Assume all the integer variables to be long long int.

Problem 1: 6 marks

You are given an array of 2n+1 numbers. All the numbers are present exactly twice in the array except for one number which is present only once. Find that lonely number.

Input/Output Format

- INPUT: First line of input contains one number, n. Second line of input contains 2n + 1 numbers which are elements of the array.
- OUTPUT: *M*, The number which is present only once in the array.

Sample Test Case
Input:
3
1 2 3 2 4 4 1
Output:
3

Problem 2: 6 marks

You are given an array of n numbers. Rotate the array towards left by 1 index.

Input/Output Format

- INPUT: First line contains a single integer n, the size of the array. Second line contains n integers, elements of the array.
- OUTPUT: Output n integers, elements of the array after rotating.

Sample Test Case
Input:
5
1 2 3 4 5
Output:
2 3 4 5 1

Problem 3: 6 marks

Given a string S, determine if it is a palindrome. A palindrome is a string that reads the same forward and backward. Return 1 if string is palindrome and 0 otherwise.

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Input/Output Format

- INPUT: String with lowercase english alphabets.
- OUTPUT: 1 if its a palindrome , 0 otherwise

Sample Test Cases
Input: level
Output: 1

Input: zero
Output: 0

Problem 4: 6 marks

Given an array A of size N. Determine the sum of the largest and smallest elements in array A.

Input/Output Format

- INPUT: First line contains a single integer n, the size of the array. Second line contains n integers, elements of the array.
- OUTPUT: A single number representing the sum of largest and smallest number of given array.

Sample Test Cases

Input:
5
3 1 4 6 2
Output:
7

Input:
5
10 -3 8 -5 7
Output:
5

Problem 5: 6 marks

Given an integer array nums, return an array answer such that answer[i] is equal to the product of all the elements of nums except nums[i]

- INPUT: First line contains a single integer n, the size of the array. Second line contains n integers, elements of the array.
- OUTPUT: An array of n numbers fulfilling the given criterion.

Sample Test Case

Input :
4
1 2 3 4
Output:
24 12 8 6

Input :
5
-1 1 0 -3 3
Output :
0 0 9 0 0

All the Best!