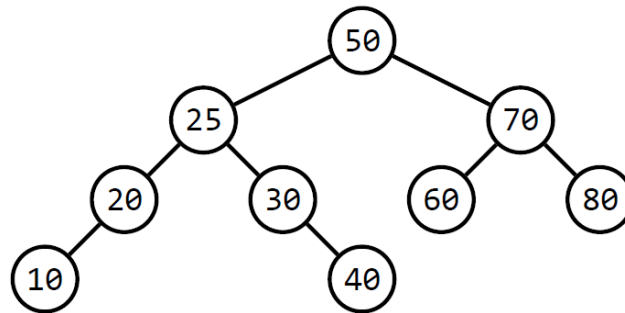


## Sample questions to help prepare for Quiz 2

Answers will not be provided

1. Which of the following statements is correct?
  - A. QuickSort is stable, but MergeSort is not.
  - B. QuickSort is in-place, but MergeSort is not.
  - C. Both QuickSort and MergeSort are stable.
  - D. Both QuickSort and MergeSort are in-place.
2. Given the following self-adjusting tree, perform a rotation of node 25 into the root position, draw the resulting self-adjusting tree.



3. Consider an unusual tree that's a combination of a binary and ternary tree. The root (level=0) has two children. Each level-1 node has three children, and so on, alternating between levels so that nodes at level 0, 2, 4, ... have two children while the others have three children. For a complete such tree (all levels full) with  $n$  keys, consider these two statements:

I  $H = O(\log_2 n)$

II  $H = O(\log_3 n)$

Which of the following is true?

- A. Only I is true.
- B. Only II is true.
- C. I and II are both true.
- D. I and II are both false.