The TCS Global Coding Contest



04 Hr **42** Min **40** Sec

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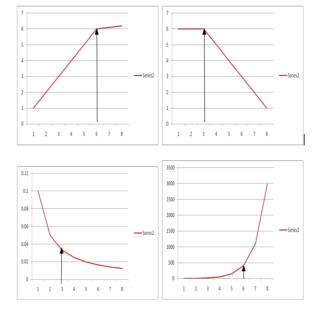
A B C D E F G H

ONLINE EDITOR (A)

Inflection Point

+ Problem Description

In performance testing of applications, one has to deal with many curves. Some examples include Ramp-up, Ramp-down, exponential increase of response times etc. K is a smart performance tester and she detects that if she can automate the process of detection of inflection points of these curves, she can automate performance testing that require zero manual intervention and find the sweet spots where application performs the best. Help her find the Inflection point in the curves. Some diagrams below help understand Inflection points better.



Note: Assume that the inflection point lies in input dataset.

+ Constraints

Number of points<= 10000

+ Input Format

First line of input corresponds to all x-coordinates of the curve separated by space.

Second line of input corresponds to all y-coordinates of the curve separated by space.

Output

X and Y coordinate of inflection point delimited by comma, precise upto two digit after decimal point.

- + Test Case
- + Explanation

Example 1

Input

1, 2, 3, 4, 5, 6, 7, 8, 9, 10

200, 100, 70, 60, 50, 45, 40, 30, 35, 15

Output

2.00,100.00

Example 2

Input

1, 1.2, 1.23, 1.3, 1.45, 1.59, 1.75, 1.95, 2.5, 3, 3.5, 5.1, 5.8, 6.6, 7, 7.5, 8.1, 10, 15, 20, 30, 40, 50

6, 7, 10, 11, 15, 20, 25, 25.5, 26, 26.5, 27, 29, 30, 30.6, 30.9, 31.3, 32.5, 33, 33, 33.3, 32.3, 33.5

Output

8.10,32.50

Upload Solution [Question : A]

I, sammeta giri confirm that the answer submitted is my own.

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