Progression

Given three numbers, find out if they from arithmetic progression, geometric progression, both, or none.
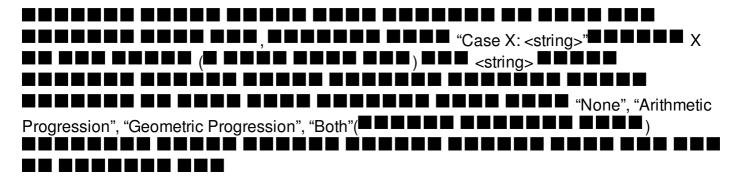
██████ ██████ █████ █████, ██████ ████ ███ ████ ██ ██████ ████, ████████ ████, █████ ███ ████, ████ ██████ ██

Input

First line contains the number of test cases T (T ≤ 50). Then T lines follow, each containing three integers n1, n2, n3 where 1 ≤ n1, n2, n3 ≤ 1000.

█████ █████ █████ █████ █████ █████ T (T ≤ 50)█████ █████, ██ ███ T ██ ████ █████ ████████ █████ █████ ███ █████ n1, n2, n3█████ █████ █████ 1 ≤ n1, n2, n3 ≤ 1000.

Output

For each test case, print a line of the following format: "Case X: <string>" where X is the case number starting from 1, and <string> must be replaced with one of the following four strings: "None", "Arithmetic Progression", "Geometric Progression", "Both", without quotes obviously, depending on your result. Check sample input output section for more details.

██████ █████ █████ ████ ██████ ██ ████ ███ █████ ████ ███, ██████ ████ "Case X: <string>"█████ X ██ ███ █████ (█ ████ ████ ███) ███ <string> █████ █████ █████ █████ █████ █████ █████ ██ ████ ████ █████ ████ ████ "None", "Arithmetic Progression", "Geometric Progression", "Both"(█████ ██████ ████) ██████ █████ █████ █████ █████ ████ ███ ███ ██ █████ ███

Example

Input:

```
4
1 2 5
1 3 5
2 4 8
2 2 2
```

Output:

```
Case 1: None
Case 2: Arithmetic Progression
Case 3: Geometric Progression
Case 4: Both
```