Q.1) Find largest sum contigeous sub array

Given an array Arr[] of N integers. Find the contiguous sub-array(containing at least one number) which has the maximum sum and return its sum.

Example 1:

Input:

N = 5

Arr[] = {1,2,3,-2,5}

Output:

9

Explanation:

Max subarray sum is 9

of elements (1, 2, 3, -2, 5) which

is a contiguous subarray.

Example 2:

Input:

N = 4

Arr[] = {-1,-2,-3,-4}

Output:

-1

Explanation:

Max subarray sum is -1

of element (-1)

Q.2) Find Maximum product contigeous sub array

Given an array Arr[] that contains N integers (may be positive, negative or zero). Find the product of the maximum product subarray.

Example 1:

Input:

N = 5

Arr[] = {6, -3, -10, 0, 2}

Output: 180

Explanation: Subarray with maximum product

is [6, -3, -10] which gives product as 180.

Example 2:

Input:

N = 6

Arr[] = {2, 3, 4, 5, -1, 0}

Output: 120

Explanation: Subarray with maximum product

is [2, 3, 4, 5] which gives product as 120.

Q.3 Longest consecutive sequence.

Given an array of positive integers. Find the length of the longest sub-sequence such that elements in the subsequence are consecutive integers, the consecutive numbers can be in any order.

Example 1:

Input:

N = 7

a[] = {2,6,1,9,4,5,3}

Output:

6

Explanation:

The consecutive numbers here

are 1, 2, 3, 4, 5, 6. These 6

numbers form the longest consecutive

subsquence.

Example 2:

Input:

N = 7

a[] = {1,9,3,10,4,20,2}

Output:

4

Explanation:

1, 2, 3, 4 is the longest

consecutive subsequence.

Q.4 Max Sum in configuration

Given an array(0-based indexing), you have to find the max sum of i\*A[i] where A[i] is the element at index i in the array.The only operation allowed is to rotate(clock-wise or counter clock-wise) the array any number of times.

Example 1:

Input:

N = 4

A[] = {8,3,1,2}

Output: 29

Explanation: Above the configuration

possible by rotating elements are

3 1 2 8 here sum is 3\*0+1\*1+2\*2+8\*3 = 29

1 2 8 3 here sum is 1\*0+2\*1+8\*2+3\*3 = 27

2 8 3 1 here sum is 2\*0+8\*1+3\*2+1\*3 = 17

8 3 1 2 here sum is 8\*0+3\*1+1\*2+2\*3 = 11

Here the max sum is 29