
Final Defense Line

Input file: **standard input**
Output file: **standard output**
Time limit: 1 second
Memory limit: 64 megabytes

There is a circle in the plane. Both the coordinates of the center and the radius are unknown.

Chiaki found three distinct points A , B and C in the plane. And she also knows the shortest distance from each point to the circumference.

Chiaki would like to find the smallest circle according to above information.

Note that in general, a circle with infinite radius is a line. But in this problem, line is not considered as a circle.

Input

There are multiple test cases. The first line of input contains an integer T ($1 \leq T \leq 2 \times 10^5$), indicating the number of test cases. For each test case:

The first line contains three integers x_a , y_a and d_a ($-100 \leq x_a \leq 100, y_a = 0, 1 \leq d_a \leq 100$) denoting the coordinates of A and the shortest distance to the circumference.

The second line contains three integers x_b , y_b and d_b ($-100 \leq x_b \leq 100, y_b = 0, 1 \leq d_b \leq 100$) denoting the coordinates of B and the shortest distance to the circumference.

The third line contains three integers x_c , y_c and d_c ($-100 \leq x_c, y_c, d_c \leq 100, d_c \neq 0$) denoting the coordinates of C and the shortest distance to the circumference.

If the distance is equal to 0, the point is on the circumference. If distance is greater than 0, the point is inside the circle. If distance is less than 0, the point is outside the circle and the shortest distance is the absolute value.

It is guaranteed that the minimum possible radius of the circle is at most 10^4 .

Output

For each test case, if there are infinite possible circles, output -1 in a single line. If there is no such circle, output 0 in a single line. Otherwise, output an integer m and a real number r in a single line separated by one space denoting the number of possible circles and the radius of the smallest circle. Your answer will be accepted if the relative error of your answer is no more than 10^{-6} .

Example

standard input	standard output
2	2 10.327329213474
0 0 1	2 5.341730785446
3 0 2	
10 2 2	
0 0 1	
3 0 2	
10 2 -2	

Note

The image below shows the sample.

