Practice 10

1. Mark the following statements as true or false.

   a) A binary tree must be nonempty

   b) The level of the root node is 0.

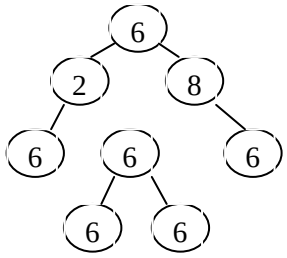
   c) If a tree has only one node, the height of this tree is 0 because the number of levels is 0.

   d) The inorder traversal of a binary tree always outputs the data in ascending order.

2. The keys 24, 39, 31, 46, 48, 34, 19, 5 and 29 are inserted (in the order given) into an initially empty binary tree. Show the tree after each insertion.

3. What is the traversal sequence of the following tree?

   Inorder? Preorder? Postorder?



4. Draw the expression trees for the following algebraic expressions. Apply postorder traversal on the tree to obtain the equivalent postfix notations of the expressions
   a) a*b - c/d +e
   b) (a-b)*c/d – (e+f)/d
   c) (5-3)*2+(2-3)*4-7

5. Remove an element from the previous string set. Check that the set elements are still in their ascending ordering

   Using the "copy" algorithm and the ostream_iterator object from the STL, print out the set of colours after removing a few elements from the set. Confirm that the remaining elements remained sorted.