CptS 122 – Data Structures October 16, 2017



Your Name:	TA's Name:
ID#:	Section #:

Take-Home: Quiz 5 (15 pts) - Binary Search Trees

Print out, and provide your solutions to your TA in lab this week!

1. (4 pts) What is a binary search tree (BST)? Describe the properties of a BST in your answer.

2. (5 pts - 1 pt/number) Given the following sequence of numbers: 70, 3, -68, 12, 85, 100. If the numbers are inserted into a BST in the sequence provided, then what would the tree look like? Draw a diagram for the BST. Be sure to show both branches of a given node.

- 3. (6 pts) Using the BST constructed in question (2), answer the following questions:
 - i. (2 pts) How many comparisons are required to find the number 12?
 - ii. (2 pts) How many children does the node containing the number 3 have? _____
 - **iii.(2 pts)** The tree may consist of multiple leaf nodes. Provide the number in the leaf node stored in the leftmost subtree.

Instructor: Andrew S. O'Fallon