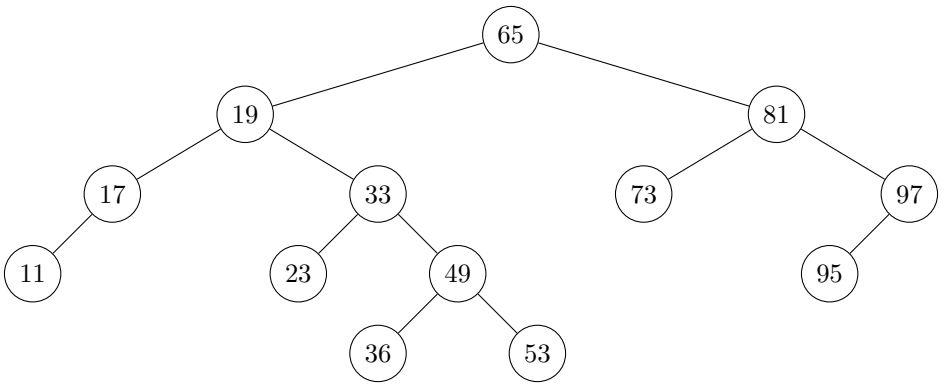
CS 240: Data Structures and Data Management **Winter 2023**

Tutorial 05: February 13

1. [E] Consider the AVL Tree shown below and perform the following operations: insert 61, delete 73, delete 49.



2. [M] Given an array A of n positive integers such that the total number of digits in all integers combined is ℓ, design an algorithm to sort A in $O(\ell)$ time.

3. [H] We consider a modified version of AVL trees where the height difference between the right and left subtrees of any node is in the range $[-2, 2]$ instead of $[-1, 1]$. These are called AVL-2 trees. Prove that the height of an AVL-2 tree on n nodes is in $O(\log n)$.