, b₃ ... bₘ}** be another solution where $a_i < a_{i+1}$ and $b_i < b_{i+1}$ for **i = 1 to m-1**. Then **{a₁, a₂, a₃ ... aₘ}** is the result if

$a_i < b_i$ or
$a_i = b_i$ and $a_{i+1} < b_{i+1}$ or
$a_i = b_i$ and $a_{i+1} = b_{i+1}$ and $a_{i+2} < b_{i+2}$ or
...

For example, let one solution be {3, 5} and another solution be {3, 10}, then we want {3, 5} as our result.

Input

Input starts with an integer **T (≤ 200)**, denoting the number of test cases.

Each case starts with a line containing an integer **n (1 ≤ n ≤ 100)**. The next line contains **n** space separated integers forming the set. Each of these integers will line in the range **[1, 10⁹]**.

Output

For each case, print the case number and the multiple free subset as stated above.

Sample Input	Output for Sample Input
6 3 2 2 4 4 2 4 6 10 6 7 1 2 2 5 9 4 3 10 10 5 5 7 2 9 9 49 10 1 2 3 4 5 6 7 8 9 10	Case 1: 2 Case 2: 4 6 10 Case 3: 2 5 7 9 Case 4: 3 5 Case 5: 2 7 9 Case 6: 4 5 6 7 9