CMCS 341

Homework #3

Assigned Wed. Sept 26
Due (hard copy in class) Wed Oct 03 / Thur Oct 04

1. (6 points) Prove that there are n – 1 edges in any non-empty tree with n nodes.

2. (6 points) Prove that if a node in a BST has two children, its successor has at most one child.

3. (4 points) Draw the binary search tree that results from inserting the values 3, 1, 4, 6, 9, 2, 5, 7 (in the order listed) into an initially empty binary search tree.

4. (2 points) Draw the binary search tree that results from deleting the root from the tree in question #3. If a choice is required, choose the successor.

5. (7 points) Write a recursive Java method that returns the height of a binary tree. The method signature is given below.

```
static <AnyType>
int height( BinaryNode<AnyType> root)
```