

AVL Rotations

Add the following set of numbers to an AVL tree. For each set, start with an empty tree. Draw the tree at each step and show the type of rotations required to re-balance the tree. Solutions are on the next page.

Set 1: (1, 2, 3, 4, 5)

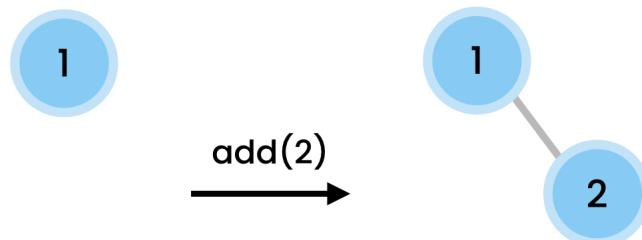
Set 2: (5, 10, 3, 12, 15, 14)

Set 3: (12, 3, 9, 4, 6, 2)

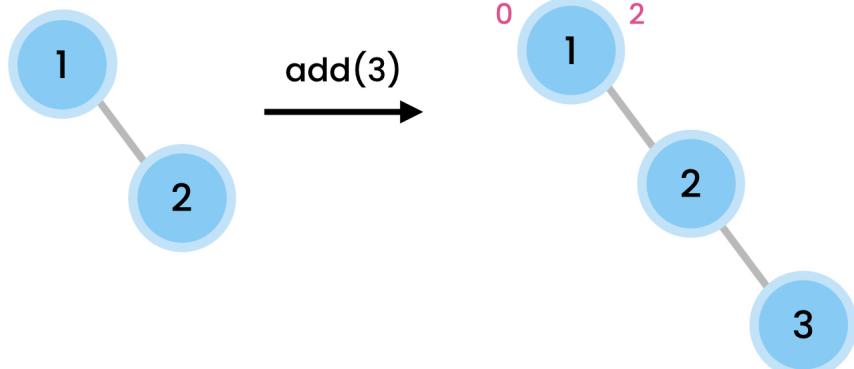
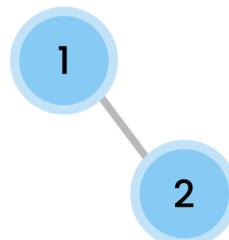
You can use the following tool to visualize an AVL tree:

<https://www.cs.usfca.edu/~galles/visualization/AVLtree.html>

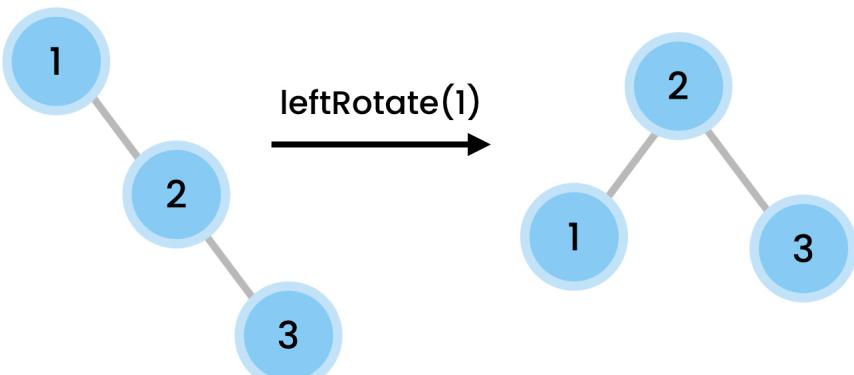
Solution to Set 1 (1, 2, 3, 4, 5)



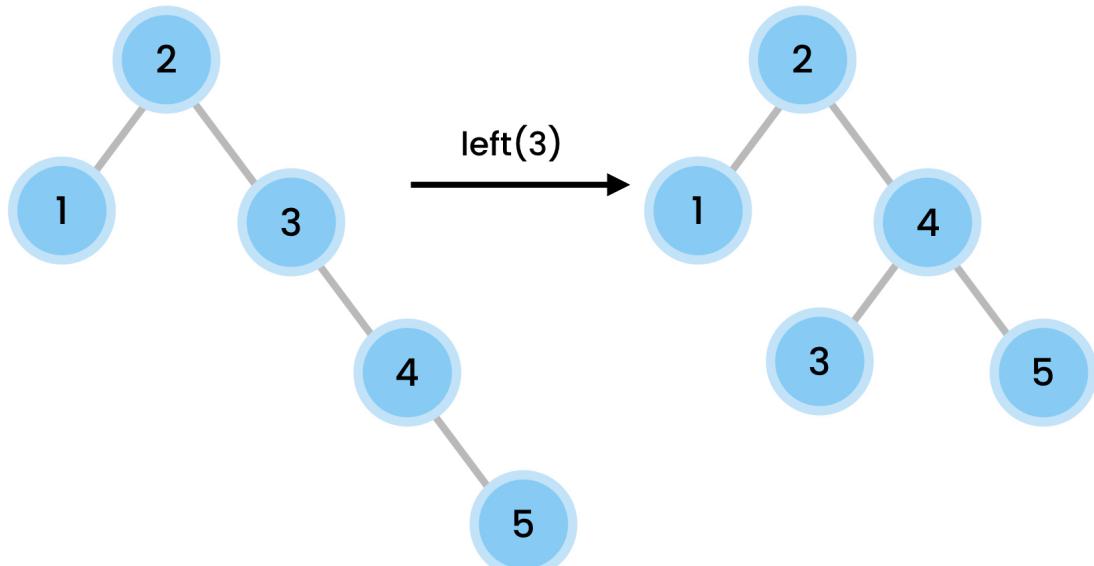
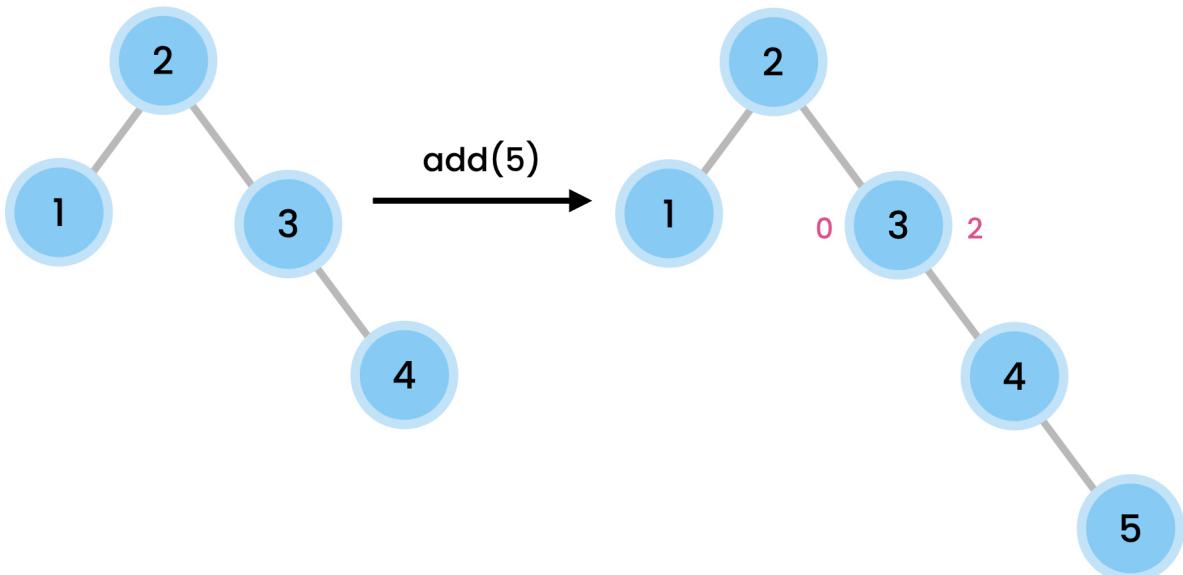
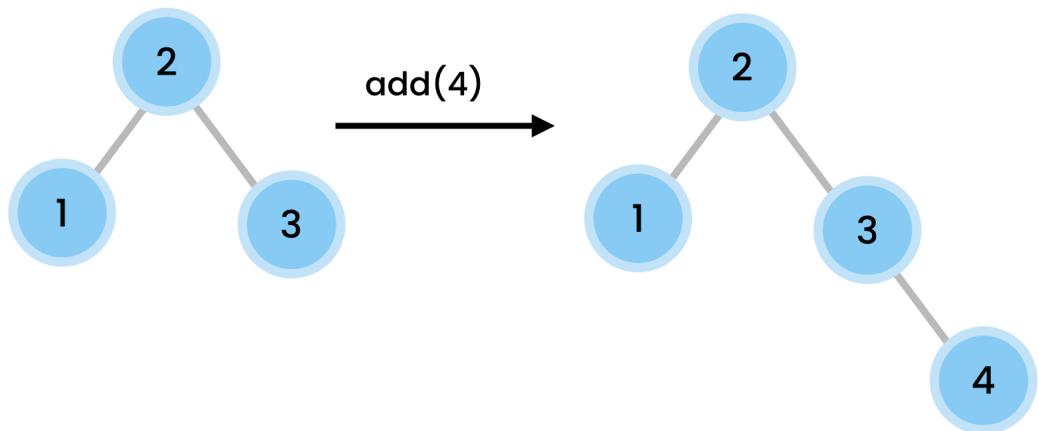
$\text{add}(2)$



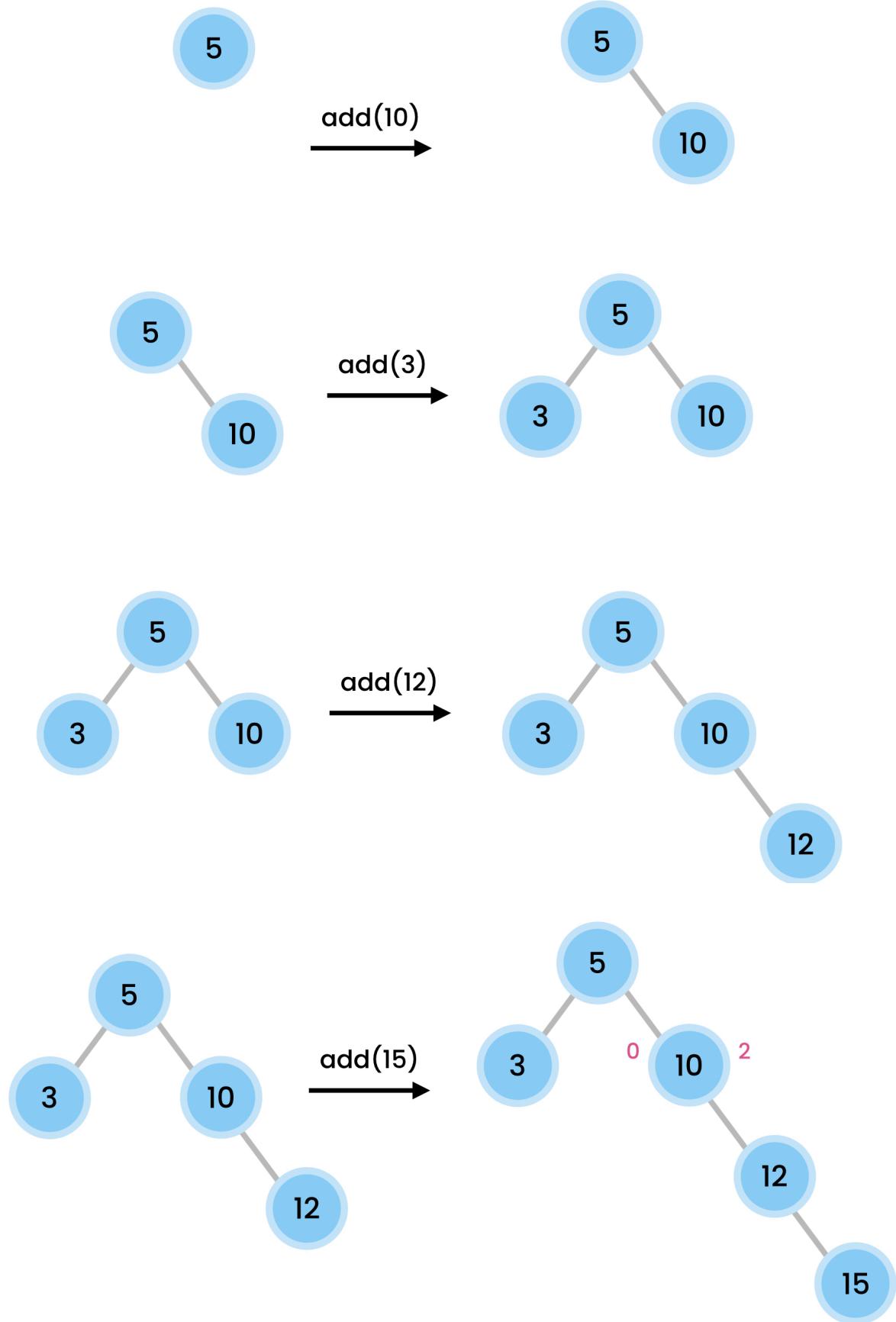
$\text{add}(3)$

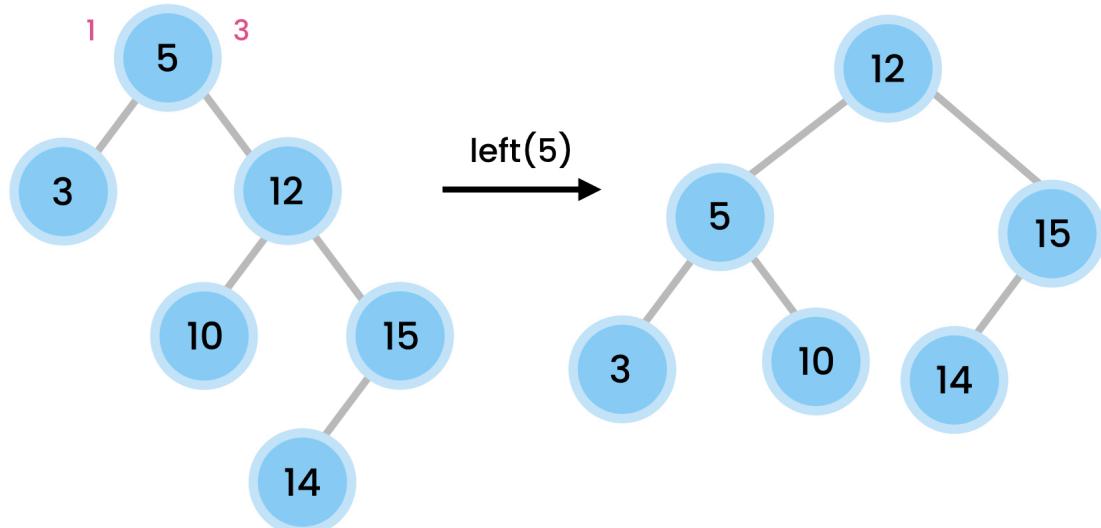
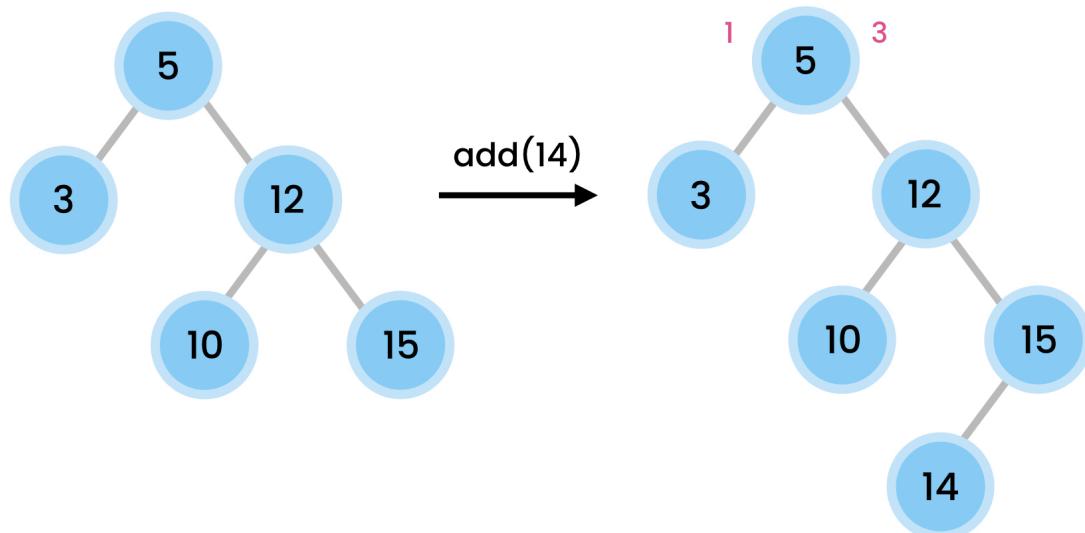
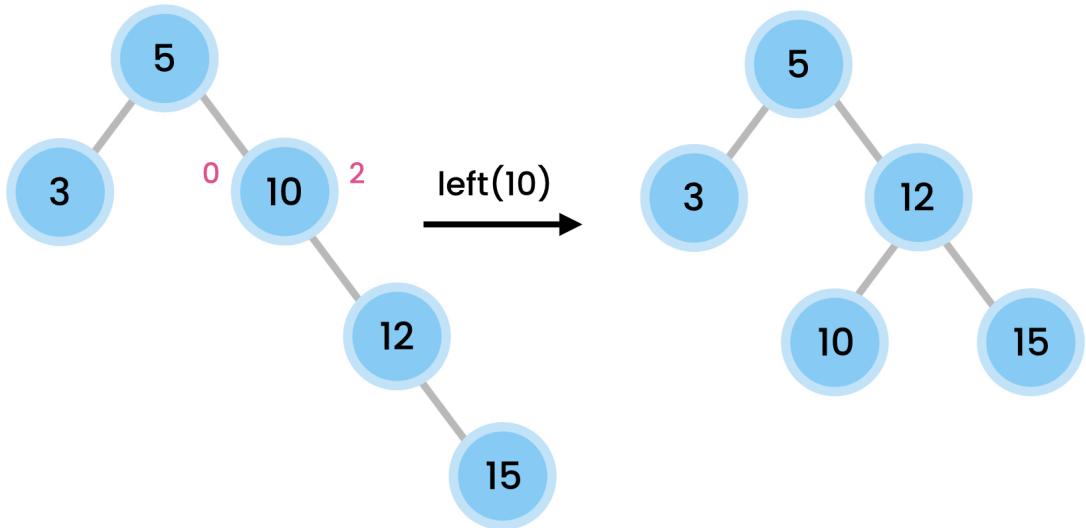


$\text{leftRotate}(1)$



Solution to Set 2 (5, 10, 3, 12, 15, 14)





Solution to Set 3 (12, 3, 9, 4, 6, 2)

