Module 3 Reinforcement Exercises

3.6.4)

Assuming the binary tree is constructed in a balanced manner with 8 at the root (following the same approach as a binary search), 12 would be encountered first and we'd search left and find 10 and then search right and find 11. The 9 encountered should be an external node which no matter what way we traverse the tree we will never encounter in the 9,12,10,11 order.

4.7.12)

Since the root has two children you have two options for replacing the node. You can either traverse the left subtree and find the highest value node to replace the root and then rebalance if necessary or you can traverse the right subtree and find the lowest value node to replace root and rebalance if necessary. If you use the first option the highest value node in the left subtree would be 54 which happens to be a leaf node and won't require any additional work to delete. In addition the tree will remain balanced on replacement. Poorly drawn final tree below.