AUSTRALIAN MATHS TRUST

Problem: Pirates

You may submit a solution using the form below. Please be sure to submit your **source code** (not a compiled executable), and to select the correct programming language in the drop-down box. Only submissions in C, C++, Caml, Haskell, Java, Pascal, PHP or Python are accepted at the present time.

This problem will be judged on **orac (compilers.pl)**.

Choose source file | Python

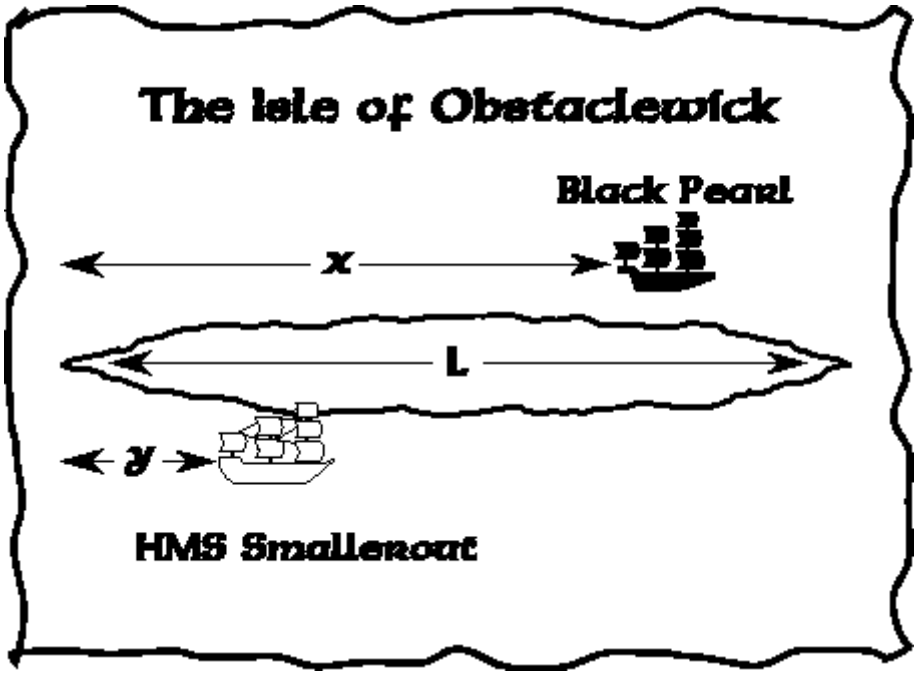
Submit

Pirates

Input File: `piratein.txt`
Output File: `pirateout.txt`
Time Limit: 1 second

Yarr! Welcome aboard the *Black Pearl*! I'm Captain Mia Swamp, and this is my First Matey, Growlybills. We've heard you're handy with these computing contraptions, so I'll make you a deal: help us out with a little problem, and we *won't* feed you to the sharks.

You're in? Thought so.



See that map yonder? That long, thin island there is the *Isle of Obstaclewick*. Boring place. All you need to know is that it's L nautical miles long from east to west, and so thin we all just say it has zero width.

Our ship, the *Black Pearl*, is sailing the north coast of the island, X nautical miles from the west point. See the other ship, the one sailing the south coast, Y nautical miles from the west point? That's the *HMS Smallerout*, our target. It may look like a wibbly-wobbly old thing, but it's carrying some of Britain's greatest treasures.

We can sail either way around the Isle of Obstaclewick, approaching the *Smallerout* from either side. What we want *you* to do is tell us which way is shorter. We don't want to overwork the... volunteers... in the galley. So that's your job, landlubber! Write us a program that calculates the shortest distance we have to sail to reach the *Smallerout*!

Constraints

To evaluate your solution, the judges will run your program against several different input files. All of these files will adhere to the following bounds:

- $1 \leq L \leq 10{,}000$, where L is the length of the Isle of Obstaclewick, given in nautical miles.
- $0 \leq X, Y \leq L$, where X and Y are the positions of the *Black Pearl* and the *HMS Smallerout* respectively, given in nautical miles from the west point of the Isle.

Input

Your program should read from the file . The first line of this file will contain the integer L. The second line will contain the integer X, and the third line will contain the integer Y.

Output

Your program should write to the file . Your output file should consist of a single integer: the shortest distance the *Black Pearl* must travel to reach the *HMS Smallerout*, given in nautical miles.

Sample Input 1

```
6
4
1
```

Sample Output 1

```
5
```

Sample Input 2

```
10
10
10
```

Sample Output 2

```
0
```

Sample Input 3

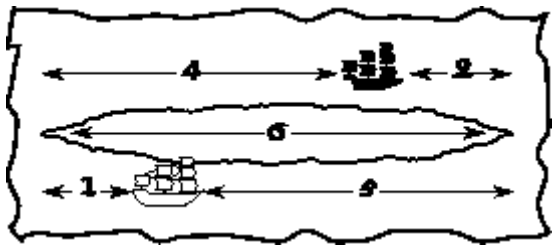
```
9
2
7
```

Sample Output 3

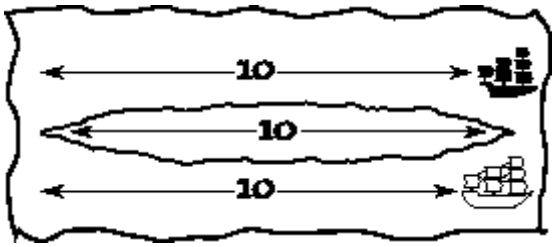
```
9
```

Explanation

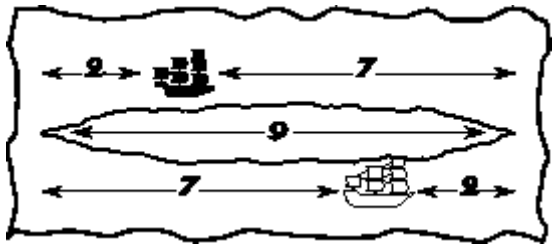
In the first case, the *Black Pearl* can either sail west around the Isle, with a total distance of *4+1=5* nautical miles, or east around the Isle, with a total distance of *2+5=7* nautical miles. Hence the shortest distance is *5* nautical miles.



In the second case, both the *Black Pearl* and the *HMS Smallerout* are at the east point of the Isle. The distance between them is thus zero.



In the third case, sailing in either direction around the Isle takes *9* nautical miles.



Scoring

The score for each input scenario will be 100% if the correct answer is written to the output file, and 0% otherwise.
Don't disappoint or ye'll be walkin' the plank!

You have made the following previous submissions for this problem. Click on any attempt to view the source code as well as its judging results.

	Score	Submitted
Attempt #1 (/cgi-bin/train/view_submission.pl?problemid=565&set=aio11int&attempt=1)	100%	Sun 24 Feb 2019, 3:52am

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Contact: training@orac.amt.edu.au (mailto:training@orac.amt.edu.au)

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