Binary Trees: Consider the following binary tree, which we will also be working with during Lab 7:

1. What special property do the nodes in this tree have?

2. Write out the in order traversal of this tree.

3. Write out the post order traversal of this tree.

4. Write out the pre order traversal of this tree.

5. Say your query \( q = 5 \). This is not currently in our binary tree. Describe a step-by-step process for inserting 5 into this tree. What is the resulting picture? What would happen if we wanted to insert the numbers: 28, 15, 72, 51, and 100?