Problem 2033: Minimum Operations to Make a Uni-Value Grid

Problem Information

Difficulty: Medium
Acceptance Rate: 67.48%
Paid Only: No
Tags: Array, Math, Sorting, Matrix

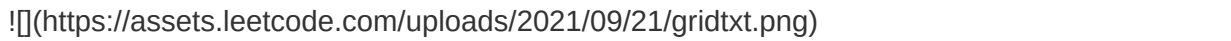
Problem Description

You are given a 2D integer `grid` of size `m x n` and an integer `x`. In one operation, you can **add** `x` to or **subtract** `x` from any element in the `grid`.

A **uni-value grid** is a grid where all the elements of it are equal.

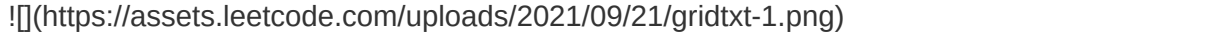
Return _the**minimum** number of operations to make the grid **uni-value**_. If it is not possible, return `-1`.

Example 1:



Input: grid = [[2,4],[6,8]], x = 2 **Output:** 4 **Explanation:** We can make every element equal to 4 by doing the following: - Add x to 2 once. - Subtract x from 6 once. - Subtract x from 8 twice. A total of 4 operations were used.

Example 2:



Input: grid = [[1,5],[2,3]], x = 1 **Output:** 5 **Explanation:** We can make every element equal to 3.

Example 3:

Input: grid = [[1,2],[3,4]], x = 2 **Output:** -1 **Explanation:** It is impossible to make every element equal.

Constraints:

* `m == grid.length` * `n == grid[i].length` * `1 <= m, n <= 105` * `1 <= m * n <= 105` * `1 <= x, grid[i][j] <= 104`

Code Snippets

C++:

```
class Solution {
public:
int minOperations(vector<vector<int>>& grid, int x) {

}
};
```

Java:

```
class Solution {
public int minOperations(int[][] grid, int x) {

}
}
```

Python3:

```
class Solution:
def minOperations(self, grid: List[List[int]], x: int) -> int:
```