CS2501 Spring 2017 Trees and Heaps name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Due: Tuesday 4/4

1.

You have an initially empty AVL tree with integers for node values, and then insert

1, 5, 6, 3, 2, 4, 8 in that order. Show the AVL tree after each insertion, showing any rotations performed along the way.

2.

If you walk binary tree **t1** inorder, printing out the node values, which are each a single character, as you go, the output is:

ABCDEDSWQ

You then walk binary tree **t2** inorder printing out the node values, which are also a single character each. You get:

ABCDEDSWQ

Are the two tree necessarily identical? Why or why not?

3.

Start with an empty binary min heap. Insert: 57, 19, 5, 51, 21, 53, 2 in that order. Show heap after each insertion.

4.

Show the preorder, inorder, and postorder tree walks for a recursive routine which prints out the value of each node:

