Binary Tree, Binary search Tree

1. Write a program to perform the following experiment: Generate 100 random numbers. As each number is generated, insert it into an initially empty binary search tree. When all 100 numbers have been inserted, print the level of the leaf node with largest level and the level of leaf node with smallest level. Repeat this process 50 times, Print out a table with a count of how many of the 50 runs resulted in a difference between the maximum and minimum leaf level of 0, 1, 2, 3, and so on**.**

2. Write a program that counts the number of leaves of a binary tree. Use the binary search trees generated in Problem 1 to test your program.

3. Write a program that find the height of a binary tree.

4. Write a function for Inorder, Preorder and Postorder traversal of tree

5. Let T be a tree with n nodes. The lowest common ancestor (LCA) between two nodes v and w as the lowest node in T that has both v and w as descendants (where we allow a node to be a descendant of itself). Given two nodes v and w, describe an efficient algorithm for finding the LCA of v and w. What is the running time of your method? Describe the complexity in comments in program. Use trees in problem 1 to test your algorithm.