3) (10 pts) ALG (AVL Trees)

There is a unique AVL tree of height 4 with 12 nodes storing the integers 1 through 12, inclusive, such that for every non-leaf node, the left subtree is strictly shorter than the right subtree.

(a) (7 pts) Draw this AVL Tree.

(b) (3 pts) Explain how you constructed the tree based on the prompt.

Computer Science Foundation Exam

August 24, 2024

Section C

ALGORITHM ANALYSIS

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

PLEASE USE CAPITAL LETTERS IN WRITING YOUR NAME

Last Name: _____

First Name: _____

UCFID: _____

Question #	Max Pts	Category	Score
1	10	ANL	
2	10	ANL	
3	5	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, stdio, math, string) for that particular question have been made.