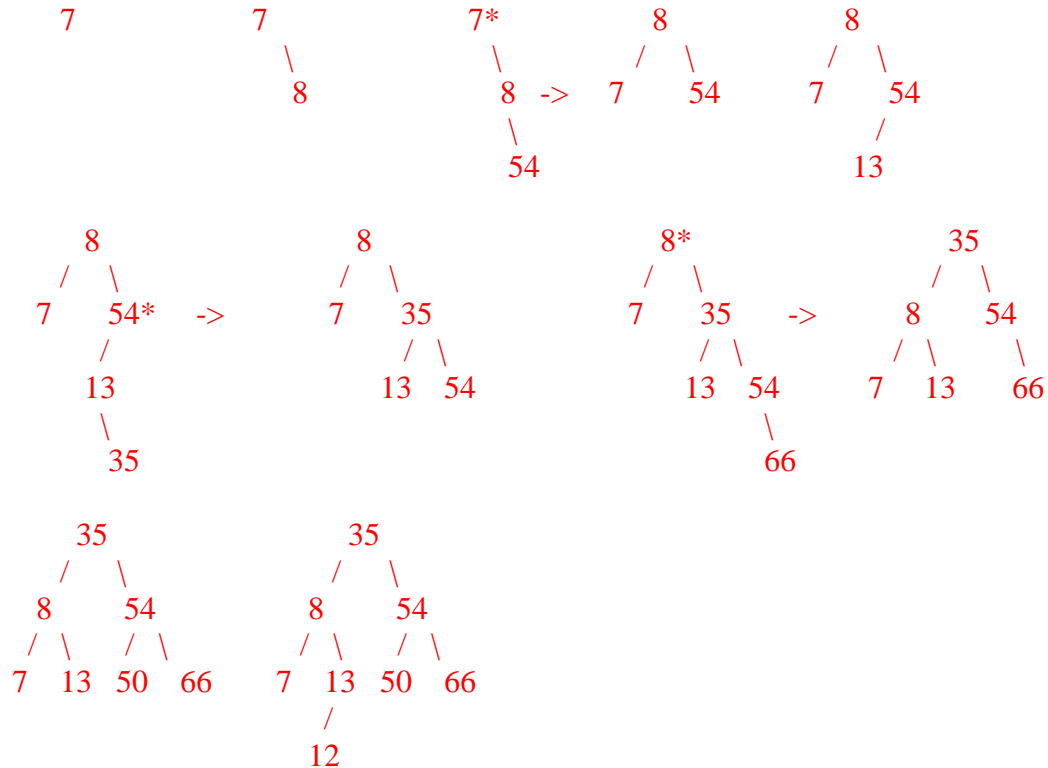


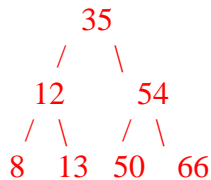
3) (10 pts) DSN (AVL Trees)

(a) (8 pts) Create an AVL tree by inserting the following values into an initially empty AVL Tree in the order given: 7, 8, 54, 13, 35, 66, 50, and 12. Show the state of the tree after each insertion.



Grading: Students should show each insertion step for **1 pt each**. Imbalances should be detected and corrected for after inserting 54, 35, and 66; detected at 7, 54, and 8 respectively.

(b) (2 pts) Draw the state of the tree after the deletion of the node containing the value 7.



Deleting 7 creates an imbalance at 8 that must be corrected.

Grading: **1 pt** for a valid BST without 7, **1 pt** for it being the correct BST without 7 (0 pts if either 7 is still in it or it's not a valid BST.)