

# Assignment Questions 4



## Question 1

Given three integer arrays arr1, arr2 and arr3 sorted in strictly increasing order, return a sorted array of **only** the integers that appeared in all three arrays.

**Example 1:**

Input: arr1 = [1,2,3,4,5], arr2 = [1,2,5,7,9], arr3 = [1,3,4,5,8]

Output: [1,5]

**Explanation:** Only 1 and 5 appeared in the three arrays.



## Question 2

Given two 0-indexed integer arrays nums1 and nums2, return a list answer of size 2 where:

- answer[0] is a list of all *distinct* integers in nums1 which are **not** present in nums2.
- answer[1] is a list of all *distinct* integers in nums2 which are **not** present in nums1.

**Note** that the integers in the lists may be returned in **any** order.

**Example 1:**

Input: nums1 = [1,2,3], nums2 = [2,4,6]

Output: [[1,3],[4,6]]

**Explanation:**

For nums1, nums1[1] = 2 is present at index 0 of nums2, whereas nums1[0] = 1 and nums1[2] = 3 are not present in nums2. Therefore, answer[0] = [1,3].

For nums2, nums2[0] = 2 is present at index 1 of nums1, whereas nums2[1] = 4 and nums2[2] = 6 are not present in nums2. Therefore, answer[1] = [4,6].



## Question 3

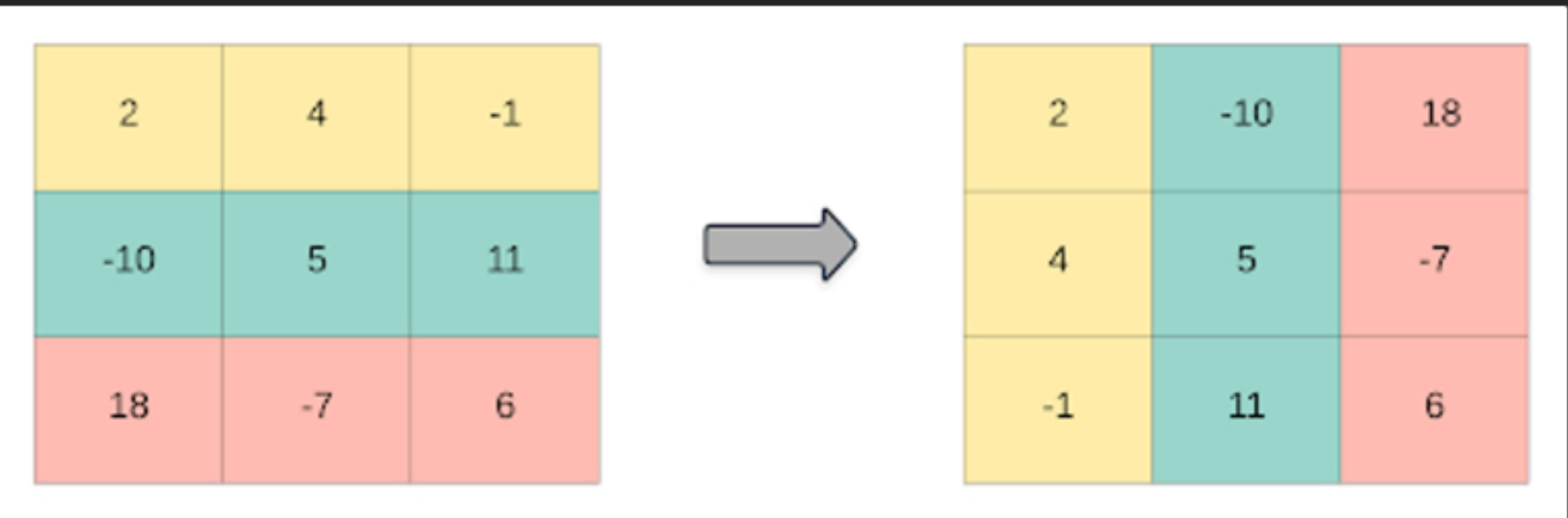
Given a 2D integer array matrix, return *the transpose* of matrix.

The **transpose** of a matrix is the matrix flipped over its main diagonal, switching the matrix's row and column indices.

**Example 1:**

Input: matrix = [[1,2,3],[4,5,6],[7,8,9]]

Output: [[1,4,7],[2,5,8],[3,6,9]]



## Question 4

Given an integer array nums of 2n integers, group these integers into n pairs (a1, b1), (a2, b2), ..., (an, bn) such that the sum of min(ai, bi) for all i is **maximized**. Return *the maximized sum*.

**Example 1:**

Input: nums = [1,4,3,2]

Output: 4

**Explanation:** All possible pairings (ignoring the ordering of elements) are:

- (1, 4), (2, 3) -> min(1, 4) + min(2, 3) = 1 + 2 = 3
- (1, 3), (2, 4) -> min(1, 3) + min(2, 4) = 1 + 2 = 3
- (1, 2), (3, 4) -> min(1, 2) + min(3, 4) = 1 + 3 = 4

So the maximum possible sum is 4.

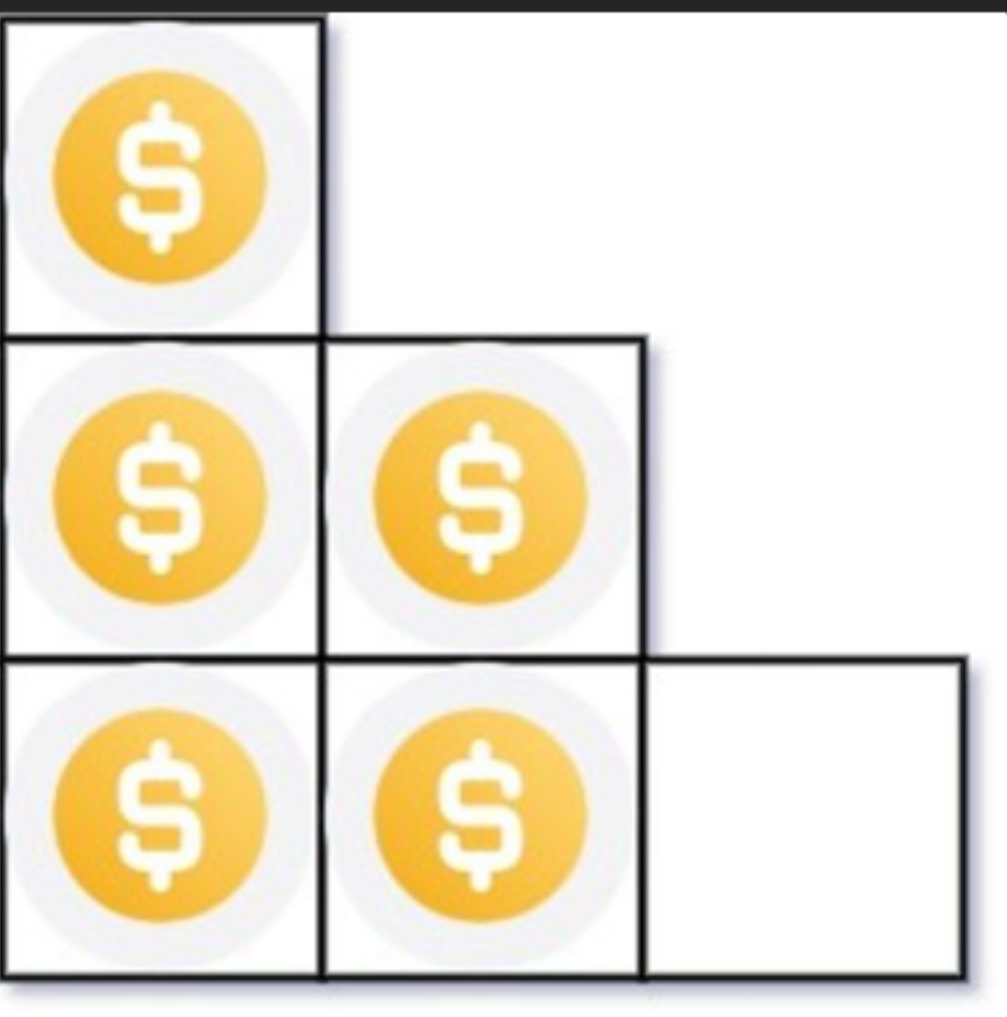


## Question 5

You have n coins and you want to build a staircase with these coins. The staircase consists of k rows where the ith row has exactly i coins. The last row of the staircase **may** be incomplete.

Given the integer n, return *the number of complete rows of the staircase you will build*.

**Example 1:**



Input: n = 5

Output: 2

**Explanation:** Because the 3rd row is incomplete, we return 2.



## Question 6

Given an integer array nums sorted in **non-decreasing** order, return *an array of the squares of each number sorted in non-decreasing order*.

**Example 1:**

Input: nums = [-4,-1,0,3,10]

Output: [0,1,9,16,100]

**Explanation:** After squaring, the array becomes [16,1,0,9,100]. After sorting, it becomes [0,1,9,16,100]

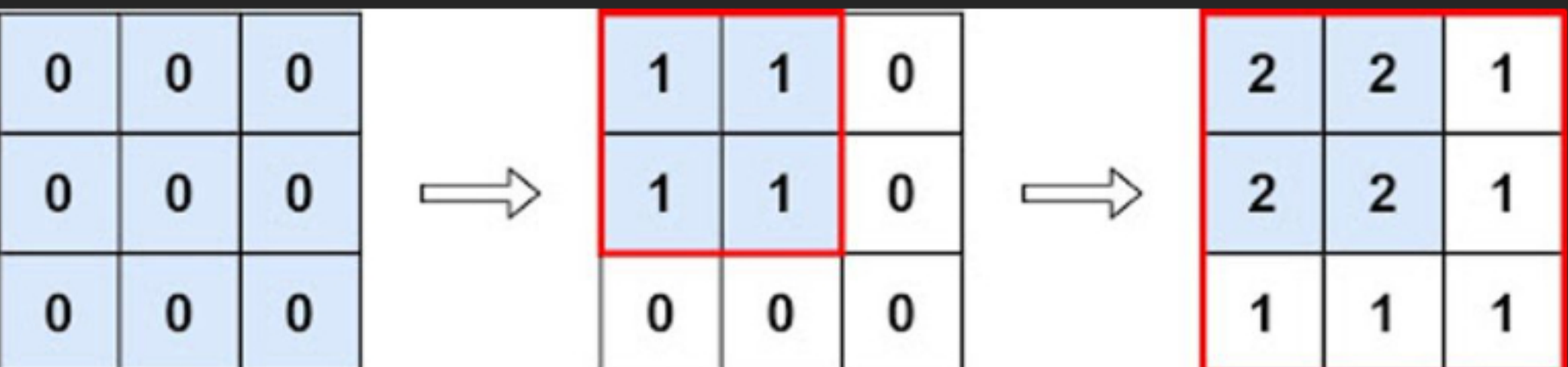


## Question 7

You are given an m x n matrix M initialized with all 0's and an array of operations ops, where ops[i] = [ai, bi] means M[x][y] should be incremented by one for all 0 <= x < ai and 0 <= y < bi.

Count and return *the number of maximum integers in the matrix after performing all the operations*

**Example 1:**



Input: m = 3, n = 3, ops = [[2,2],[3,3]]

Output: 4

**Explanation:** The maximum integer in M is 2, and there are four of it in M. So return 4.



## Question 8

Given the array nums consisting of 2n elements in the form [x1,x2,...,xn,y1,y2,...,yn].

Return *the array in the form* [x1,y1,x2,y2,...,xn,yn].

**Example 1:**

Input: nums = [2,5,1,3,4,7], n = 3

Output: [2,3,5,4,1,7]

**Explanation:** Since x1=2, x2=5, x3=1, y1=3, y2=4, y3=7 then the answer is [2,3,5,4,1,7].