1. Candy

There are n children standing in a line. Each child is assigned a rating value given in the integer array ratings.

You are giving candies to these children subjected to the following requirements:

Each child must have at least one candy.

Children with a higher rating get more candies than their neighbors.

Return the minimum number of candies you need to have to distribute the candies to the children.

Example 1: Input: ratings = [1,0,2] Output: 5

Explanation: You can allocate to the first, second and third child with 2, 1, 2 candies respectively.

Example 2: Input: ratings = [1,2,2] Output: 4

Explanation: You can allocate to the first, second and third child with 1, 2, 1 candies respectively.

The third child gets 1 candy because it satisfies the above two conditions.

2. Trapping Rain Water.

Given n non-negative integers representing an elevation map where the width of each bar is 1, compute how much water it can trap after raining.

Example 1:Input: height = [0,1,0,2,1,0,1,3,2,1,2,1] Output: 6

Explanation: The above elevation map (black section) is represented by array [0,1,0,2,1,0,1,3,2,1,2,1]. In this case, 6 units of rain water (blue section) are being trapped.

Example 2: Input: height = [4,2,0,3,2,5] Output: 9

3. Calculate Money in Leetcode Bank.

Hercy wants to save money for his first car. He puts money in the Leetcode bank every day.

He starts by putting in $1 on Monday, the first day. Every day from Tuesday to Sunday, he will put in $1 more than the day before. On every subsequent Monday, he will put in $1 more than the previous Monday.

Given n, return the total amount of money he will have in the Leetcode bank at the end of the nth day.

Example 1: Input: n = 4 Output: 10

Explanation: After the 4th day, the total is 1 + 2 + 3 + 4 = 10.

Example 2: Input: n = 10 Output: 37

Explanation: After the 10th day, the total is (1 + 2 + 3 + 4 + 5 + 6 + 7) + (2 + 3 + 4) = 37. Notice that on the 2nd Monday, Hercy only puts in $2.

Example 3: Input: n = 20 Output: 96

Explanation: After the 20th day, the total is (1 + 2 + 3 + 4 + 5 + 6 + 7) + (2 + 3 + 4 + 5 + 6 + 7 + 8) + (3 + 4 + 5 + 6 + 7 + 8) = 96.