Good Elements

You are given a sequence consisting of integers $a_1, a_2, a_3, \ldots, a_n$. Any element a_i is called **good** if there exists another element a_j in the sequence ($i \neq j$) such that a_j is a **non-negative power** of a_i. In other words a_i is called **good** if there exists an element a_j where $i \neq j$ and $a_j = a_i^k$ for some $k >= 0$.
For example, consider the following sequence: **[2, 4, 4, 6, 3, 8]**. This sequence contains **3** good elements. The **1st**, **2nd** and **3rd** elements are good.
1st element "**2**" is good because there exists "**4**" and "**8**" in the different positions of the sequence which are non negative power of "**2**" ($2^2=4$, $2^3=8$). 2nd element "**4**" is good because there exists another "**4**" in a different position of the sequence which is a non-negative power of "**4**" ($4^1=4$). Same applies for the 3rd element.

Given the sequence, now you have to find out **total number of good elements** in the sequence.

Input

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

For every test case the first line contains the integer **n** the length of the given sequence. The second line contains the sequence of integers **a[1], a[2], a[3], …, a[n].**

Constraints

$1 <= t <= 10$
$1 <= n <= 10^4$
$1 <= a_i <= 10^6$

Output

For each test case print the case number followed by the result in a single line according to the following format "**Case X: R**" (without quotes), where **X** denotes the case number and **R** denotes the result. See the sample for further clarification.

Example

Input:

```
3
6
2 4 4 6 3 8
2
1 2
2
10 100
```

Output:

```
Case 1: 3
Case 2: 1
Case 3: 1
```

[This Problem Orginally Contributed by **Hafiz Al Masud Ovi**]