

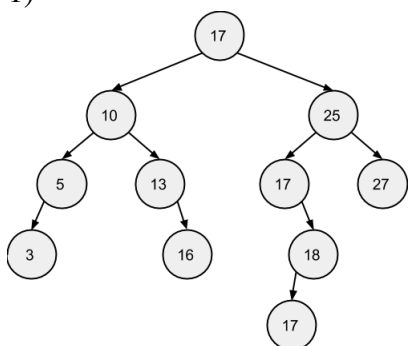


Homework Assignment 5

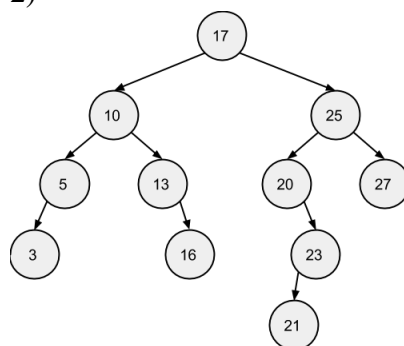
Problem 1

For each of the following trees state what kind of a tree it is (check all that apply).

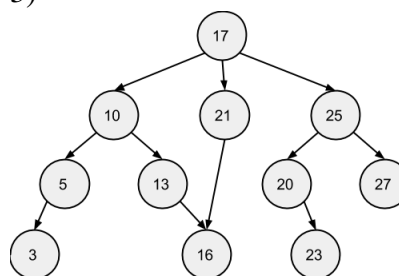
1)



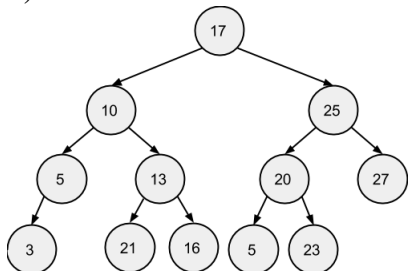
2)



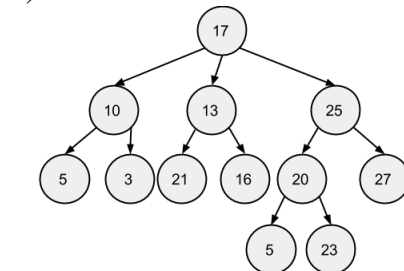
3)



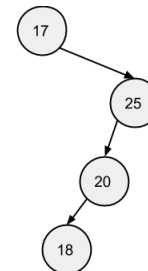
4)



5)



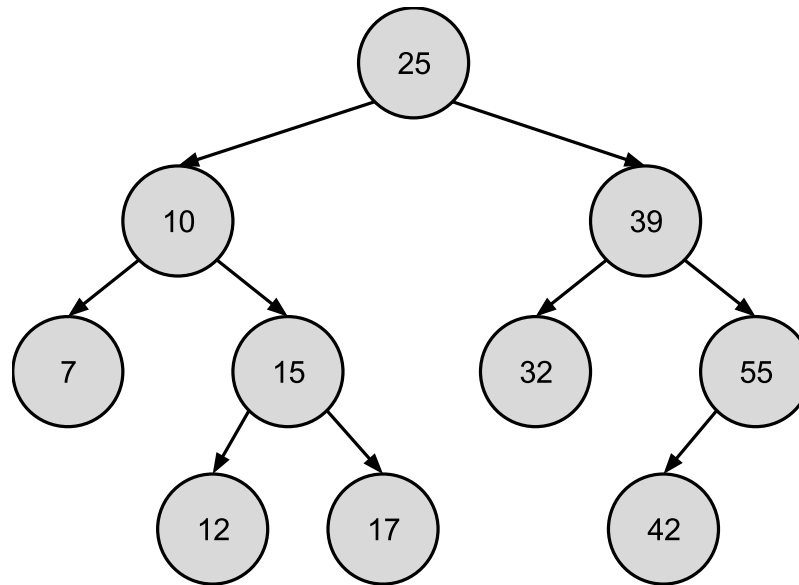
6)



Tree #	Not a tree	General tree	Binary tree	Binary search tree
1				
2				
3				
4				
5				
6				

Problem 2

Starting with the binary search tree shown below, show what the tree will look like after each of the following operations. Assume that remove method uses the predecessor when applicable. For each step modify the tree that results from the previous step (NOT the original tree).



- A. `insert(21)`
- B. `insert(8)`
- C. `insert(30)`
- D. `insert(35)`
- E. `remove(17)`
- F. `remove(7)`
- G. `remove(39)`
- H. `insert(60)`
- I. `remove(25)`

Problem 3

Specify inorder, preorder and postorder traversals of the original tree in Problem 1.

Problem 4

Implement an inorder traversal of a binary tree (this method should work for binary search tree as well) that uses iterative approach. Your method should be a method of a binary tree class. You can assume that there is a private data field called `root` that points to the root of the tree. You may specify this method using pseudocode, but make sure you are specific. You can assume that on visiting the node you print its content to the standard output.

What changes would you have to make to convert this into a postorder traversal?