

**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 = \_\_\_\_\_