

3) (10 pts) ALG (AVL Trees)

(a) (8 pts) An AVL tree stores the grades of the class (in between 1 and 100 inclusive). Create an AVL tree by inserting the following values into an initially empty AVL Tree in the order given: 98, 87, 92, 81, 75, 68, and 100. Show the state of the tree after each insertion and draw a box around each of these results.

(b) (2 pts) What is the fewest and most number of comparisons for looking for a valid grade that is not within this tree?

Fewest number of comparisons = _____

Most number of comparisons = _____

Computer Science Foundation Exam

August 31, 2019

Section II A

ALGORITHMS AND ANALYSIS TOOLS

**NO books, notes, or calculators may be used,
and you must work entirely on your own.**

Name: _____

UCFID: _____

NID: _____

Question #	Max Pts	Category	Score
1	10	ANL	
2	5	ANL	
3	10	ANL	
TOTAL	25		

You must do all 3 problems in this section of the exam.

Problems will be graded based on the completeness of the solution steps and not graded based on the answer alone. Credit cannot be given unless all work is shown and is readable. Be complete, yet concise, and above all be neat. For each coding question, assume that all of the necessary includes (stdlib.h, stdio.h, math.h, string.h) for that particular question have been made.