Jack isn't really good at math, but his sadistic teacher still gave him some math exercises about sequences. He needs to find the next number of the given `sequence`, which can be one of the following three types:

- arithmetic progression;
- geometric progression;
- pseudo-fibonacci sequence (a sequence each element of which is the sum of two preceding elements).

You are given `4` first numbers in the series as a string, in which the numbers are separated by commas. Help Jack to figure out what type of the sequence it is, and return the next number.

Example

- For `sequence = "4,6,10,16"`, the output should be

  `CompletetheSequence(sequence) = 26`.

  The sequence is a pseudo-fibonacci sequence.

- For `sequence = "5,10,20,40"`, the output should be

  `CompletetheSequence(sequence) = 80`.

  The sequence for a geometric progression with `r = 2`.

- For `sequence = "2,4,6,8"`, the output should be

  `CompletetheSequence(sequence) = 10`.

  The sequence for a arithmetic progression with `d = 2`.

Input/Output

- **[time limit] 4000ms (py)**
- **[input] string sequence**

  A string containing `4`numbers separated by a comma.

  Constraints:

  `7 ≤ sequence.length ≤ 254`.

- **[output] integer**

  The next element of the `sequence`.