A word is a string of lower-case letters. A cool word has at least 2 different letters and the number of occurrences of each different letter is different.

Here is a formal definition. Let w be a word and S be the set of letters in word w, then w is cool if and only if all $f(c)$ (for each character c in S) is all different. Here $f(c)$ means the number of occurrences of c in w.

For example, the word "ada" is cool because $f(a) = 2$, $f(d) = 1$, and they're different. "banana" is also cool because $f(a) = 3$, $f(n) = 2$, $f(b) = 1$. But the word "bbacccd" is not cool because $f(a) = f(d) = 1$. Some other interesting cool words include: mammal, needed, papaya, referee, senselessness.

Read a list of words and count the number of cool words.

Input

There will be at most 30 test cases. Each case begins with an integer n ($1 \leq n \leq 30$), the number of test cases. Following line will contain an integer m ($1 \leq n \leq 10000$), the number of words to check. Each of the following n lines contains a word containing at least one and at most 30 letters.

Output

For each test case, print the case number and the number of cool words.

Sample Input

2

2

ada

bbacccd

2

illness

a

Case 1: 1
Case 2: 0