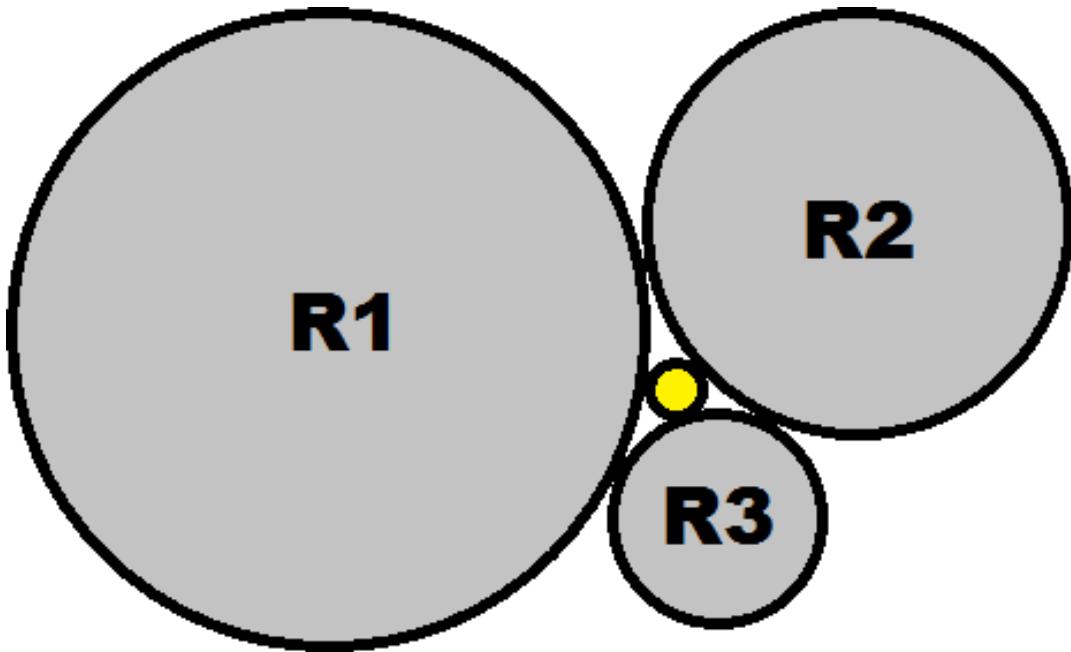


CIRCLE_E - Three Circle Problem (EASY)

no tags

Given 3 distinct circles with positive integer radius **R1**, **R2**, and **R3**, and arranged like in the picture below:



Now, your task is to compute radius of small circle that can be created like yellow circle in the picture above. All circles in the picture above tangent each other.

Input

The first line in the input data, there is an integer **T** ($0 < T \leq 10^3$) denoting number of test cases, than **T** lines follow.

For each lines, there are three integer **R1**, **R2**, and **R3**, ($0 < \{R1, R2, R3\} < 10^9$) denoting radius of each circle like in the picture above.

Output

For each test case, output radius of small circle that can be made, like in the picture above. Any output with absolute error less than 10^{-6} is accepted.

Example

Input:

```
3  
1 1 1  
10 10 10  
23 46 69
```

Output:

```
0.154701  
1.547005  
6.000000
```

You can see my submission history and time record for this problem: here
[http://4.bp.blogspot.com/-fHI2MMejYp0/UV9hytkr7EI/AAAAAAAASk/i42G22Ndq5Q/s1600/TCP\(easy\).png](http://4.bp.blogspot.com/-fHI2MMejYp0/UV9hytkr7EI/AAAAAAAASk/i42G22Ndq5Q/s1600/TCP(easy).png)

See also: Another problem added by Tjandra Satria Gunawan (..TJANDRA/)

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mishra_sharad (/users/mishra_sharad): 2016-08-14 21:23:10

don't be confused by integer inputs mentioned in problem....use double otherwise
WA is waiting for u...long long int costed me one WA...



ritik_agr (/users/ritik_agr): 2016-07-08 09:11:51

use of formula only



vineetpratik (</users/vineetpratik>): 2016-07-06 11:43:38

the inner soddy circle



shubham9466 (</users/shubham9466>): 2016-03-13 17:19:10

for c/c++: Use double for taking radius input
costed me a wrong ans..



street_funker (/users/street_funker): 2016-02-23 18:52:50

use double



rishabh_1997 (/users/rishabh_1997): 2016-02-15 19:45:52

too easy if u know the formula...

For math geeks, i prefer you to find formula yourself...



ragwave (/users/ragwave): 2016-01-02 13:17:04

use setiosflags(ios::fixed) to avoid large answer in exponential form!!



hmp (/users/hmp_ism): 2015-12-18 06:22:08

equate 3 smaller triangle's area to a larger triangle area and get required radius.



kiner_shah (/users/kiner_shah): 2015-11-05 10:03:23

Soddy circles! Got it! AC!



prakash_reddy (/users/prakash_reddy): 2015-08-21 19:59:37

Simply use the formula of soddy(inner) circle.... :)

Last edit: 2015-08-21 19:59:57

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2. Please be careful, leave short comments only. Don't spam here.
3. For more discussion (hints, ideas, solutions) please visit our forum (/forum).
4. Authors of the problems are allowed to delete the post and use html code here (e.g. to provide some useful links).



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Added by: Tjandra Satria Gunawan
(/users/tjandra)
Date: 2013-04-05
Time limit: 1s
Source limit: 10000B
Memory limit: 1536MB
Cluster: Cube (Intel G860) (/clusters/)
Languages: All except: ASM64
Resource: Own Problem

Vote requirements

- ✗ user for 1 from 5 needed days
- ✗ solved 0 from 15 needed problems
- ✓ solve this problem

Own tags



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