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ARIORGEO - Arithmetic or Geometric ?

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Given a sequence of three real numbers, write a program that determine whether the sequence is part of an arithmetic progression or a geometric progression or neither of them.

Recall that an arithmetic progression of n terms with common difference " d " can be written in the form: $a, a+d, a+2d, a+3d, \dots, a+(n-1)d$

and that a geometric progression of n terms with common ratio " r " can be written in the form: $a, ar, ar^2, ar^3, \dots, ar^{n-1}$

Input

The first line of the input contains an integer **T** denoting the number of test cases. The description of **T** test cases follows. Each test case is described in a single line containing three space-separated **double precision real numbers**.

Output

For each test case, output a single line containing either:

- "Arithmetic": if the numbers form an arithmetic progression.
- "Geometric": if the numbers form a geometric progression.
- "None": if the numbers do not form any of them.
- "Both": if the numbers form both of them.

Example

Input:

```
6
4 10 16
-4 2 -1
1 4 10
0.5 -0.25 0.125
-1.5 -0.5 0.5
2.18 2.18 2.18
```

Output:

```
Arithmetic
Geometric
None
Geometric
Arithmetic
Both
```

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messi10goat (/users/messi10goat): 2019-12-27 07:29:02

What the hell is wrong with the question... @mbk_live I really think that there is some issue with it...



krishp (/users/krishp): 2019-12-22 03:08:49

Very confusing as to why i keep getting WA when submitting code. Am i correct in assuming that 0-0-0 is both a geometric and arithmetic sequence?



ayushomi_007 (/users/ayushomi_007): 2019-06-26 20:31:10

Why is this question showing WA. and till now why there are zero best solutions of this question.



harsh_pandey (/users/harsh_pandey): 2019-06-20 21:22:16

No correct submissions out of the 500+ submissions made.



makesh_01 (/users/makesh_01): 2019-06-20 08:28:24

It works for all test cases given here when I run it on ideone, but when I try to submit it here, it is showing wrong answer! Could anyone help me out?



abuhanif (/users/abuhanif): 2019-05-08 10:13:35

same here



drdrunkenstein (/users/drdrunkenstein): 2019-03-14 04:53:31

Even after importing decimal library in python which supports 128 digits of decimal it shows WA. Maybe some error in test cases



dhruv2212000 (/users/dhruv2212000): 2019-02-17 07:36:55

same here :(



wolf_001 (/users/wolf_001): 2019-02-13 09:06:28

showing wa



divya_321 (/users/divya_321): 2019-02-01 04:01:35

same here

Feedback



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 Date: 2019-01-09
 Time limit: 1s
 Source limit: 50000B
 Memory limit: 1536MB
 Cluster: Cube (Intel G860) (/clusters/)
 C-CLANG C C++ 4.3.2 CPP
 Languages: CPP14 CPP14-CLANG C99
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 SWIFT

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