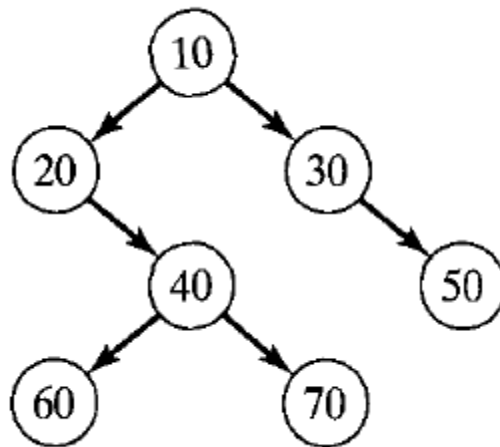


**CST 370**  
**Homework (Sorting and Trees)**

1. Consider the following unsorted array of numbers – 5, 8, 3, 7, 9. Obtain the numbers in sorted order (descending) by applying the **merge sort algorithm**. You are required to outline each step of the algorithm (i.e., show the state of the list after each iteration of the algorithm)
2. Consider the following unsorted arrays of numbers – 5, 8, 3, 7, 9. Obtain the numbers in sorted order (descending) by applying the **quick sort algorithm**. You are required to outline each step of the algorithm (i.e., show the state of the list after each iteration of the algorithm)
3. Is the following tree a binary tree? If so, is it a binary search tree?



4. Is the following tree a binary search tree?

