Analysis of Algorithms: Assignment 6

Due date: March 1 (Thursday)

Problem 1
Draw four binary search trees, with heights two, three, four, and five. Each tree should have six nodes, and the keys of these nodes should be 1, 2, 3, 4, 5, and 6.

Problem 2
Give a nonrecursive version of INORDER-TREE-WALK.

Problem 3 (bonus)
This problem is optional, and it does not affect your grade for the homework; however, if you solve it, then you will get one bonus point toward your **final grade** *for the course. You cannot submit this bonus problem after the deadline.*

Give a linear-time algorithm that converts a *sorted* array $A[1..n]$ into a *balanced* binary search tree; that is, the algorithm should input $A[1..n]$ and construct an n-node balanced tree that includes all elements of the array.