Problem 1201: Ugly Number III

Problem Information

Difficulty: Medium
Acceptance Rate: 30.91%
Paid Only: No
Tags: Math, Binary Search, Combinatorics, Number Theory

Problem Description

An **ugly number** is a positive integer that is divisible by `a`, `b`, or `c`.

Given four integers `n`, `a`, `b`, and `c`, return the `nth` **ugly number**.

Example 1:

Input: n = 3, a = 2, b = 3, c = 5 **Output:** 4 **Explanation:** The ugly numbers are 2, 3, 4, 5, 6, 8, 9, 10... The 3rd is 4.

Example 2:

Input: n = 4, a = 2, b = 3, c = 4 **Output:** 6 **Explanation:** The ugly numbers are 2, 3, 4, 6, 8, 9, 10, 12... The 4th is 6.

Example 3:

Input: n = 5, a = 2, b = 11, c = 13 **Output:** 10 **Explanation:** The ugly numbers are 2, 4, 6, 8, 10, 11, 12, 13... The 5th is 10.

Constraints:

* `1 <= n, a, b, c <= 109` * `1 <= a * b * c <= 1018` * It is guaranteed that the result will be in range `[1, 2 * 109]`.

Code Snippets

C++:

```cpp
class Solution {
public:
    int nthUglyNumber(int n, int a, int b, int c) {

    }
};
```

Java:

```java
class Solution {
    public int nthUglyNumber(int n, int a, int b, int c) {

    }
}
```

Python3:

```python
class Solution:
    def nthUglyNumber(self, n: int, a: int, b: int, c: int) -> int:
```