Inter University Programming Contest LNMIIT

The LNM Institute of
Information Technology

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← **Problems** / Fox and Gadgets

Fox and Gadgets

Max. Score: 100

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Problem Statement

Gotham city is peaceful since many years. But once again the clouds of danger are surrrounding the city.

Over the years, Lucius Fox has designed and manufactured lots of gadgets. In order to avoid keeping all the gadgets at one place, he has formed a wide network of storehouses across the city.

Only one gadget is kept at a storehouse and all the storehouses are connected, i.e. there exists a path between any 2 storehouses.

He has designed gadgets in such a way that any two gadgets can be used together to form a bigger gadget and work better. Thus, two gadgets have a factor of compatability which determines how better they'll work if clubbed together.

But as every coin has two sides, these gadgets can also become a danger for the city if got in wrong hands.

On the other side, Bane was looking for an opportunity to destroy the whole city in one go. He has somehow scraped the value of factors which determine the compatability of gadgets. Now, he is searching those two gadgets which are most compatible to each other.

The compatability of two gadgets is dependent on their **Clock Rates** and **Net Bit Speed**.

If there are two pairs of machines then the pair whose functional value is less as compared to the other is more compatible. Compatability of two gadgets is given by the function f(g1,g2) where f(g1,g2) is the average of absolute difference between their **Clock Rates** and their **Net Bit Speed**.

Now Bane wants to know the maximum compatability between any two gadgets in order to get hold of them and destroy Gotham.

Input :

The first line contains *'t'* the number of test cases. The first line of each test case contains *'n'* the number of storehouses. *'n'* lines follow, each having two integers *'c$_i$'* ,the Clock Speed and *'b$_i$'* the Net Bit Speed of the gadget *'i'*.

Output :

For each test case output a single number : the maximum compatibility between any two gadgets. Your answer must be correct exactly upto 6 decimal places.

Constraints :

1<= t <= 50

1<= n <= 10^5

1<= c_i <= 10^8

1<= b_i <= 10^8

Sample Input (Plaintext Link)

```
1
3
42  57
25  34
62  48
```

Sample Output (Plaintext Link)

```
14.500000
```

Time Limit: 1 sec(s) for each input file.

Memory Limit: 256 MB

Source Limit: 1024 KB

Scoring: Score is assigned when all testcases pass.

Allowed languages: C, C++, Clojure, Go, Haskell, C#, Java, Objective-C, Perl, PHP, Python, Ruby

Load Code Editor   You can submit code after loading editor.

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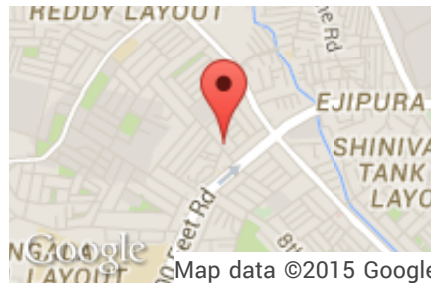## Developers

Judge Environment

Solution Guide

Problem Setter Guide

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