You are given an n x n integer matrix. You can do the following operation **any** number of times:

* Choose any two **adjacent** elements of matrix and **multiply** each of them by -1.

Two elements are considered **adjacent** if and only if they share a **border**.

Your goal is to **maximize** the summation of the matrix's elements. Return *the****maximum****sum of the matrix's elements using the operation mentioned above.*

**Example 1:**

A picture containing text, clock

Description automatically generated

**Input:** matrix = [[1,-1],[-1,1]]

**Output:** 4

**Explanation:** We can follow the following steps to reach sum equals 4:

- Multiply the 2 elements in the first row by -1.

- Multiply the 2 elements in the first column by -1.

**Example 2:**

Table

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**Input:** matrix = [[1,2,3],[-1,-2,-3],[1,2,3]]

**Output:** 16

**Explanation:** We can follow the following step to reach sum equals 16:

- Multiply the 2 last elements in the second row by -1.

**Constraints:**

* n == matrix.length == matrix[i].length
* 2 <= n <= 250
* -105 <= matrix[i][j] <= 105