Problem 3658: GCD of Odd and Even Sums

Problem Information

Difficulty: Easy
Acceptance Rate: 82.34%
Paid Only: No
Tags: Math, Number Theory

Problem Description

You are given an integer `n`. Your task is to compute the **GCD** (greatest common divisor) of two values:

* `sumOdd`: the sum of the first `n` odd numbers.

* `sumEven`: the sum of the first `n` even numbers.

Return the GCD of `sumOdd` and `sumEven`.

Example 1:

Input: n = 4

Output: 4

Explanation:

* Sum of the first 4 odd numbers `sumOdd = 1 + 3 + 5 + 7 = 16` * Sum of the first 4 even numbers `sumEven = 2 + 4 + 6 + 8 = 20`

Hence, `GCD(sumOdd, sumEven) = GCD(16, 20) = 4`.

Example 2:

Input: n = 5

Output: 5

Explanation:

* Sum of the first 5 odd numbers `sumOdd = 1 + 3 + 5 + 7 + 9 = 25` * Sum of the first 5 even numbers `sumEven = 2 + 4 + 6 + 8 + 10 = 30`

Hence, `GCD(sumOdd, sumEven) = GCD(25, 30) = 5`.

Constraints:

* `1 <= n <= 10■■■■■■■00`

Code Snippets

C++:

```
class Solution {
public:
int gcdOfOddEvenSums(int n) {

}
};
```

Java:

```
class Solution {
public int gcdOfOddEvenSums(int n) {

}
}
```

Python3:

```
class Solution:
def gcdOfOddEvenSums(self, n: int) -> int:
```