

H	<h2>Pitou x Pouf x Youpi</h2>				
	<table border="1" style="margin: auto; border-collapse: collapse;"> <tr> <td style="padding: 5px;">Time Limit</td><td style="padding: 5px;">1 second</td></tr> <tr> <td style="padding: 5px;">Memory Limit</td><td style="padding: 5px;">32 MB</td></tr> </table>	Time Limit	1 second	Memory Limit	32 MB
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Chimera Ants are extremely dangerous animals that come from the Dark Continent. There are 3 tribes of Chimera Ants, each of which has its own queen, namely, **Neferpitou**, **Shaiapouf** and **Menthuthuyoupi**. We call each tribe by its queen's name. Every other normal Chimera Ants will be called servants. Each queen stays in different location and will never move. However, servants can move freely but will never go too far away from its queen. The furthest distance that the servants can go away from its queen depends on the queen's strength which is an unknown constant and each queen may have different strength. The area where a servant of each tribe can move is its tribe territory. There are some conditions for these territories. The territory of each tribe will not overlap with each other. However, there are three points where the territories from two of the three tribes meet.

Write a program to calculate the distance between each pair of queens.

INPUT

The first line of an input will be a positive integer T ($T \leq 10^4$) the number of test cases.

Each test case consists of three lines, each of which contains two real numbers X_i Y_i ($|X_i|, |Y_i| \leq 100$). All three lines can be described as follows:

- The coordinate where **Neferpitou**'s territory and **Shaiapouf**'s territory meet
- The coordinate where **Shaiapouf**'s territory and **Menthuthuyoupi**'s territory meet
- The coordinate where **Menthuthuyoupi**'s territory and **Neferpitou**'s territory meet

It is guarantee that these three coordinates are all different.

OUTPUT

An output for each test case is a single line "**Case #c: A**" where **c** is the test case number and **A** consists of three real numbers A_1 A_2 A_3 separated by a single space, described as follows:

- A_1 is the distance between queen **Neferpitou** and queen **Shaiapouf**.

- A_2 is the distance between queen **Shaiapouf** and queen **Menthuthuyoupi**.
- A_3 is the distance between queen **Menthuthuyoupi** and queen **Neferpitou**.

However, if the input coordinates is incorrect or violates the conditions about territory, then you should display **A** as “**MERUEM IS BORN**” instead.

Please use “%.31f” as a format to display real number output.

EXAMPLE

Sample Input	Sample Output
<pre> 3 1 3 4 2 5 8 1.52 3.2 -5.2 10.4 -7.2 -2 5 5 7 6 -5 -5 </pre>	<pre> Case #1: 22.339 10.609 29.325 Case #2: 15.946 37.345 37.959 Case #3: MERUEM IS BORN </pre>