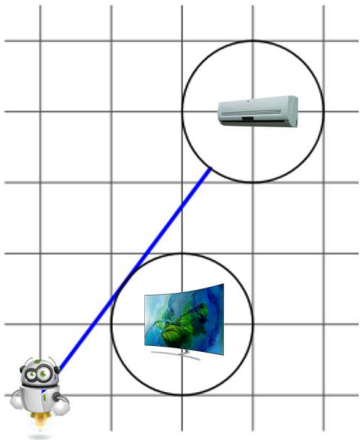
Problem G
Robot
Time Limit: 1 second

You do not need to manually turn on/off your home appliances because robots can help you with such tasks. In your laboratory, you have just developed a robot that can move freely in a room to turn on and off the TV and the air conditioner. The maximum distances the robot can control the TV and the air conditioner are R_1 and R_2, respectively. The distance between the TV and the air conditioner is strictly greater than $R_1 + R_2$.

Your task is to help the robot to find the shortest path to move from its initial position to turn on both the TV and the air conditioner.

Input



The first line contains three integers: X_1, Y_1 and R_1, the coordinates and control radius of the TV, respectively ($0 \le |X_1|, |Y_1|, R_1 \le 10^6$).

The second line contains three integers: X_2, Y_2 and R_2, the coordinates and control radius of the air conditioner, respectively ($0 \le |X_2|, |Y_2|, R_2 \le 10^6$).

The third line contains two integers X and Y, the initial position of the robot ($0 \le |X|, |Y| \le 10^6$).

Output

Display the minimum distance the robot should move to turn on both devices. The error should not exceed 10^{-6}.

Sample Input	Sample Output
2 1 1 3 4 1 0 0	4.000000