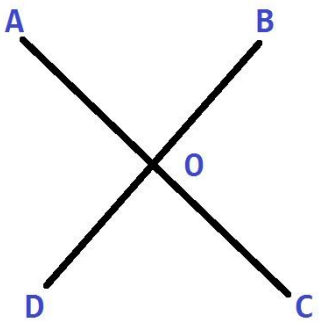
TEAM PRACTICE

Time Limit: 1s

The honorable faculty members of **EWUCoPC** are going to arrange a group contest within a few days. So it's very important for each contestant to take preparation with other members of his/her team. But the team members of "**EWU DeadLocK**" are facing a problem for team practice. They don't want to waste their time. They want you to make a program so that they can utilize their time as much as possible. A picture clarifying their residence is given below:



Three team members of this team can live in A, B, C or D located place. Here straight line **AC** denotes **one straight road** and **BD** denotes **another straight road**, the **length of these two roads may not be equal always** but **both roads intersect one another in the middle position of one another** means **O** is the middle position of both **AC** and **BD**. You'll be given three place either **A**, **B**, **C** or **D** denoting residence for three different team members and the **length** of **road AC** and **road BD**. Your task is to find the **sum of minimum distance** travelled by each team member to get together.

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Problem Setter: Swapnil Saha.
Special Thanks: Abdullah Al Mosharraf, Abdullah Al Masud Tushar, Al-Amin, S. M. Ruhul Kabir Howlader.
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Input:

First line of this program will be a single integer **T<=10000** denoting the number of test cases. Each test case will begin with two integer **1<=P, Q<=200** denoting the length of road **AC and BD** respectively. Then next line will contain three characters either **A**, **B**, **C** or **D** where 1st character for first team member residence, 2nd character for second team member residence and 3rd character for third team member residence.

Output:

For each test case you have to print "**Case K: D!**" where **K** denotes the case number and **D** denotes the sum of minimum distance travelled by each team members.

Sample Input:

```
3
10 12
A B C
10 11
A B C
10 11
C D C
```

Sample Output:

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Case 1: 16.00!
Case 2: 15.50!
Case 3: 10.50!
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