Online on Array

Section: B1+B2 Time: 60 minutes

Problem 1:

You are given an array of integers where each element represents the **height of a building** (in number of floors). The **sunlight shines horizontally from the left side**.

A building gets sunlight **only on the number of floors that are above the height of the tallest building to its left**. The **first building always gets full sunlight**.

Your task is to calculate the **total number of sunlit floors** across all the buildings.

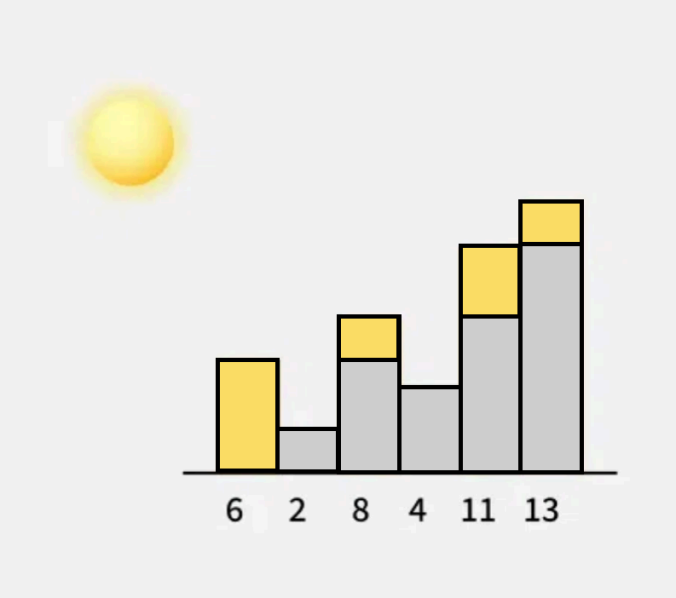
Input:

- First line contains a single integer n ($1 \le n \le 10^5$) — the number of buildings.
- Second line contains n space-separated integers h_1, h_2, . . . , h ($1 \le h_i \le 10^9$) — the heights of the buildings.

Output:

- Print a single integer — the total number of sunlit floors.

Examples:



Input:
6
6 2 8 4 11 13
Output: 13
Explanation: 6 + 0 + 2 + 0 + 3 + 2 = 13 (See above figure)

Input:
6
6 6 6 6 6 6
Output: 6

Problem 2:

Given an array of positive integers, your task is to find the **third largest distinct element** in the array.

If the third largest distinct element does not exist (i.e., fewer than three distinct elements), output -1.

Input:

- First line contains a single integer n ($1 \le n \le 10^5$) — the number of elements in the array.
- Second line contains n space-separated integers $a_1, a_2, \ldots, a$ ($1 \le a_i \le 10^9$) — the elements of the array.

Output:

- Print a single integer — the third largest distinct element, or -1 if it does not exist.

Examples:

Input:
7
4 1 7 3 9 9 4
Output: 4

Input:
6
1 2 2 1 2 1
Output: -1

Input:
6
6 6 6 6 6 6
Output: -1