Neev interview questions

Instructions:

- There are 2 questions. You get 4 hours for writing code.
- Check in your code to a **github repository** and share the link.
- We will use the **check-in time** to know how long you took.
- The code should run on a **normal linux system** with no special library requirements
- Include a README.md file in your github repository to describe the usage of the code, i.e. how to invoke it with test data. No special formatting requirement on test data is allowed beyond what is given in the sample input.

Problem 1

n bubbles are arranged in a row, and each bubble contains a dollar of certain denomination inside it. When a user bursts a bubble at position j the user is rewarded with denom[j-1] * denom[j] * denom[j+1] dollars, where denom[j] represents the denomination value of the dollar inside j^{th} bubble. On bursting the bubble at position j, bubbles at position j-1 and j+1 become neighbours. The task is to burst all the bubbles. If a bubble that is burst has no neighbors left, then the denomination of the dollar in that bubble is rewarded. If there is only one neighbour left then the product of the denominations of dollars in the two bubbles is rewarded.

Write a program to compute the maximum reward one can achieve by bursting all the bubbles.

Input format:

A text file with single line containing comma separated values representing the dollars in the bubbles

Output format:

A single number to standard output.

Contraints:

n is in range [0, 500]
Each denomination is in the range [0, 100]

Examples:

1. Input 4, 2, 6, 8
   Output 280

2. Input 44, 53, 36, 42, 40, 48, 54, 50, 45, 54, 45, 38, 35, 45, 45, 54, 38
   Output 1695336

Problem 2

You are given N integers. You have to select two integers from these N such that there is another integer which is equal to the sum of two integers which you have selected.

You have to tell the number of ways in which you can select such two integers.

Note: Two ways are said to be different if index of two integer selected does not follow (i,j) = (j,i) relation

Input:
First line : N
Second line: N space separated distinct integers.

Output:
Print the number of ways in which integers can be selected.

Constraints:
$1 \leq N \leq 10^4$

Sample Input:
5
1 2 3 4 5

Sample Output:
4
