Email:

Date:

Note!

- **To receive credit, you must show your work and steps for each problem.**
- **Provide explanation as required or as if you wish to.**
- **When asked, draw the correct map(s) or structure(s) and record the EXACT output for full credit.**
- **Put your name on the sheets.**

Reminder!

- **When writing code (even by hand), pay attention to syntax and statement completeness, and**
- **Be consistent when selecting names for functions and variables (as well as styles and conventions).**

Problem #1

A) Given the following displaying forms of a binary tree,

In-Order: G H A L M B D U T

Post-Order: G H L M A U T D B

Draw the corresponding binary tree.

B) Then, display the above binary tree in **Pre-Order** form.

Problem #2

A complete binary search tree CBT of 315 nodes of integers is stored in an array (assuming that the storage will start at index 1).

1. How many levels does this tree have? Show work.
2. How many nodes are leaf nodes? Show work.
3. Where is the second largest value in the array? Show work.

Problem #3

Write a function named `getLeafCount()` that returns the number of leaf nodes in a binary tree of integers.

Problem #4

Given that a BST is storing an integer series from `0` to `n` (`n` is some non-negative integer) with one missing value (for example, `n` is `7` and the missing value is `4`).

Write a function named `getMissingValue()` that will return this missing integer from the above BST of integers.