10390   Bean Counting

The CSC has decided to hold a contest to guess the number of beans in a given jar. To make it a wee bit more interesting, they decided to have the contestants guess the number of a particular kind of bean, the jar having many types of beans in it. Each participant would pay $2.00 per guess.

If the guess is one off (either one greater or less) than the actual count, they get a single share of the total pot. If the guess is right on, they get two shares of the total pot.

Your task is to tally these guesses and print out how much each person wins.

Input

The input begins with a single positive integer on a line by itself indicating the number of the cases following, each of them as described below. This line is followed by a blank line, and there is also a blank line between two consecutive inputs.

The first line will containing hundreds of letters, from `a-z`, each representing one bean of that type of bean. There will only be 26 different types of beans. Each following line will be the guesses from a contestant. A contestant can guess as many times as they like. The line will begin with a single letter, in the range `A-Z`, leaving only 26 possible contestants. The first letter will be followed by a single space, and then up to five pairs of letter/number combinations, the letter representing the type of bean for this guess, and the number the number of that bean the contestant expects to find. The letter and the value of a guess will be separated by a ':' and each guess on lines with more than one guess will be separated by a ','.

Tallying:

The amount a contestant will receive is based on shares of a pot. The pot will consist of the total of all the guesses, at $2.00 per guess. The fraction each person gets will be based on:

$TotNum$	total number of guesses by all contestants
$TotShares$	total number of shares from all contestants
$OffOne$	number of off-by-one guesses by that contestant
$RightOn$	number of right-on guesses by that contestant

$$\frac{TotNum * \$2.00}{TotShares} * (OffOne + (RightOn * 2))$$

Output

For each test case, the output must follow the description below. The outputs of two consecutive cases will be separated by a blank line.

Print out all the winners, in alphabetical order, and their winnings, separated by a single space. Each winner should be on a line by itself.

Sample Input

```
1

aadddddddddddddddddddddddddddffffffffffffffffffwwwwwwwwwwwwwccccalalala
```

```
A a:6,c:6
B w:12
C d:25
D d:22,c:4,l:3,f:15
```

Sample Output

```
A 3.20
B 3.20
D 9.60
```