

## D. Area of Two Circles' Intersection

time limit per test: 2 seconds

memory limit per test: 256 megabytes

input: standard input

output: standard output

You are given two circles. Find the area of their intersection.

### Input

The first line contains three integers  $x_1, y_1, r_1$  ( $-10^9 \leq x_1, y_1 \leq 10^9, 1 \leq r_1 \leq 10^9$ ) — the position of the center and the radius of the first circle.

The second line contains three integers  $x_2, y_2, r_2$  ( $-10^9 \leq x_2, y_2 \leq 10^9, 1 \leq r_2 \leq 10^9$ ) — the position of the center and the radius of the second circle.

### Output

Print the area of the intersection of the circles. The answer will be considered correct if the absolute or relative error doesn't exceed  $10^{-6}$ .

### Examples

<b>input</b>	<a href="#">Copy</a>
<pre>0 0 4 6 0 4</pre>	
<b>output</b>	<a href="#">Copy</a>
<pre>7.25298806364175601379</pre>	

  

<b>input</b>	<a href="#">Copy</a>
<pre>0 0 5 11 0 5</pre>	
<b>output</b>	<a href="#">Copy</a>
<pre>0.000000000000000000</pre>	