

Problem 2749: Minimum Operations to Make the Integer Zero

Problem Information

Difficulty: Medium

Acceptance Rate: 58.21%

Paid Only: No

Tags: Bit Manipulation, Brainteaser, Enumeration

Problem Description

You are given two integers `num1` and `num2`.

In one operation, you can choose integer `i` in the range `[0, 60]` and subtract `2i + num2` from `num1`.

Return the integer denoting the **minimum** number of operations needed to make `num1` equal to `0`.

If it is impossible to make `num1` equal to `0`, return `-1`.

Example 1:

Input: `num1 = 3, num2 = -2` **Output:** `3` **Explanation:** We can make 3 equal to 0 with the following operations: - We choose `i = 2` and subtract `2 * 2 + (-2)` from 3, `3 - (4 + (-2)) = 1`. - We choose `i = 2` and subtract `2 * 2 + (-2)` from 1, `1 - (4 + (-2)) = -1`. - We choose `i = 0` and subtract `2 * 0 + (-2)` from -1, `(-1) - (1 + (-2)) = 0`. It can be proven, that 3 is the minimum number of operations that we need to perform.

Example 2:

Input: `num1 = 5, num2 = 7` **Output:** `-1` **Explanation:** It can be proven, that it is impossible to make 5 equal to 0 with the given operation.

Constraints:

*`1 <= num1 <= 109` *`-109 <= num2 <= 109`

Code Snippets

C++:

```
class Solution {  
public:  
    int makeTheIntegerZero(int num1, int num2) {  
  
    }  
};
```

Java:

```
class Solution {  
    public int makeTheIntegerZero(int num1, int num2) {  
  
    }  
}
```

Python3:

```
class Solution:  
    def makeTheIntegerZero(self, num1: int, num2: int) -> int:
```