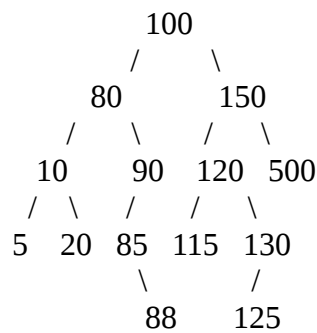


Assignment 5 - Due: November 12 at 6:45 PM  
**Please hand it in to me before class as a hard copy.**  
You can e-mail me a soft copy if you miss class.  
***Handwritten submissions are absolutely fine.***

Full Name: \_\_\_\_\_

1- Draw the BST that results from inserting the following keys one by one in the given order.  
50    30    70    5    15    55    60    20    80    1    75    40

**All the following questions refer to the BST below**



2- Give the nodes in the search path when we search for the keys below:

a) key 85: \_\_\_\_\_

b) key 127: \_\_\_\_\_

3- Write the keys in the order they are traversed when we perform the following traversals:

a) Pre-Order: \_\_\_\_\_

b) In-Order: \_\_\_\_\_

c) Post-Order: \_\_\_\_\_

d) Level-Order: \_\_\_\_\_

4- We are implementing an iterator that traverses the tree in the following order:

a) Pre-Order. Give the state of the stack right after key 115 has been popped.

Bottom of stack \_\_\_\_\_ < -- > Top of stack

b) In-Order. Give the state of the stack right after key 88 has been popped.

Bottom of stack \_\_\_\_\_ < -- > Top of stack

c) Level-Order. Give the state of the queue right after key 5 has been dequeued.

Front of queue <-- \_\_\_\_\_ <-- Back of queue

5- Show the tree when we delete key 100 and we choose the “replacement” key from

a) The left subtree

b) The right subtree