1370 – Bi-shoe and Phi-shoe

Bamboo Pole-vault is a massively popular sport in Xzhiland. And Master Phi-shoe is a very popular coach for his success. He needs some bamboos for his students, so he asked his assistant Bi-Shoe to go to the market and buy them. Plenty of Bamboos of all possible integer lengths (yes!) are available in the market. According to Xzhila tradition,

Score of a bamboo = **Φ (bamboo's length)**

(Xzhilans are really fond of number theory). For your information, **Φ (n)** = numbers less than **n** which are relatively prime (having no common divisor other than 1) to **n**. So, score of a bamboo of length 9 is 6 as 1, 2, 4, 5, 7, 8 are relatively prime to 9.

The assistant Bi-shoe has to buy one bamboo for each student. As a twist, each pole-vault student of Phi-shoe has a lucky number. Bi-shoe wants to buy bamboos such that each of them gets a bamboo with a score greater than or equal to his/her lucky number. Bi-shoe wants to minimize the total amount of money spent for buying the bamboos. One unit of bamboo costs 1 Xukha. Help him.

Input

Input starts with an integer **T (≤ 100)**, denoting the number of test cases.

Each case starts with a line containing an integer **n (1 ≤ n ≤ 10000)** denoting the number of students of Phi-shoe. The next line contains **n** space separated integers denoting the lucky numbers for the students. Each lucky number will lie in the range **[1, 10^6]**.

Output

For each case, print the case number and the minimum possible money spent for buying the bamboos. See the samples for details.

Sample Input	Output for Sample Input
3 5 1 2 3 4 5 6 10 11 12 13 14 15 2 1 1	Case 1: 22 Xukha Case 2: 88 Xukha Case 3: 4 Xukha