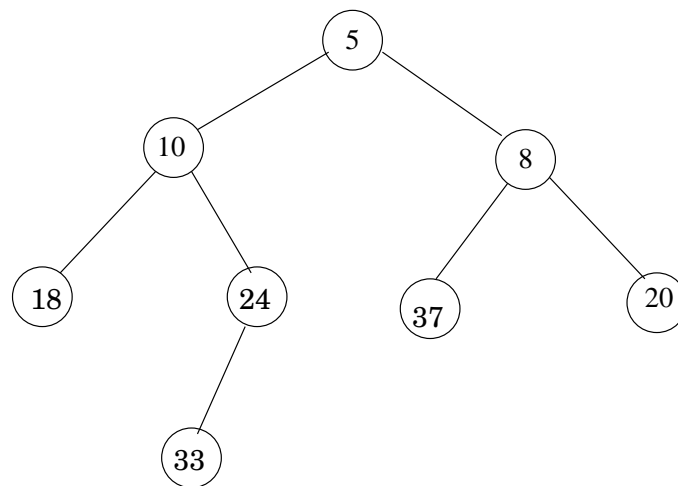


## Homework Assignment 3

Handed Out: May 7

Due: May 14

1. (20 pts) Consider the leftist heap shown below.
  - (a) Show the new heap that results when a deleteMin is performed.
  - (b) To the heap that you got after the deleteMin, insert a new key '7'. Show the new heap after the insertion.



2. (10 pts) In a binary tree, a **full node** is a node with two children. **Argue** that the number of leaves in the binary tree is always equal to the number of full nodes plus 1.
3. (20 pts) Show the result of inserting 2, 1, 4, 5, 9, 3, 6, 7 into an initially empty AVL tree. Show all the steps, including the AVL height violations and what rotations are used to fix them.