Statement problem Teleport

Everyone knows that in Bugland rooms are an infinite plane surface in which each point is described by two coordinates (x, y).

Two bugs A and B can be found at coordinates (X_a, Y_a) and (X_b, Y_b).

It is well known that in Bugland beds are perfect circles, described by the coordinates of the center of the circle and its radius.

In the room in which the two bugs live there is also a single bed with center at (X_c, Y_c) and radius R.

A and B want to meet but they want to be as silent as possible. Walking on the floor one unit makes 1 NPU (Noise per Unit), for example walking from $(1, 1)$ to $(3, 1)$ makes 2 NPU, and walking from $(1, 1)$ to $(2, 2)$ makes $\sqrt{2}$ NPU.

On the other hand, walking on the bed is completly silent.

Help the two bugs A and B meet such taht the sum of their $NPUs$ is minimal.

Input

From *stdin* you will read the number of tests T.

Each test is described by 7 integer numbers:

X_a, Y_a, X_b, Y_b, X_c, Y_c, R, where X_a, Y_a, X_b, Y_b are the position of the two bugs and X_c, Y_c and R are the center and the radius of the bed.

Output

In *stdout* you will print T lines, the ith line containing the answer for the ith query.

The printed numbers have to have **EXACTLY** 6 decimals, rounded down.

It is guaranteed that the 7th decimal of the answer is inside the interval $[2, 7]$.

Restrictions

- $1 \leq T \leq 10^5$

- $-10^6 \leq X_a,\ Y_a,\ X_b,\ Y_b,\ X_c,\ Y_c,\ R \leq 10^6$

- **PAY ATTENTION to printing real numbers!**

Example

stdin	stdout
1	3.398345
0 0 5 2 2 1 1	