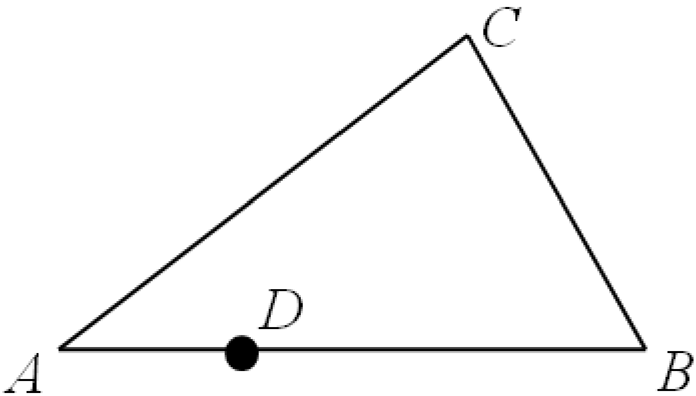
When I was a high school student, I learned that given a triangle ABC, denote D, E, F as the midpoints of AB, BC and CA, then three segments CD, AE, BF intersects at one point: the centroid.

Then I thought about the following question: if we change "midpoint" by "perimeter midpoint", can CD, AE, BF still intersect at one point?

To be precise, if CA+AD = DB+BC, we say D is the "perimeter midpoint" on AB.



It's not difficult to see that there is exactly one such point lying strictly inside the segment AB. Point E and F are defined similarly and also have unique positions.

Help (the younger) me to find out the answer!

Input

The first line contains the number of test cases T ($T \leq 100$). Each test case contains 6 integers x_1, y_1, x_2, y_2, x_3, y_3, whose absolute values do not exceed 100. These integers represent three non-collinear points $A(x_1, y_1)$, $B(x_2, y_2)$, $C(x_3, y_3)$.

Output

For each test case, if CD, AE, BF intersect at one point, print the position of the intersection to 6 decimal places. Otherwise print 'ERROR' (without quotes).

Sample Input

```
2
-1 0 1 0 0 1
0 0 5 0 3 3
```

Sample Output

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Case 1: 0.000000 0.171573
Case 2: 2.362911 0.665041
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