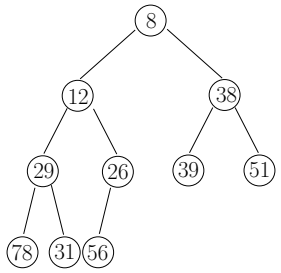
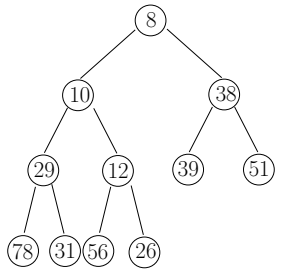
COMP3506/7505: Quiz 2

Name:
Student ID:

Problem 1 (15 marks). Show the priority queue after inserting the number 10 into the binary heap below:

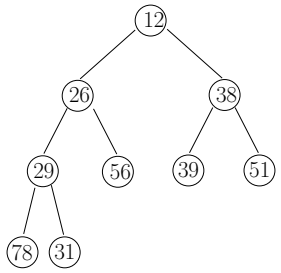


Solution.



Problem 2 (15 marks). Show the priority queue after performing a delete-min on the binary heap shown in Problem 1.

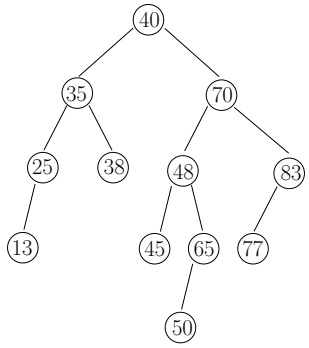
Solution.



Problem 3 (5 marks). Give the array representation of the binary heap shown in Problem 1.

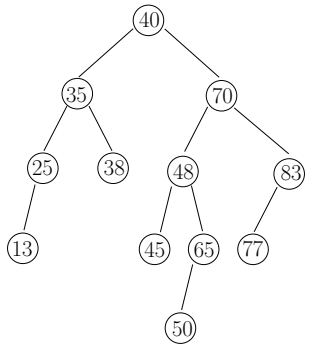
Solution. 8, 12, 38, 29, 26, 39, 51, 78, 31, 56.

Problem 4 (15 marks). Consider the following AVL-tree. Give the sequence of nodes visited when we use the tree to find the predecessor of 69.



Solution. 40, 70, 48, 65.

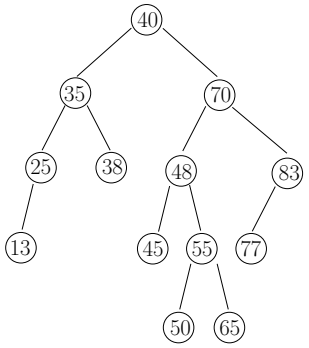
Problem 5 (15 marks). Consider the following AVL-tree again. Give the sequence of nodes visited when we use the tree to find the successor of 69.



Solution. 40, 70, 48, 65.

Problem 6 (15 marks). Consider the AVL-tree in Problem 5. Give the resulting AVL-tree after inserting 55.

Solution.



Problem 7 (20 marks). Consider the AVL-tree in Problem 5. Give the resulting AVL-tree after deleting 38.

Solution.