

Fair Split of the Golden Tablet

Input file: **standard input**
Output file: **standard output**
Time limit: 1 second
Memory limit: 256 megabytes

Two brothers have inherited a rectangular golden tablet. They wish to divide this tablet into two parts of equal surface area by making a vertical cut. The cut should be made such that both parts have the same area, taking into account that there is a circular hole inside the tablet.

The tablet is placed on the xy plane with:

- * the bottom-left corner at $S = (S_x, S_y)$
- * the top-right corner at $T = (T_x, T_y)$
- * its sides parallel to the axes.

The hole is described by its center point $C = (C_x, C_y)$, and radius R .

Input

The first line contains the integers S_x, S_y, T_x, T_y .

The next line contains the integers C_x, C_y, R .

Output

Output a single floating-point number, which is the x -coordinate of the vertical cut that divides the tablet into two regions of equal remaining area after accounting for the circular hole. The output should be rounded to 4 decimal places.

Limits

- * $-10^6 \leq S_x, S_y, T_x, T_y \leq 10^6$
- * The circle is completely inside the tablet.

Example

standard input	standard output
0 0 10 7 5 3 1	5.0000

Note

