

# Data Structures Quiz 5 (20 minutes)

Name: \_\_\_\_\_ NetID: \_\_\_\_\_

**By participating in this quiz, you agree to adhere to the honor code.**

Given the rules of a simple Binary Search Tree (BST), perform the following operations:

1. Insert the following sequence of numbers into the BST: 45, 23, 34, 87, 85, 43, 12, 4, 100, 101, 86. After each insertion, redraw the BST to reflect the current state. (4 points)
2. Remove the numbers 23 and 87 from the BST. After each removal, redraw the BST to show the updated structure. (2 points)
3. Demonstrate that the tree, after these operations, is balanced. (2 points)
4. Finally, insert the number 44 into the BST following the AVL tree insertion rules, and redraw the tree to show the final state. (2 points)