

# The Maximum Subarray

We define *subsequence* as any subset of an array. We define a *subarray* as a *contiguous subsequence* in an array.

Given an array, find the maximum possible sum among:

1. all nonempty subarrays.
2. all nonempty subsequences.

Print the two values as space-separated integers on one line.

**Note** that empty subarrays/subsequences should not be considered.

## Example

$arr = [-1, 2, 3, -4, 5, 10]$

The maximum subarray sum is comprised of elements at indices  $[1 - 5]$ . Their sum is  $2 + 3 + -4 + 5 + 10 = 16$ .

The maximum subsequence sum is comprised of elements at indices  $[1, 2, 4, 5]$  and their sum is  $2 + 3 + 5 + 10 = 20$ .

## Function Description

Complete the *maxSubarray* function in the editor below.

*maxSubarray* has the following parameter(s):

- *int arr[n]*: an array of integers

## Returns

- *int[2]*: the maximum subarray and subsequence sums

## Input Format

The first line of input contains a single integer *t*, the number of test cases.

The first line of each test case contains a single integer *n*.

The second line contains *n* space-separated integers *arr[i]* where  $0 \leq i < n$ .

## Constraints

- $1 \leq t \leq 10$
- $1 \leq n \leq 10^5$
- $-10^4 \leq arr[i] \leq 10^4$

*The subarray and subsequences you consider should have at least one element.*

## Sample Input

```
2
4
1 2 3 4
6
2 -1 2 3 4 -5
```

## Sample Output

```
10 10
10 11
```

## Explanation

In the first case:

The max sum for both contiguous and non-contiguous elements is the sum of ALL the elements (as they are all positive).

In the second case:

[2 -1 2 3 4] --> This forms the contiguous sub-array with the maximum sum.

For the max sum of a not-necessarily-contiguous group of elements, simply add all the positive elements.