

## 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 =  $\Phi$  (bamboo's length)

(Xzhilans are really fond of number theory). For your information,  $\Phi(n)$  = 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  $T$  ( $\leq 100$ ), denoting the number of test cases.

Each case starts with a line containing an integer  $n$  ( $1 \leq n \leq 10000$ ) 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