

5518. Find Valid Matrix Given Row and Column Sums

[Submissions \(/contest/biweekly-contest-36/problems/find-valid-matrix-given-row-and-column-sums/submissions/\)](/contest/biweekly-contest-36/problems/find-valid-matrix-given-row-and-column-sums/submissions/)

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You are given two arrays `rowSum` and `colSum` of non-negative integers where `rowSum[i]` is the sum of the elements in the i^{th} row and `colSum[j]` is the sum of the elements of the j^{th} column of a 2D matrix. In other words, you do not know the elements of the matrix, but you do know the sums of each row and column.

Find any matrix of **non-negative** integers of size `rowSum.length` x `colSum.length` that satisfies the `rowSum` and `colSum` requirements.

Return a 2D array representing **any** matrix that fulfills the requirements. It's guaranteed that **at least one** matrix that fulfills the requirements exists.

User Accepted: 0

User Tried: 0

Total Accepted: 0

Total Submissions: 0

Difficulty: Medium

Example 1:

Input: `rowSum = [3,8]`, `colSum = [4,7]`

Output: `[[3,0],`
`[1,7]]`

Explanation:

0th row: $3 + 0 = 3 == \text{rowSum}[0]$

1st row: $1 + 7 = 8 == \text{rowSum}[1]$

0th column: $3 + 1 = 4 == \text{colSum}[0]$

1st column: $0 + 7 = 7 == \text{colSum}[1]$

The row and column sums match, and all matrix elements are non-negative.

Another possible matrix is: `[[1,2],`
`[3,5]]`

Example 2:

Input: `rowSum = [5,7,10]`, `colSum = [8,6,8]`

Output: `[[0,5,0],`
`[6,1,0],`
`[2,0,8]]`

Example 3:

Input: `rowSum = [14,9]`, `colSum = [6,9,8]`

Output: `[[0,9,5],`
`[6,0,3]]`

Example 4:

Input: rowSum = [1,0], colSum = [1]

Output: [[1],
 [0]]

Example 5:

Input: rowSum = [0], colSum = [0]

Output: [[0]]

Constraints:

- $1 \leq \text{rowSum.length}, \text{colSum.length} \leq 500$
- $0 \leq \text{rowSum}[i], \text{colSum}[i] \leq 10^8$
- $\text{sum}(\text{rows}) == \text{sum}(\text{columns})$

JavaScript



```
1 ▾ /**
2   * @param {number[]} rowSum
3   * @param {number[]} colSum
4   * @return {number[][]}
5   */
6 ▾ var restoreMatrix = function(rowSum, colSum) {
7
8   };
```

☐ Custom Testcase

Use Example Testcases

Run

Submit