

**Three points****P10622\_en**

Onzè Concurs de Programació de la UPC - Semifinal (2013-06-19)

Let  $d(p, q)$  denote the geometric distance between two points  $p$  and  $q$  on the plane. Given three points  $a, b$  and  $c$ , please choose three points  $a', b'$  and  $c'$  such that:

- $a', b'$  and  $c'$  are on the same straight line;
- the sum of distances  $d(a, a') + d(b, b') + d(c, c')$  is as small as possible.

**Input**

Input consists of several cases, each one with three different points  $a, b$  and  $c$ . Every given point has two real coordinates with at most two digits after the decimal point, and with absolute value between 0 and  $10^6$ .

**Output**

For every case, print the minimum sum of distances with four digits after the decimal point. The input cases have no precision issues.

**Sample input**

0 0	100 0	0 100
-1.5	-0.5	0.5 0.5
		2.5 1.5

**Sample output**

70.7107
0.0000

**Problem information**

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