Beautiful Cuts

Assignment 2
Computer Programming
Due date: 12 October, 2018

Problem Statement: You are given an array of integers.You can perform several cuts on the array. In **one cut** , you can cut/partition your array into **two non-empty continuous parts**, keep one part and discard the rest. For example the array 1 4 5 6 7 can be cut into two parts: 1 4 5 and 6 7. Note that the parts must be non-empty. Lets discard the part 6 7. The new array will now become 1 4 5 and any further operations will be carried on this array.

The beauty value of a part is defined as the sum of all integers in it. You are required to find the maximum beauty value you can obtain after making **at MOST K** cuts in the array.

Input
First line: Number of testcases T.
For every testcase , N K - the number of elements of the array and the maximum number of cuts.
Second line: N elements of the array A. .

Output
For every testcase output maximum beauty value of array using at most K cuts.

Constraints
$1 \leq T \leq 1000$
$1 \leq N \leq 10^4$
$0 \leq K \leq N - 1$
$-10^9 \leq A[i] \leq 10^9$

Time Limit: 1 sec
Memory Limit: 256 MB

Sample Test Case

Input	Output
1 5 1 -1 2 -2 3 4	7

Explanation
For the first test case: We make a cut after -2 , getting two arrays (-1 , 2 , -2) and (3 , 4). Discard the first one. And the value of 3+4 =7 gives maximum beauty.