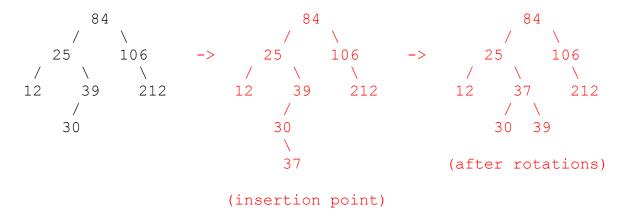
- 3) (10 pts) ALG (AVL Trees)
- a) Show the result of inserting 37 into the following AVL tree:



## **Grading (6 points for part a):**

6/6 for correct answer.

3/6 for something reasonably close. (Use your judgment. However, 84 must be the root in order for them to earn these points.)

0/6 otherwise.

b) Using big-oh notation, give the **best-case** runtime for inserting a new element into an AVL tree with *n* nodes:

**Solution:** O(log n) **Grading:** 1 point if correct, 0 otherwise

c) Using big-oh notation, give the **worst-case** runtime for inserting a new element into an AVL tree with *n* nodes:

**Solution:** O(log n) **Grading:** 1 point if correct, 0 otherwise

d) Using big-oh notation, give the <u>best-case</u> runtime for inserting a new element into a binary search tree with n nodes:

**Solution:** O(1) **Grading:** 1 point if correct, 0 otherwise

e) Using big-oh notation, give the **worst-case** runtime for inserting a new element into a binary search tree with n nodes:

**Solution:** O(n) **Grading:** 1 point if correct, 0 otherwise