Mrs. Hubbard has invented a clever system for keeping tabs on her blackberry jam. She flled twenty-fve jars and arranged the three sizes so as to have twenty quarts on each shelf. Can you guess her secret so as to tell how much jam is on each type of jar?

As you can see, there are three types of jars, which we will call *small*, *medium* and *large*. Mrs. Hubbard puts a certain number of jars on each of her three shelves. If all jars are completely flled with jam, and you know the total amount of jam in each shelf, determine the capacity of each type of jar.

Input

Input starts with a positive integer T, that denotes the number of test cases.

Mrs. Hubbard's kids inspect the jam

Each test case begins with a blank line; after that, there will be three lines describing each shelf.

A shelf is described by four numbers, in order: three integers S, M, L which represent the number of small, medium and large jars in the shelf, and a real number J that represents the total amount of jam for that shelf.

The value of J will always be presented with two digits after the decimal point. You may assume that all test cases have a valid answer.

$T \leq 5000; 0 \leq S, M, L \leq 15; 0 < J \leq 100$

Output

For each test case, print the case number, followed by the capacity of the small, medium and large jars, in that order. Print the answers as real numbers rounded to exactly two digits after the decimal point.

Sample Input

```
2

3 3 1 20.00
6 0 2 20.00
6 4 0 20.00

3 0 1 6.00
0 2 2 10.00
1 3 1 10.00
```

Sample Output

```
Case 1: 1.11 3.33 6.67
Case 2: 1.00 2.00 3.00
```