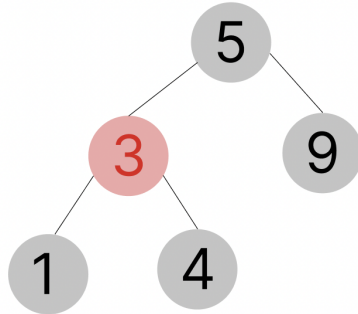


# LLRB Insertions

[Here is a video walkthrough of the solutions.](#)

Given the LLRB below, perform the following insertions and draw the final state of the LLRB. In addition, for each insertion, write the fixups needed in the correct order. A fixup can either be a rotate right, a rotate left, or a color flip. If no fixups are needed, write "Nothing".



1. Insert 7

2. Insert 6

3. Insert 2

4. Insert 8

5. Insert 8.5

Final state:

**Solution:** For a visualization of the process, see: <https://tinyurl.com/llrb-insertions>

1. Insert 7

- Nothing

2. Insert 6

- rotateRight(9)
- colorFlip(7)
- colorFlip(5)

3. Insert 2

- rotateLeft(1)

4. Insert 8

- Nothing

5. Insert 8.5

- rotateLeft(8)
- rotateRight(9)
- colorFlip(8.5)
- rotateLeft(7)

Final state:

