5895. Minimum Operations to Make a Uni-Value Grid

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Total Accepted:	0
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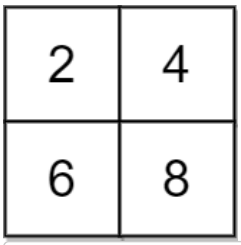
Difficulty:	Medium

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.

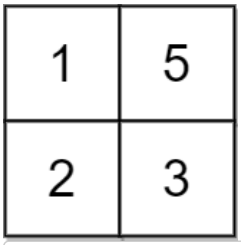
Return *the **minimum** number of operations to make the grid **uni-value***. If it is not possible, return `-1`.

Example 1:



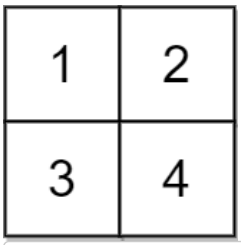

```
Input: grid = [[2,4],[6,8]], x = 2
Output: 4
Explanation: We can make every element equal to 4 by doing the following:
- Add x to 2 once.
- Subtract x from 6 once.
- Subtract x from 8 twice.
A total of 4 operations were used.
```

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 <= 10^5`
- `1 <= m * n <= 10^5`
- `1 <= x, grid[i][j] <= 10^4`

JavaScript

```javascript
const minOperations = (g, x) => {
    let n = g.length, m = g[0].length, tot = n * m, a = Array(tot).fill(0), res = 0;
    for (let i = 0; i < n; i++) {
        for (let j = 0; j < m; j++) {
            a[i * m + j] = g[i][j];
        }
    }
    a.sort((x, y) => x - y);
    for (let i = 0; i < tot; i++) {
        let idx = tot >> 1; // finally value a[idx]
        if ((a[i] - a[idx]) % x != 0) return -1;
        res += Math.abs(a[i] - a[idx]) / x;
        // pr(a[i], a[idx],  Math.abs(a[i] - a[idx]) / x)
    }
    return res;
};
```

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