Rotations

Draw the trees that result from performing the following rotations (these rotations do not necessarily balance the tree):

1. Rotate left at the root.

2. Rotate right at the root.

3. Rotate left at the node containing a 1.

4. Rotate left at the root.
AVL Balanced

5 Circle all of the following which are valid AVL trees that do NOT need rebalancing?

![AVL Trees](image)

Insertion

On a separate piece of paper, draw the AVL trees that result from adding EACH of the following keys, showing each step. (3 pts each)

**EXAMPLE**: 1, 2, 3

![AVL Trees Example](image)

6 2, 3, 9, -4, -1, 16, 1, 4, 0

7 6, 9, 14, 0, 2, 1

8 4, 7, 6, 3, 5, 2