Artificium

What's That Progression?

Runtime Limit – 3s

Problem Statement

You'll get an array of numbers, detect if that array is Arithmetic Progression, Geometric progression or just Random.

An arithmetic progression (AP) is a sequence of numbers where the difference between any two consecutive terms is always constant.

A geometric progression (GP) is a sequence of numbers where each term after the first is found by multiplying the previous one by a fixed, non-zero number called the common ratio.

Format

Input

Line 1: a string containing a list of integers separated by spaces

keep in mind that the integers may be negative

Output

Line 1: type of progression: **Arithmetic Progression**, **Geometric progression** or just **Random**

Constraints

Input only contains **Integers** from -1000 to 1000

3 ≤ Total number of integers in input < 100

Sample

Input

1 2 4 8 16 32

Output

Geometric Progression