

3. Given the parenthesis representation of a binary tree, select nodes of the tree such that the selected group of nodes gives the maximum sum out of any group of nodes of the tree. Also if a particular node is selected, then its parent or child node cannot be part of the group.

Sample Input 1:

(1(2(4())(5())(3())))

Sample Output 1:

12

Sample Input 2:

(2(4(9()(3())))(6(10())(1())))

Sample Output 2:

22

Sample Input 3:

(3(6(10(2())(5()(4())))(9(1()(8()))(7(15())())))

Sample Output 3:

47