5604. Maximize Grid Happiness

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User Accepted:	0
User Tried:	3
Total Accepted:	0
Total Submissions:	3
Difficulty:	Hard

You are given four integers, `m`, `n`, `introvertsCount`, and `extrovertsCount`. You have an `m x n` grid, and there are two types of people: introverts and extroverts. There are `introvertsCount` introverts and `extrovertsCount` extroverts.

You should decide how many people you want to live in the grid and assign each of them one grid cell. Note that you **do not** have to have all the people living in the grid.

The **happiness** of each person is calculated as follows:

- Introverts **start** with `120` happiness and **lose** `30` happiness for each neighbor (introvert or extrovert).
- Extroverts **start** with `40` happiness and **gain** `20` happiness for each neighbor (introvert or extrovert).

Neighbors live in the directly adjacent cells north, east, south, and west of a person's cell.

The **grid happiness** is the **sum** of each person's happiness. Return *the* ***maximum possible grid happiness***.

Example 1:

120		60
		60

```
Input: m = 2, n = 3, introvertsCount = 1, extrovertsCount = 2
Output: 240
Explanation: Assume the grid is 1-indexed with coordinates (row, column).
We can put the introvert in cell (1,1) and put the extroverts in cells (1,3) and (2,3).
- Introvert at (1,1) happiness: 120 (starting happiness) - (0 * 30) (0 neighbors) = 120
- Extrovert at (1,3) happiness: 40 (starting happiness) + (1 * 20) (1 neighbor) = 60
- Extrovert at (2,3) happiness: 40 (starting happiness) + (1 * 20) (1 neighbor) = 60
The grid happiness is 120 + 60 + 60 = 240.
The above figure shows the grid in this example with each person's happiness. The introvert stays in the light green cell
```

Example 2:

```
Input: m = 3, n = 1, introvertsCount = 2, extrovertsCount = 1
Output: 260
Explanation: Place the two introverts in (1,1) and (3,1) and the extrovert at (2,1).
- Introvert at (1,1) happiness: 120 (starting happiness) - (1 * 30) (1 neighbor) = 90
- Extrovert at (2,1) happiness: 40 (starting happiness) + (2 * 20) (2 neighbors) = 80
- Introvert at (3,1) happiness: 120 (starting happiness) - (1 * 30) (1 neighbor) = 90
The grid happiness is 90 + 80 + 90 = 260.
```

Example 3:

```
Input: m = 2, n = 2, introvertsCount = 4, extrovertsCount = 0
Output: 240
```

Constraints:

- `1 <= m, n <= 5`
- `0 <= introvertsCount, extrovertsCount <= min(m * n, 6)`

JavaScript

```
/**
 * @param {number} m
 * @param {number} n
 * @param {number} introvertsCount
 * @param {number} extrovertsCount
 * @return {number}
 */
var getMaxGridHappiness = function(m, n, introvertsCount, extrovertsCount) {

};
```

□ **Custom Testcase** Use Example Testcases

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