Prime Frequency

Given a string containing only alpha-numerals (`0-9`, `A-Z` and `a-z`) you have to count the frequency (the number of times the character is present) of all the characters and report only those characters whose frequency is a prime number. A prime number is a number, which is divisible by exactly two different integers. Some examples of prime numbers are **2**, **3**, **5**, **7**, **11** etc.

Input

The first line of the input is an integer **T** (0 < **T** < 201) that indicates how many sets of inputs are there. Each of the next **T** lines contains a single set of input.

The input of each test set is a string consisting alpha-numerals only. The length of this string is positive and less than **2001**.

Output

For each set of input produce one line of output. This line contains the serial of output followed by the characters whose frequency in the input string is a prime number. These characters are to be sorted in lexicographically ascending order. Here ``lexicographically ascending" means ascending in terms of the **ASCII** values. Look at the output for sample input for details. If none of the character frequency is a prime number, you should print `` `empty' `` (without the quotes) instead.

Sample Input

```
3
ABCC
AABBBBDDDDD
ABCDFFFF
```

Sample Output

```
Case 1: C
Case 2: AD
Case 3: empty
```

Miguel Revilla 2004-12-10